



City of Sunnyvale

Notice and Agenda - Final

Sustainability Commission

Monday, July 15, 2019

7:00 PM

Community Center, Community Room, 550
E. Remington Dr., Sunnyvale, CA 94086

Special Meeting: Joint Meeting with Climate Action Plan 2.0 Advisory Committee

CALL TO ORDER

SALUTE TO THE FLAG

ROLL CALL

ORAL COMMUNICATIONS

This category provides an opportunity for members of the public to address the commission on items not listed on the agenda and is limited to 15 minutes (may be extended or continued after the public hearings/general business section of the agenda at the discretion of the Chair) with a maximum of up to three minutes per speaker. Please note the Brown Act (Open Meeting Law) does not allow commissioners to take action on an item not listed on the agenda. If you wish to address the commission, please complete a speaker card and give it to the Recording Secretary. Individuals are limited to one appearance during this section.

CONSENT CALENDAR (Climate Action Plan 2.0 Advisory Committee Only)

[19-0741](#)

Approve the Climate Action Plan 2.0 Advisory Committee Meeting Minutes of March 20, 2019

Recommendation: Approve the Climate Action Plan 2.0 Advisory Committee Meeting Minutes of March 20, 2019 as submitted.

PUBLIC HEARINGS/GENERAL BUSINESS

[19-0494](#)

Forward a recommendation to City Council to Adopt the Climate Action Playbook, including the greenhouse gas reduction targets

Recommendation: Recommend Alternative 1 to the City Council: Adopt the Climate Action Playbook, including the greenhouse gas reduction targets of 55% by 2030 and 80% by 2050.

ADJOURNMENT

Notice to the Public:

Any agenda related writings or documents distributed to members of this meeting body regarding any item on this agenda will be made available for public inspection in the Environmental Services Department located at 1444 Borregas Avenue, Sunnyvale or can be accessed through the Office of the City Clerk located at 603 All America Way, Sunnyvale during normal business hours and in the meeting location on the evening of the Sustainability Commission meeting, pursuant to Government Code §54957.5.

Agenda information is available by contacting Nupur Hiremath at (408) 730-7743. Agendas and associated reports are also available on the City's website at sunnyvale.ca.gov or at the Sunnyvale Public Library, 665 W. Olive Ave., Sunnyvale, 72 hours before the meeting.

Pursuant to the Americans with Disabilities Act, if you need special assistance in this meeting, please contact Nupur Hiremath at (408) 730-7743. Notification of 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting. (28 CFR 35.160 (b) (1))



City of Sunnyvale

Agenda Item

19-0741

Agenda Date: 7/15/2019

SUBJECT

Approve the Climate Action Plan 2.0 Advisory Committee Meeting Minutes of March 20, 2019

RECOMMENDATION

Approve the Climate Action Plan 2.0 Advisory Committee Meeting Minutes of March 20, 2019 as submitted.



City of Sunnyvale

Meeting Minutes - Draft

Climate Action Plan 2.0 Advisory Committee

Wednesday, March 20, 2019

6:30 PM

Washington Park Building, 840 W.
Washington Ave., Sunnyvale, CA 94086

CALL TO ORDER

Chair Wickham called the meeting to order at 6:40 p.m.

ROLL CALL

Present: 9 - Member Mandy Abend
Member Anne Ashini Fernando
Member John Cordes
Member Sue Harrison
Member Andrew Ma
Member Sue Serrone
Member James Tuleya
Member Drew Wenzel
Member Kristel Wickham

Absent: 2 - Member Stephen Joesten
Member Padmavathy Mahadevan

CAC alternate member Kunz – Present

CAC alternate member Sharma – Absent

CONSENT CALENDAR

[19-0411](#) Approve the Climate Action Plan (CAP 2.0) Advisory
Committee Meeting Minutes of August 2, 2018

Sue Harrison, CAC member, moved, and John Cordes, CAC member, seconded, a motion to approve the minutes of the August 2, 2018 meeting. The motion carried by the following vote:

Yes: 9 - Member Abend
Member Ashini Fernando
Member Cordes
Member Harrison
Member Ma
Member Serrone
Member Tuleya
Member Wenzel
Member Wickham

No: 0

Absent: 2 - Member Joesten
Member Mahadevan

PUBLIC COMMENT

Richard Mehlinger, Bicycle and Pedestrian Advisory Commission (BPAC) member, expressed his enthusiasm about the Draft Climate Action Playbook (“Playbook”). He lauded the ambitious goals, targets, and the consideration of land use in the Playbook. He emphasized that reaching the goals requires the City to accelerate the Playbook’s timeline and to change the way it conducts business, such as specific plan processes, bicycle infrastructure, and climate mitigation.

GENERAL BUSINESS

[19-0412](#)

Review and discuss the Draft Climate Action Playbook

The complete Playbook can be downloaded from the Documents tab of the Climate Action Playbook webpage at bit.ly/sunnyvaleplaybook
<<https://sunnyvale.ca.gov/people/sustainability/climate.htm>>.

Ramana Chinnakotla, Director of Environmental Services, Melody Tovar, Regulatory Programs Division Manager, and Nupur Hiremath, Environmental Programs Manager; from the City of Sunnyvale Environmental Services Department, accompanied by Ben Butterworth, of consultant firm DNV GL, delivered a presentation explaining the structure and content of the Draft Playbook. Staff and the consultant answered questions from CAC members.

The CAC discussed the Playbook, asking clarifying questions and providing comment. Key points of discussion included:

- Strong support for the Playbook's proposed long-term targets for 2030 and 2050, including appreciation for the City's plan to exceed the State's 2030 target (40 percent reduction below 1990 levels) to achieve a 60 percent reduction below 1990 levels.
- Strong support of the proposed development of a communitywide greenhouse gas inventory on an annual basis (Move 5.H).
- Emphasize and strengthen the Moves under Strategy 3 – Decarbonizing Transportation and Land Use to related to planning, land use, and transit-oriented development.
- Suggestion to revise targets for Play 2.3 to: (a) achieve 100 percent all-electric buildings sooner by 2030 instead of 2050; and (b) to eliminate references to Zero Net Energy, which is not clearly defined by the State and still permits use of energy sources that have greenhouse gas emissions.
- Recommendation to emphasize and strengthen the Moves under Strategy 3 – Decarbonizing Transportation and Land Use t.
- Recommendation to add a target for storage under Strategy 1- Promoting Clean Electricity to elevate the importance of storage as it improves grid resilience to climate impacts.
- Suggestion to define quantifiable targets for Plays that do not currently have targets defined.

Staff shared that City Council will be presented a resource request for funding the implementation of the first Game Plan 2022 of the Playbook as a part of the proposed budget for the upcoming fiscal year.

The Committee discussed next steps, including the timeline to City Council's adoption of the Playbook. By general consensus, the CAC determined that a second meeting to discuss the Draft Playbook was not needed. Staff encouraged CAC members to provide any additional feedback by responding to the City's survey on the Draft Playbook.

ADJOURNMENT

Chair Wickham adjourned the meeting at 9:35 p.m.



City of Sunnyvale

Agenda Item

19-0494

Agenda Date: 7/15/2019

REPORT TO SUSTAINABILITY COMMISSION, BICYCLE AND PEDESTRIAN ADVISORY COMMISSION AND THE CAP 2.0 ADVISORY COMMITTEE

SUBJECT

Forward a recommendation to City Council to Adopt the Climate Action Playbook, including the greenhouse gas reduction targets

REPORT IN BRIEF

The City of Sunnyvale's Climate Action Plan (CAP 1.0) was adopted in 2014. It laid the foundation for the City's efforts to achieve greenhouse gas (GHG) reductions and address climate change. With the implementation of CAP 1.0, as of 2016, the City had achieved its 2020 emissions reduction target four years ahead of schedule. However, CAP 1.0 was not designed to achieve the State of California's longer term targets of a 40 percent reduction in emissions below 1990 levels by 2030 (SB 32) and an 80 percent reduction in emissions below 1990 levels by 2050 (S-3-05).

City Council adopted *Accelerating Climate Action* as a Policy Priority in 2017 and directed staff to work on Climate Action Plan 2.0 (CAP 2.0). The goal of the CAP 2.0 Initiative was to update CAP 1.0 to meet or exceed the State's longer term targets. Working with a consultant team and the Council-appointed CAP 2.0 Advisory Committee, staff conducted a technical analysis, gathered extensive community input, and developed the Draft Climate Action Playbook (Playbook).

The Playbook proposes to achieve longer-term targets of a 55 percent reduction in emissions below 1990 levels by 2030 (more ambitious than the State target) and an 80 percent reduction in emissions below 1990 levels by 2050. While not strictly defined, an 80 percent reduction in community greenhouse gas emissions is considered to be equivalent to carbon neutrality by many leading cities (e.g., Portland, Vancouver, Sydney, Seattle) that are a part of the Carbon Neutral Cities Alliance and have committed to achieving carbon neutrality by 2050. The Playbook contains six core Strategies and 18 Plays that are designed to guide the City to achieve the 2050 target. It also includes a Game Plan 2022 of "Next Moves" or specific actions for the City and community to focus on in the next three years. Moving forward, updated Game Plans will be developed in five-year cycles.

Community input was critical to develop the Playbook. A large workshop with more than 160 participants was held in March 2018 to gather creative, innovative ideas from the community, which were subsequently used to shape the Strategies, Plays, and Next Moves presented in the Playbook. A public review draft was released in March 2019 and feedback was gathered through April 2019. The final Playbook incorporates changes based on community feedback.

Initial implementation of the Playbook's Game Plan 2022 is estimated to require additional funding of \$1.64 million in one-time costs and approximately \$500,000 per year in ongoing costs. The Playbook is aligned with ongoing initiatives, including the updates to the Integrated Bicycle, Pedestrian, and

Safe Routes to School Plan and the Green Building Program.

Staff recommends that the Sustainability and Bicycle and Pedestrian Advisory Commissions each forward a recommendation to City Council to Adopt the Climate Action Playbook. The California Environmental Quality Act (CEQA) review for the Playbook is underway and the final determination under CEQA will be presented to the Planning Commission and City Council.

BACKGROUND

The City of Sunnyvale's Climate Action Plan (CAP 1.0), adopted in 2014, outlines the City's path toward mitigating climate change while fostering a sustainable, healthy, and livable community. CAP 1.0 summarized Sunnyvale's greenhouse gas (GHG) emissions for year 2008 (baseline year) and identified mitigation strategies for reducing emissions. The goal of CAP 1.0 was to: (a) achieve the State of California's target of reducing GHG emissions by 15 percent below 2008 levels by the year 2020 (per AB 32), which is deemed equivalent to 1990 emissions; and (b) make progress towards the State's target of 80 percent below 1990 levels by the year 2050 (per Governor's Executive Order S-3-05).

CAP 1.0 Biennial Progress Reports were accepted by City Council in May 2016 and June 2018. These reports concluded that Sunnyvale's 2014 communitywide emissions were equivalent to 1990 levels, and 2016 communitywide emissions were 12 percent below 1990 levels. Thus, the City had achieved and exceeded the State's 2020 target ahead of schedule. However, CAP 1.0 was not designed to meet the State targets of 40% GHG reduction by 2030 (adopted by the Legislature via SB 32 in 2016) or the longer-term target of 80% by 2050. In addition, new approaches and technologies continue to emerge, which offer opportunities to further modernize Sunnyvale's approach to climate action.

At a November 2016 Council Study Session, the City Council and the Sustainability Commission discussed options for advancing climate action and setting broader goals for GHG reductions. In January 2017, City Council added *Accelerating Climate Action* as a Council Policy Priority. In response, staff developed and implemented the Climate Action Plan 2.0 (CAP 2.0) Initiative. The objective of this Initiative is to conduct the research, analysis, and community engagement necessary to support Council policy setting and resource allocation for advancing and accelerating climate action. The expected outcome was an updated climate action framework that would enable Sunnyvale to achieve or exceed the State's longer-term targets.

In June 2017, Council approved funding for the CAP 2.0 project and directed the formation of a community advisory committee, known as the CAP 2.0 Advisory Committee (CAC), to guide the development of the plan. Appointed by the Council, the CAC consisted of 11 members (and three alternate members) representing residents, businesses, developer/real estate firms, volunteer or non-profit groups, and three Commissions (Sustainability, Planning, and Bicycle and Pedestrian).

Staff engaged a consultant team consisting of DNV-GL, Fehr & Peers, IDEO, and Acterra. With consultant support, staff engaged the community in sourcing ideas for the updated plan; evaluated prospective scenarios to meet or exceed the State's 40% by 2030 and 80% by 2050 reduction targets; and designed a new climate action framework including key strategies and an approach to future work planning and resource planning. The result of this effort is the Climate Action Playbook (Playbook) (see Attachment 3; a redline version can be found at bit.ly/sunnyvaleplaybook), which

establishes a framework for achieving and exceeding the State's long-term targets and identifies a focused set of specific actions and associated funding needed to implement them in the next three years.

The Playbook is being presented to three Commissions (Sustainability, Planning, and Bicycle and Pedestrian) and the CAC for recommendation to the City Council.

The Planning Commission is scheduled to consider this item on July 22, 2019.

The City Council is scheduled to consider this item on August 13, 2019.

EXISTING POLICY

General Plan

Chapter 2: Community Vision - Citywide Vision Goals

- *Vision: It is the aspiration of the people of Sunnyvale to build upon the attributes which the City currently enjoys, so that Sunnyvale of the future will become ... A regional leader in environmental sustainability ... advocating to reduce dependence on non-renewable resources by providing greater transportation options, reducing waste, protecting our natural resources, and promoting alternative energy usage and research. We take environmental preservation and protection seriously and consider how each action will affect Sunnyvale for future generations.*
- *Citywide Vision Goal III, Environmental Sustainability: To promote environmental sustainability and remediation in the planning and development of the City, in the design and operation of public and private buildings, in the transportation system, in the use of potable water and in the recycling of waste.*

Chapter 3: Land Use and Transportation

- *Goal LT-2: Environmentally Sustainable Land Use and Transportation Planning and Development - Support the sustainable vision by incorporating sustainable features into land use and transportation decisions and practices.*
 - *Greenhouse Gas Reduction Policy LT-2.2 Reduce greenhouse gas emissions that affect climate and the environment through land use and transportation planning and development.*

Chapter 5: Housing

- *Goal HE-6: Sustainable Neighborhoods - Maintain sustainable neighborhoods with quality housing, infrastructure and open space that fosters neighborhood character and the health of residents*
 - *Policy HE-6.6 Encourage use of sustainable and green building design in new and existing housing.*

ENVIRONMENTAL REVIEW

The adoption of a Climate Action Plan is a "project" within the meaning of the California Environmental Quality Act (CEQA). Although Climate Action Plans are intended to benefit the environment, CEQA requires the agency to evaluate and disclose whether any aspect of the plan will actually have a significant environmental effect. In this case, the Playbook is being adopted in order to implement a mitigation measure required by the Environmental Impact Report (EIR) for the 2017 Land Use and Transportation Element (LUTE) (State Clearinghouse No. 2015062013). Mitigation

Measure 3.13.3 of the LUTE EIR required the City to update the Climate Action Plan to account for new LUTE growth projections. The LUTE EIR was a program EIR that can be used as a CEQA document for subsequent projects under Sections 15168 and 15183 of the CEQA Guidelines.

The City has reviewed the Playbook to determine whether the project's impacts were addressed in the certified LUTE EIR, and to ensure that the Playbook incorporates all applicable performance standards and mitigation measures of the LUTE EIR. Based on this review, an Addendum to the LUTE EIR is being prepared and will be presented to the Planning Commission and City Council for their consideration prior to adopting the Playbook.

DISCUSSION

The Climate Action Playbook is the City's plan to reduce GHG emissions and achieve or exceed the State's longer term GHG targets. The development of the Playbook began in 2017, and the final Playbook will be presented to City Council on August 13, 2019.

Community Engagement

The development of the Playbook engaged diverse stakeholders to ensure it was created by and for the Sunnyvale community. Community engagement was supported by consultants IDEO and Acterra and included gathering community ideas via an online platform; an all-day Ideation Workshop in March 2018 with more than 165 community attendees; a Pitch Event to celebrate and recognize selected community ideas; and extensive publicity through community meetings, social media, and other avenues.

Inter-Departmental Engagement

The CAP 2.0 Initiative was led by the City's Environmental Services Department (ESD). However, as with CAP 1.0, strategies in the Playbook will be implemented by multiple departments and be aligned with citywide programs, policies, and plans. To ensure that the Playbook reflected a comprehensive approach, a CAP 2.0 Executive Team was formed, which included the City Manager and leadership staff from the Department of Public Works, Community Development Department, Office of the City Manager, Information Technology Department, Department of Public Safety, and Finance Department.

One-on-one interviews were conducted with lead staff within these departments to understand their perspective as well as the operational challenges and opportunities for integrating the Playbook into departmental priorities or plans. ESD will continue to engage the CAP 2.0 Executive Team for ongoing implementation of the Playbook to ensure a cohesive approach to implementing its strategies as well as for data gathering and reporting.

Technical Analysis

Sunnyvale's 2016 communitywide GHG emissions were used as a starting point for the technical analysis supporting the Climate Action Playbook. The City's 2016 emissions were approximately at 12 percent below 1990 levels. The most notable action from CAP 1.0 was the formation and launch of Silicon Valley Clean Energy (SVCE), a community choice aggregation agency, which began providing carbon-free electricity to 13 communities in Santa Clara County in 2017. If the full impact of SVCE were factored into 2016 emissions, communitywide emissions are estimated to be 28 percent below 1990 levels. The primary sources of Sunnyvale's remaining emissions are on-road transportation (54%) and natural gas use in commercial and residential buildings (30%), as shown in Figure 1.

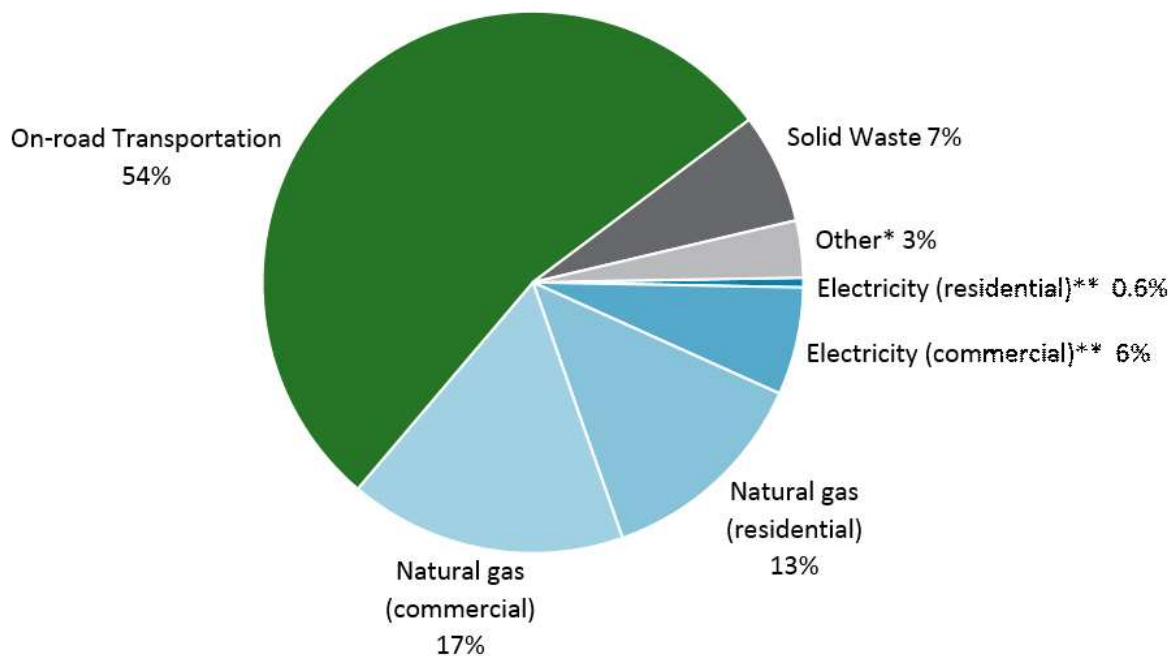


Figure 1. Sunnyvale's 2016 Communitywide Emissions with SVCE Lens

**"Other" represents emissions associated with water, wastewater, off-road motorized equipment and Caltrain.

**In 2016, prior to the launch of SVCE, residential electricity made up 4% of total emissions and commercial electricity made up 20% of total emissions.

A technical analysis was conducted by DNV-GL and Fehr & Peers to identify targets for reducing greenhouse gas emissions and the path to achieve those targets. As a basis for this analysis, Sunnyvale's emissions were forecasted for (Figure 2):

- Business-as-usual or BAU (no action);
- BAU with State policies (accounting for the impact of State policies already in place);
- BAU with State policies and CAP 1.0 implementation (including SVCE impact and implementation of ongoing CAP 1.0 actions); and
- Target reduction path (i.e., the path needed to get to reductions for 2030 and 2050 from our current emissions level).

The BAU forecast utilizes Sunnyvale-specific growth projections from the City's LUTE, adopted in 2017. These growth projections are available through 2035 when the City is projected to achieve complete buildout. This BAU forecast, however, assumes continued growth in the absence of future projections between 2035-2050.

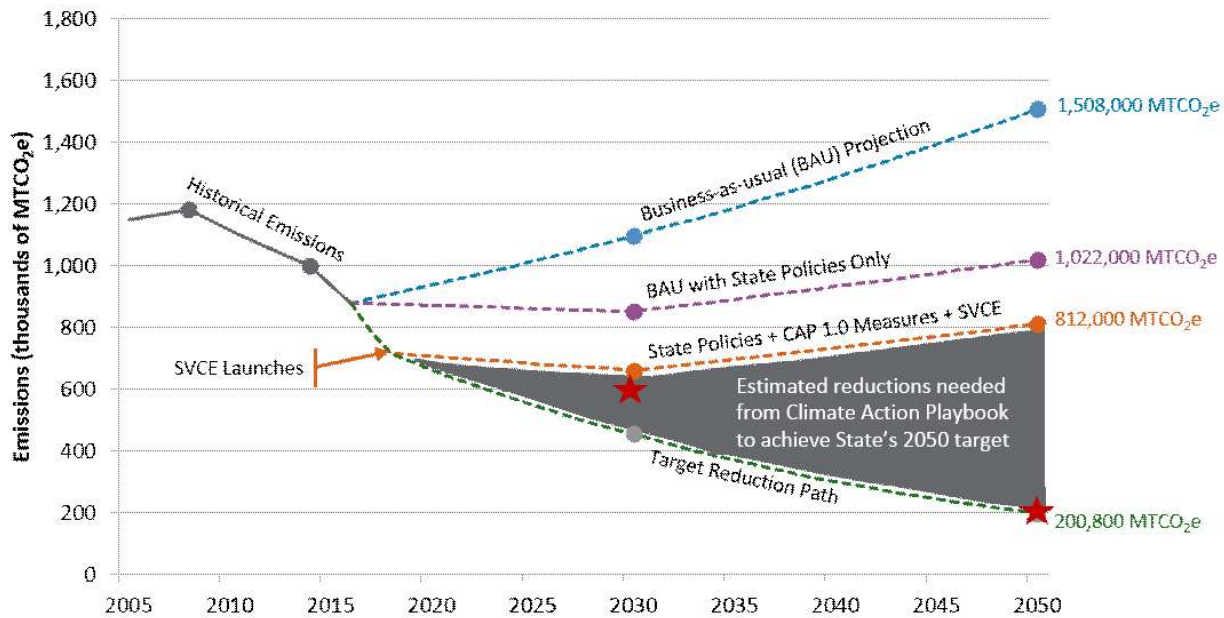


Figure 2. End Game 2050 and Target Path

Using DNV-GL's Climate Scenario Analysis Tool (Climate Tool), potential scenarios were evaluated for 2030 and 2050 to examine how targets for these years could be achieved through actions in four main sectors: natural gas; electricity; transportation; and waste. For transportation, projections of vehicle miles traveled (VMT) were obtained for each 2030 and 2050 using Fehr & Peers' TrendLab tool.

The results of the technical analysis established the following targets for Sunnyvale:

- 55% by 2030 (55x30)
- 80% by 2050 (80x50)

Sunnyvale's selected 2030 target was designed to achieve reductions sooner than the State's target of reducing emissions by 40% below 1990 levels by 2030, recognizing that early action now would be essential to achieving longer term reductions essential for meeting the 80x50 target.

The technical analysis also identified the reductions needed from the four sectors (Figure 3 and Table 1). This formed the rationale for the selection of the core strategies in the Playbook.

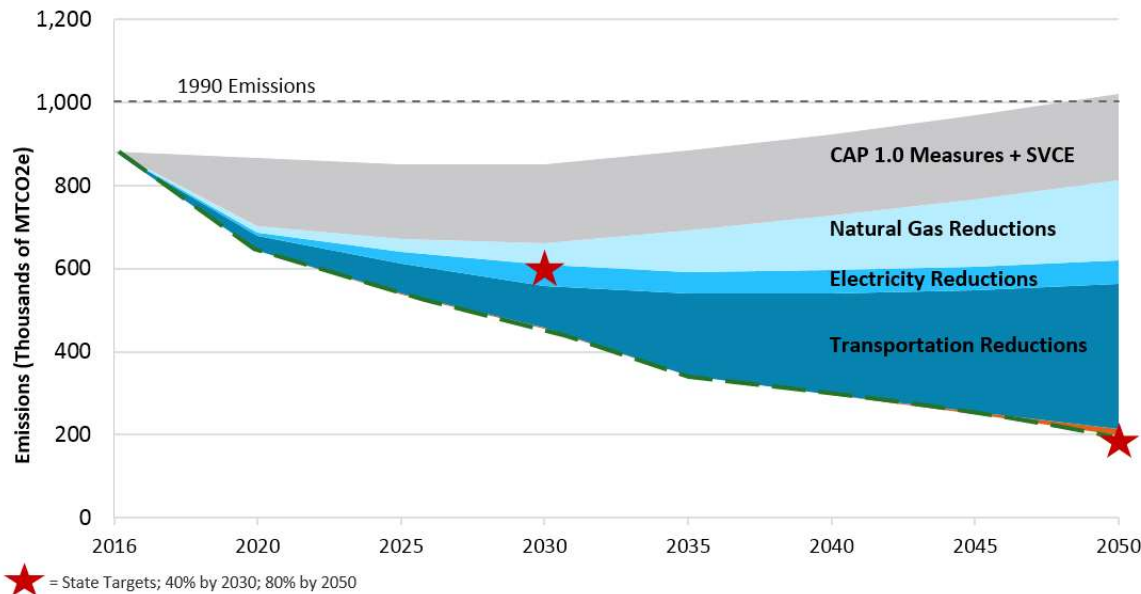


Figure 3. Emissions Reductions from Climate Action Playbook by Sector

GHG reductions in the waste sector (orange sliver below Transportation) constitute <3% of total emissions reductions needed to achieve 80x50.

Table 1. Current and Projected GHG Emissions by Sector with Climate Action Playbook Implementation

GHG Emissions	2030 Emissions (MTCO ₂ e)	2050 Emissions (MTCO ₂ e)
Emissions after State policies + CAP 1.0	662,055	812,012
Reductions Achieved from Climate Action Playbook		
Natural Gas Strategies	-52,328	-191,166
Electricity Strategies	-50,748	-58,215
Transportation Strategies	-99,764	-348,351
Waste Strategies	-3,191	-14,822
Emissions after Playbook Implementation	456,023 (55% below 1990)	199,458 (80% below 1990)

Climate Action Playbook Overview

The Playbook lays out six Strategies that provide the overarching approach for bold climate action to achieve the end game of 80x50. These are:

- Strategy 1: Promoting Clean Electricity
- Strategy 2: Decarbonizing Buildings
- Strategy 3: Decarbonizing Transportation & Sustainable Land Use
- Strategy 4: Managing Resources Sustainably
- Strategy 5: Empowering Our Community
- Strategy 6: Adapting to a Changing Climate

Within each Strategy, there are several Plays that identify areas for action and measurable targets to define progress. See the At-a-Glance: Pathway to 2050 (Attachment 4) for a summary view of Strategies, Plays, and targets. These Strategies and Plays are designed to achieve the proposed targets of 55% below 1990 levels by 2030 and 80% below 1990 levels by 2050 proposed targets.

The Playbook also includes a Game Plan 2022 of “Next Moves,” or specific actions that the City and community can collectively take in the short term to reduce carbon emissions and improve resilience to climate impacts. See Attachment 5 for an At-A-Glance view of Game Plan 2022 (“Next Moves” through 2022). The Game Plan addresses implementation for the next three years, and it will be revised every five years thereafter. It is intended to be dynamic and evolve with changes in state or federal regulations, new technologies, and emerging behavior trends and needs in our community.

Public Review of Draft Climate Action Playbook

The Draft Climate Action Playbook (Draft Playbook) was released in early March 2019 and public feedback was gathered through the end of April 2019 primarily through:

- Community meetings, at which staff provided an overview of the March Draft Playbook and obtained feedback through live polling (via mobile devices) and dot voting exercises. Outreach meetings targeted different audiences, including the CAC, general public, developers, businesses, and three Commissions.
- City Council Study Session on March 26, 2019 at which staff presented the Draft Playbook and received comments from the Council and the general public. A Study Session Summary can be found in RTC No. 19-0652.
- An online survey via Open City Hall, which provided survey respondents with a short survey option or a longer, more detailed two-part option.

Staff advertised the Draft Playbook and public outreach meetings through the City’s website, City e-newsletters, social media ads, newspaper ads, online ads, email blasts to targeted listservs, neighborhood associations and volunteer groups.

A total of 119 people attended the public outreach meetings. A total of 152 responses were received via the online survey. The community was generally supportive of the overarching long-term targets proposed in the Draft Playbook, with a comparable number of individuals indicating that the targets were not ambitious enough. Some written comments expressed concerns about the City spending resources on climate action.

The community was largely supportive of the Plays in the Draft Playbook, as shown in Figure 4. Even Plays that the community was least excited about (e.g., Play 4.4) received an overall favorable rating (67 responses indicating “high enthusiasm” vs. 45 responses indicating low enthusiasm).

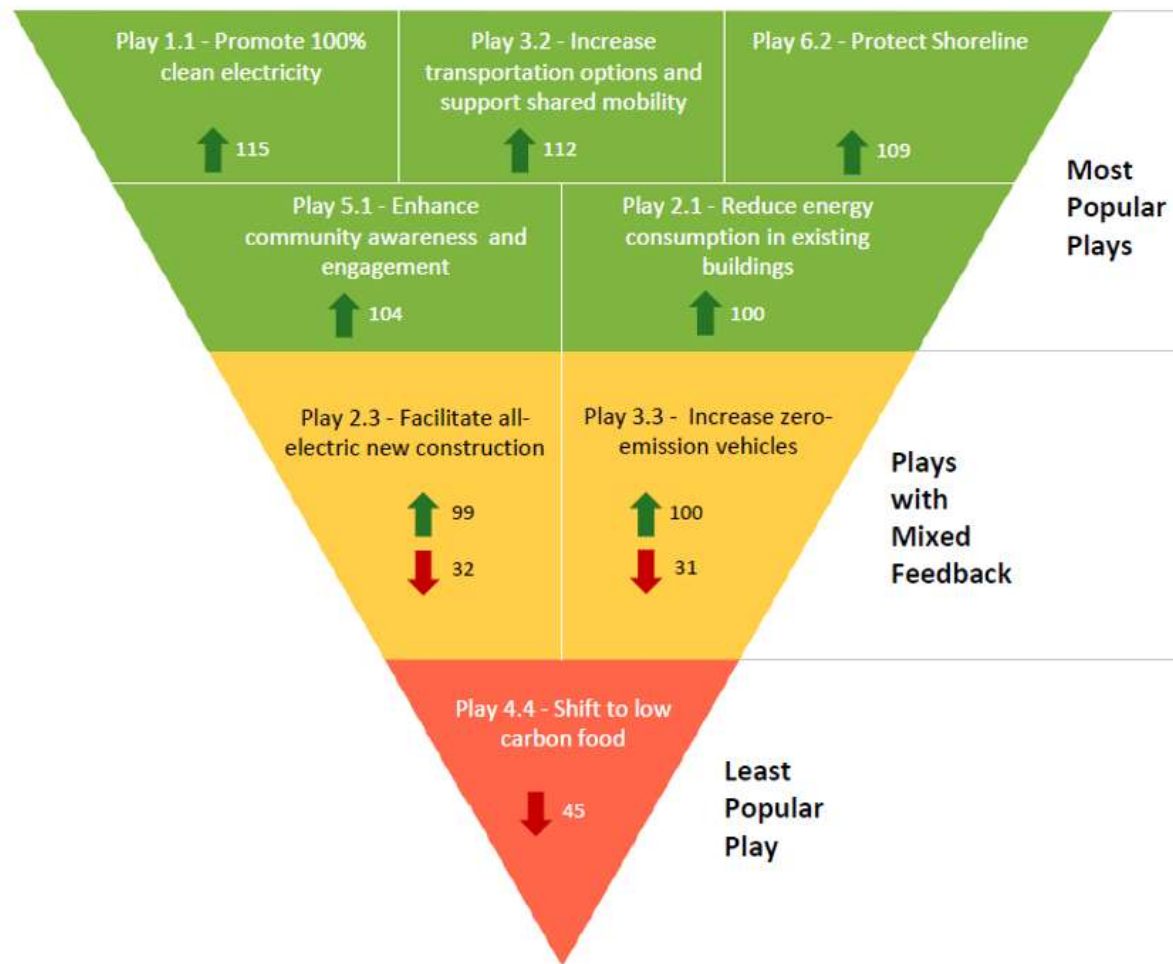


Figure 4. Community Support and Concerns Related to the Playbook

Of the 46 Next Moves in Game Plan 2022, only two Moves received less than one-third support as expressed by low enthusiasm ratings. These were:

- Move 3.B - Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits, and supply restrictions.
- Move 3.I - Monitor autonomous vehicle testing and deployment to inform proactive policy.

Of note is that Move 3.A (Plan for additional housing, with the goal of diverse housing, to reduce long-distance commutes) had mixed feedback as it appeared within the top five Moves with both the most excitement as well as the top five Moves with the lowest excitement.

A snapshot of the public review feedback from surveys and meetings is presented in Attachment 6 and a full compilation of the feedback is presented in Attachment 7.

Key Changes to Draft Playbook

Based on the feedback gathered, the following revisions were made and are reflected in the final Playbook (Attachment 3):

- *Emphasize battery storage*
New Play 1.3 added to reflect the important role of local battery storage in enhancing availability of clean electricity supply and resilience.
- *Accelerate all-electric new buildings*
2030 target for Play 2.3 revised to 100 percent all-electric new buildings, versus previous target of 2050 for all-electric new buildings.
- *Adjust vehicle miles targets downward*
Targets for vehicle miles travelled per person scaled downward to align better to related Plays, such that the targets are ambitious and also attainable. New targets are 13% reduction in vehicle miles per person by 2030 (previously 37% reduction by 2030) and 25% reduction in vehicle miles per person by 2050 (previously 47% reduction by 2030), measured relative to 2016 vehicle miles per person.
- *Simplify Zero Waste target*
Revised the language for Zero Waste Play 4.1 and its targets to specify a per person waste reduction goal rather than a communitywide diversion rate.
- *Revise Play and Move related to food choices*
Play 4.4 and Move 4.H revised to clarify terminology and to emphasize personal choice.
- *2030 GHG target revised*
With the change to the target date for all-electric buildings (which enhanced GHG reductions for 2050) and the dialing down of reduction targets for vehicle miles (which decreased GHG reductions achieved for both 2030 and 2050), the net result is that the GHG reduction target for 2030 decreases from 60 percent to 55 percent below 1990 levels. This 2030 target is still markedly higher than the 40 percent State target. The 2050 target remains at 80 percent.

Strong consideration was given to the following feedback, but changes are not proposed for the Playbook as described below.

- *Increase zero-emission vehicle targets*
Feedback received indicated a preference to dial up the zero-emission vehicle targets (25% of all vehicles are zero-emission by 2030 and 75% of all vehicles are zero-emission by 2050) to reflect the anticipated rapid market adoption of such vehicles and alleviate expectations on sharp reductions in driving patterns reflected in the targets for Plays 3.1 and 3.2. Based on consultant team expertise, increasing the 75 percent zero emission vehicles target for 2050 would be unrealistic. Therefore, the zero emission vehicle targets were not modified from the Draft Playbook.
- *Consider adopting a “carbon neutral” by 2045 target to align with Executive Order B-55-18*
Feedback received requested consideration for adopting the “carbon neutral by 2045” target

for Sunnyvale to align with Executive Order B-55-18. The Executive Order was signed by former Governor Brown in September 2018 during the development of the Playbook and does not define “carbon neutral” as a numerical target. For the purposes of the Playbook, the City assumes “carbon neutral” is equivalent to an 80 percent reduction in emissions. Staff recommends adopting the proposed target of carbon neutral (80 percent) by 2050.

FISCAL IMPACT

Implementation of the Playbook will occur through 2050. Staff has identified the resources needed for the implementation of Game Plan 2022, which covers fiscal years 2019/20 through 2021/22. Funding for the Playbook’s Game Plan 2022 is available in Project 821290 - Climate Action Plan Implementation. This Project includes:

- One-time costs of \$1.64 million, covering consultant services, temporary staffing, and infrastructure needs
- Ongoing costs of approximately \$500,000 per year to fund three new positions: 1.0 FTE Transportation Planner in Public Works, 1.0 FTE Environmental Programs Specialist in Environmental Services, and funding for a Sustainability Fellow in Environmental Services

Funding needs for the Climate Action Playbook will be refined as needed and considered as part of the annual budget process. In the near term, staff will be working with SVCE to identify opportunities to leverage SVCE’s territory-wide initiatives and programs for Sunnyvale residents and businesses. Staff will also work on studying the potential revision of utility user tax rates as a potential revenue source and incentive for electrification. In addition, staff will continue to monitor for grant opportunities to support climate action programs.

PUBLIC CONTACT

Public contact regarding this item was made through the following ways:

1. Posting of the agendas for the Sustainability Commission, Bicycle and Pedestrian Advisory Commission, and the CAP 2.0 Advisory Committee on the City’s official-notice bulletin board, City’s website, and at the Office of the City Clerk.
2. Sustainability Commission and CAP 2.0 Advisory Committee (CAC) public hearing at a joint meeting on July 15, 2019.
3. Bicycle and Pedestrian Advisory Commission public hearing on July 18, 2019.

Community Engagement

During the development of the Playbook, the consultant team conducted extensive outreach to engage the community in contributing ideas for reducing GHG emissions. An ideation workshop was held in March 2018 with more than 165 attendees. A public platform was created to crowdsource ideas and, ultimately, more than 240 ideas were evaluated. In addition, a Pitch Event was held at LinkedIn on July 30, 2019, to recognize selected ideas contributed by the community. The ideas from the community were used to shape the core Strategies and Plays of the Playbook.

Public Outreach for Draft Playbook

To share the Draft Playbook and gather public comments, staff engaged the community through:

1. An online survey hosted on Open City Hall;
2. Social media posts on Facebook and Nextdoor;
3. Seven community outreach meetings during March and April;
4. Paid online and newspaper advertisements;

5. E-mail notifications to selected e-mail lists; and
6. Announcements in the City's e-newsletters.

ALTERNATIVES

Recommend that the City Council:

1. Adopt the Climate Action Playbook, including the greenhouse gas reduction targets of 55% by 2030 and 80% by 2050.
2. Adopt the Climate Action Playbook, including the greenhouse gas reduction targets of 55% by 2030 and 80% by 2050, with modifications.
3. Other recommendation provided by the Commission.

RECOMMENDATION

Recommend Alternative 1 to the City Council: Adopt the Climate Action Playbook, including the greenhouse gas reduction targets of 55% by 2030 and 80% by 2050.

The Climate Action Playbook provides a pathway to exceed the State's 2030 target by achieving a 55 percent reduction below 1990 levels, and achieve the State's 2050 target. The Playbook identifies six core Strategies, 18 Plays, and targets to enable the City to reduce GHG reductions. The Playbook also includes a Game Plan that outlines 46 Next Moves for implementation in the next three years.

Adoption of the Playbook also completes Study Issue ESD 18-01 (Encouraging Heat Pump Water and Space Heating), which was presented to the City Council at a Study Session on November 27, 2019 (See Study Session Summary Report RTC No. 18-1084). The Study Issue presentation covered an overview of heat pump technologies; their potential to reduce greenhouse gas emissions in Sunnyvale; their cost-effectiveness for different building types, appliances, and scenarios; methods to encourage the adoption of heat pump technology including outreach, incentives, and policy approaches; and SVCE's proposed pilot program design. Council expressed interest in exploring the possibility of requiring heat pumps or having all-electric requirements for new construction and expressed support for staff's next steps to include heat pumps as a part of the Playbook. In alignment with the Council direction provided at this Study Session, staff has committed to pursuing the expansion of heat pump technologies via Move 2.C (Develop a program to accelerate the adoption of heat pump water heaters and space heaters) of Game Plan 2022.

The Playbook represents bold targets that are aimed to inspire and guide the City and community in achieving significant GHG reductions. It demonstrates a broad commitment to collaboration across the City organization, with and within the community, and across agencies. It is aligned with ongoing efforts, including the updates to the Integrated Bicycle, Pedestrian, and Safe Routes to School Plan, and the recently adopted Green Building Program.

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Reviewed by: Timothy J. Kirby, Director, Finance Department

Reviewed by: Teri Silva, Assistant City Manager

Approved by: Kent Steffens, City Manager

ATTACHMENTS

1. Reserved for Report to Council
2. Reserved for Addendum to LUTE EIR
3. Climate Action Playbook (with appendices)
4. At-A-Glance: Pathway to 2050
5. At-A-Glance: Game Plan 2022 ("Next Moves")
6. Snapshot of Public Review Feedback
7. Compilation of Public Review Feedback

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CLIMATE ACTION PLAYBOOK



Sunnyvale



Sunnyvale's Climate Action Playbook created by and for the Community

City Manager's Note



The City of Sunnyvale is pleased to release the Draft Climate Action Playbook – a plan for how our community can reduce greenhouse gas emissions and address climate change.

In 2017, the City and community began work to update Sunnyvale's Climate Action Plan (adopted 2014). The Draft Climate Action Playbook is the result of this effort to identify how Sunnyvale will reach the state's ambitious 2050 climate target. Just as a sports playbook identifies a team's winning strategies for achieving success on the field, our Playbook contains winning strategies for how to cut back our carbon emissions.

And just as a sports team relies on the support of its fans, this Playbook represents a collaborative effort between the City and our community. We owe a huge thanks to all who contributed to the process – your creativity and enthusiasm generated a wealth of climate action solutions for our community. Many of your ideas have been incorporated into the Playbook to ensure that it reflects our community's needs and aspirations. Ideas that were not incorporated this time around have been preserved (see *Appendix A: Ideas Roster*), so that we can continue to draw on them for inspiration as we implement the Playbook in the coming years.

Sunnyvale has demonstrated its leadership in climate action through progressive City policies and active community engagement. Yet much remains to be done to reduce our emissions and enhance our resilience to the threats of climate change. The Playbook is the next step to help us take bolder climate actions.

The Playbook is available at the following link:

bit.ly/sunnyvaleplaybook

We look forward to working with you all to take bold climate action and help Sunnyvale achieve its 2050 target.

A handwritten signature in blue ink that reads "Kent Steffens".

Kent Steffens
City Manager

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Executive Summary

Executive Summary

The Climate Action Playbook sets a vision for the City of Sunnyvale to reduce carbon emissions by 2050. As a sustainability leader, Sunnyvale adopted its first Climate Action Plan (CAP 1.0) in 2014 and has already achieved its 2020 greenhouse gas (GHG) emissions target. Now, the State of California has set new targets that move the ball further down the field for deeper emissions reductions of 40% below 1990 levels by 2030 (“40x30”) and 80% below 1990 levels by 2050 (“80x50”).

This Sunnyvale Climate Action Playbook (hereafter “Playbook”) builds upon our past success and integrates new, bold, breakthrough ideas generated by our community. It paves the path for meeting or exceeding the state’s emissions targets of 40x30 and 80x50. To develop the Playbook, we sourced more than 120 ideas from our community (see *Appendix A: Ideas Roster*), worked closely with the CAP 2.0 citizens’ advisory committee, and engaged a consultant team for technical analysis.

Our most recent emissions numbers are from the 2016 season, adjusted to reflect the impact of carbon-free electricity. **With our current line of scrimmage at 28% below 1990 levels, we are well-positioned to meet the state’s 2030 target. However, the path to 2050 calls for steeper reductions in emissions**, even as Sunnyvale’s emissions are forecasted to increase with anticipated growth. State policies on energy, transportation, and GHG mitigation, many of which continue through 2030, will offset these emissions significantly. However, state policies alone are not enough.

Effective local policies and programs are needed to complement state regulations and dramatically shift the trajectory to start decreasing carbon emissions. **To reach 80x50, the City must achieve an interim target of a 55% reduction below 1990 levels by 2030, exceeding the state’s 40x30 target.** This calls for a continued focus on addressing the two largest emissions sources – transportation (54%) and energy (37%) – and for putting in place today the policies that will affect our infrastructure in the coming decades. Local policies are also needed to improve our preparedness for and response to climate impacts and to recover from extreme climate events quickly.

The Playbook lays out six **Strategies** that outline the overarching approach for bold climate action to achieve

the end game of 80x50. Within each Strategy, there are several **Plays** that identify areas for action and measurable targets to define progress (see At-A-Glance on next page). These Strategies and Plays foster innovation to transform the way we power our buildings, travel around the Bay Area, consume goods and services, and empower our community to take individual actions. The Strategies and Plays also identify how we can better adapt to increasing local climate change impacts.

The Playbook also includes **Game Plan 2022, which contains “Next Moves,”** or specific actions, that the City and community can collectively take in the short-term to reduce carbon emissions and improve resilience to climate impacts. Game Plan 2022 is intended to be dynamic and will map out the next moves for three years initially. It will be revised every five years thereafter to account for the changing regulatory context, evolving technologies, behavior trends, and community needs.

Our initial next moves (Game Plan 2022) are planned for implementation over three years between 2019-2022 (see page 34). Some of the next moves will be absorbed and integrated into existing departmental operating or projects budgets. Additional resources needed over the next three years total \$1.39 million in one-time costs, which includes consultant services, temporary staffing, and infrastructure needs, and \$1.47 million in ongoing costs (approximately \$500,000 each year), which includes three additional staff positions and augmenting the City’s ongoing budget for CAP implementation. Resources allocated to implementing the Climate Action Playbook will be refined and finalized as part of the annual process for budget development and approval by the City Council.

Moving forward, the City will evaluate a variety of strategies to fund the implementation of the Playbook (e.g., differential utility use taxes, carbon impact fees) and will establish funding mechanisms customized to our community’s needs.

The issue of global climate change has become increasingly urgent, and **we need action today to create the highest GHG reductions by 2030 so that we can achieve 80x50.** This Playbook provides a path for transforming our community into a resilient and sustainable Sunnyvale through our collective commitment to individual and community-wide action.

At-a-Glance: Pathway to 2050



Strategy 1: Promoting Clean Electricity

Play 1.1	Promote 100% clean electricity	2030 Target: 100% participation in clean electricity 2050 Target: 100% participation in clean electricity
Play 1.2	Increase local solar photovoltaics	2030 Target: 3% of load from local solar 2050 Target: 5% of load from local solar
Play 1.3	Increase distributed electricity storage	2030 Target: 1% of electricity demand stored in batteries locally 2050 Target: 5% of electricity demand stored in batteries locally



Strategy 2: Decarbonizing Buildings

Play 2.1	Reduce energy consumption in existing buildings	2030 Target: 5% of existing homes and businesses receive deep energy retrofit 2050 Target: 30% of existing homes and businesses receive deep energy retrofit
Play 2.2	Support electrification of existing buildings	2030 Target: 20% of homes and businesses completely electrified 2050 Target: 50% of homes and businesses completely electrified
Play 2.3	Achieve all-electric new construction	2030 Target: 100% all-electric new buildings 2050 Target: 100% all-electric new buildings



Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Play 3.1	Balance land use supply and enhance urban form	2030 Target: 13% reduction in vehicle miles per person 2050 Target: 25% reduction in vehicle miles per person
Play 3.2	Increase transportation options and support shared mobility	
Play 3.3	Increase zero-emission vehicles	2030 Target: 20% of all vehicles on road are zero-emission vehicles 2050 Target: 75% of all vehicles on road are zero-emission vehicles



Strategy 4: Managing Resources Sustainably

Play 4.1	Achieve Zero Waste goals for solid waste	2030 Target: Reduce landfilled garbage to 1 lb per person per day 2050 Target: Reduce landfilled garbage to 1 lb per person per day
Play 4.2	Ensure resilience of water supply	Targets will be defined as per state requirement
Play 4.3	Enhance natural carbon sequestration capacity	Supports broader net carbon reductions
Play 4.4	Promote sustainable food choices	Supports broader emissions reductions



Strategy 5: Empowering Our Community

Play 5.1	Enhance community awareness and engagement	Supports all other Plays
Play 5.2	Track and share data and tools	Supports all other Plays



Strategy 6: Adapting to a Changing Climate

Play 6.1	Assess climate vulnerabilities for Sunnyvale	
Play 6.2	Protect shoreline area from sea level rise and coastal flooding	
Play 6.3	Strengthen community resiliency	

Top Climate Actions You Can Take Today



Drive less – walk and ride more. It's good for the air and your health! Use the new Sunnyvale Bike Map¹ to find your best route. And if you need a car, take advantage of State incentives for electric vehicles!

Opt-up to 100% renewable electricity. Take advantage of Silicon Valley Clean Energy's GreenPrime² program.



Separate your food scraps. Collect your food scraps for curbside collection or drop-off at the SMaRT station (residents only) and help meet our community's Zero Waste goal by 2020.

Shop local, eat healthier, waste less. Support local farmers so that food travels shorter distances. Buy food in bulk to reduce packaging trash.



Understand your carbon impact. Download the free IGreenSunnyvale app on your smart phone and track the environmental impact of your sustainable actions.

Get the latest sustainability news and event information. Follow Sunnyvale Environmental Services on Facebook or subscribe to the Sustainable Sunnyvale e-newsletter (email green@sunnyvale.ca.gov).





The Playing Field

A Vision for a Sustainable Sunnyvale

Climate change is a global phenomenon that is affecting the social, environmental, and economic health of communities worldwide. The latest scientific reports demonstrate conclusively that greenhouse gas (GHG) emissions from human activities contribute to a progressively warming climate. The most recent Intergovernmental Panel on Climate Change (IPCC) report (2018) shows that if the current trajectory of GHG emissions continues, even a 1.5-degree Celsius (2.7 degrees Fahrenheit) increase in global temperatures above pre-industrial levels by 2040 could lead to significant threats, including sea level rise, increased wildfires, intensifying droughts, food shortages, and ecosystem damage.

In 2015, the Paris Climate Agreement became the world's first comprehensive climate agreement with the goal of holding the increase in global average temperature to well below 2 degrees Celsius (3.6 degrees Fahrenheit). California's emissions reduction goals for 2030 and 2050 are aligned with the scale of emissions reductions necessary to achieve this goal of the Paris Agreement.

The time to act is now. And local governments, like Sunnyvale, can make bold policy decisions, leverage emerging technologies, and actively engage their communities to mitigate climate impacts. Located in the heart of Silicon Valley, the City of Sunnyvale embodies the spirit of being a socially aware, technologically savvy, ethnically diverse, and actively engaged community. As we witness climate impacts in our community, our City recognizes the need for leadership and action to address the stressors that threaten quality of life across Sunnyvale.

Sunnyvale's planning effort to accelerate climate action is designed to reimagine our community and create opportunities for sustainable growth while moving aggressively toward a fossil-free future.

A Vision for 80x50

- **Sustainable and healthy community that preserves natural resources and runs on clean energy**
- **Mobile and well-connected city, supported by “smart” infrastructure and services**
- **Robust economy that prioritizes community equity and wellbeing**
- **Resilient and prepared community that can adapt to a changing climate**

In setting the course to achieve the state's emissions targets, Sunnyvale will need to balance economic and population growth and an increased demand for City services, all while still meeting our climate goals. This means making a fundamental shift in current patterns of urban development, mobility, building construction, and consumption towards more sustainable, holistic systems. It means initiating high-impact sustainability practices and scaling them across both private and public sectors. It means engaging government leadership, local businesses, schools, community groups, and neighborhoods in coordinated action. Most importantly, it means creating a safe, healthy, and liveable Sunnyvale for all in our community.

We know that evolving conditions mean that we will need to identify new moves in the coming years to continue to reduce emissions. This Playbook provides a framework for us to do so. It clearly defines the end game of reducing emissions by 80% by 2050, identifies key strategies and plays, and sets the ball rolling towards the goal posts.

Together, we can create a sustainable, equitable, and prosperous community by enabling next-generation mobility solutions, enhancing our built environments, investing in cleaner technologies, and minimizing our impact on the natural environment.

Background

Climate Action at the State Level

As a climate action leader, California has continued to demonstrate its commitment to early and aggressive action on climate change. The State Legislature and Governor have adopted ambitious targets to encourage bolder climate action, including statewide GHG emissions reduction targets of reaching:

- 1990 levels by 2020 (Assembly Bill 32, 2006)
- 40% below 1990 levels by 2030 (Senate Bill 32, 2016)
- 80% below 1990 levels by 2050 (Executive Order S-3-05, 2005)

Additionally, in September 2018, Governor Brown signed Senate Bill 100 into law, setting a state target of 100% carbon-free electricity by 2045. SB 100 also sets interim requirements for 50% renewable electricity by 2026 and 60% by 2030, superseding the less ambitious renewable portfolio standards (RPS) previously established.

Building Upon Sunnyvale's CAP 1.0

When the City of Sunnyvale's first Climate Action Plan (CAP 1.0) was adopted in 2014, it set the City on a path toward creating a more sustainable, healthy, and livable community. Since then, the City achieved the state's target GHG reductions by reaching 1990 levels ahead of the 2020 schedule, through both local actions and state policies. Notably, Sunnyvale has been a driving force for the launch of Silicon Valley Clean Energy (SVCE), a community choice aggregator that provides carbon-free electricity to most of our community.

Although CAP 1.0 helped the City exceed the state's 2020 GHG emissions reduction target, it was not designed to identify how more ambitious, long-term targets for 2030 and 2050 could be achieved.

To drive progress towards the aggressive emissions reduction targets by 2030 and 2050, City Council adopted Accelerating Climate Action as a Council Policy Priority in January 2017 and directed the development of an updated plan to reflect this Policy Priority.

Staff worked with consultants to build upon the foundation laid by CAP 1.0 and developed this



Playbook to guide the City and community in achieving or exceeding the state's 2030 and 2050 GHG emissions reduction targets.

Setting a New Bar for Leadership

Climate change is a global threat with local impacts. While communities around the world will be affected differently, we all share a collective responsibility to act.

As the heart of the Silicon Valley, what is created in Sunnyvale has influence far beyond its borders. Along with hundreds of cities worldwide, Sunnyvale has signed and endorsed national commitments and charters, such as:

- **U.S. Climate Mayors**, to uphold the commitments enshrined in the Paris Climate Agreement to meet the 1.5 degrees Celsius target; and
- **#WeAreStillIn**, to set a goal for emissions reductions equal to or greater than the U.S. goal under the Paris Climate Agreement.

While one city alone cannot solve the problem of climate change, we can demonstrate that reaching 80x50 is possible. This Playbook reveals how we plan to do our part to sustain future generations. In this way we join leading cities across the globe to realize the ambition of the Paris Climate Agreement.

Our Accomplishments

City Reaches 2020 Target Ahead of Schedule

Since 2008 – when Sunnyvale’s first GHG inventory was developed – the City has experienced significant growth in population, jobs and construction of new buildings. Despite these trends, which historically resulted in emissions growth, the City of Sunnyvale’s overall emissions decreased 12% below 1990 levels in 2016, surpassing the CAP 1.0 goal of reaching 1990 levels of emissions by 2020.

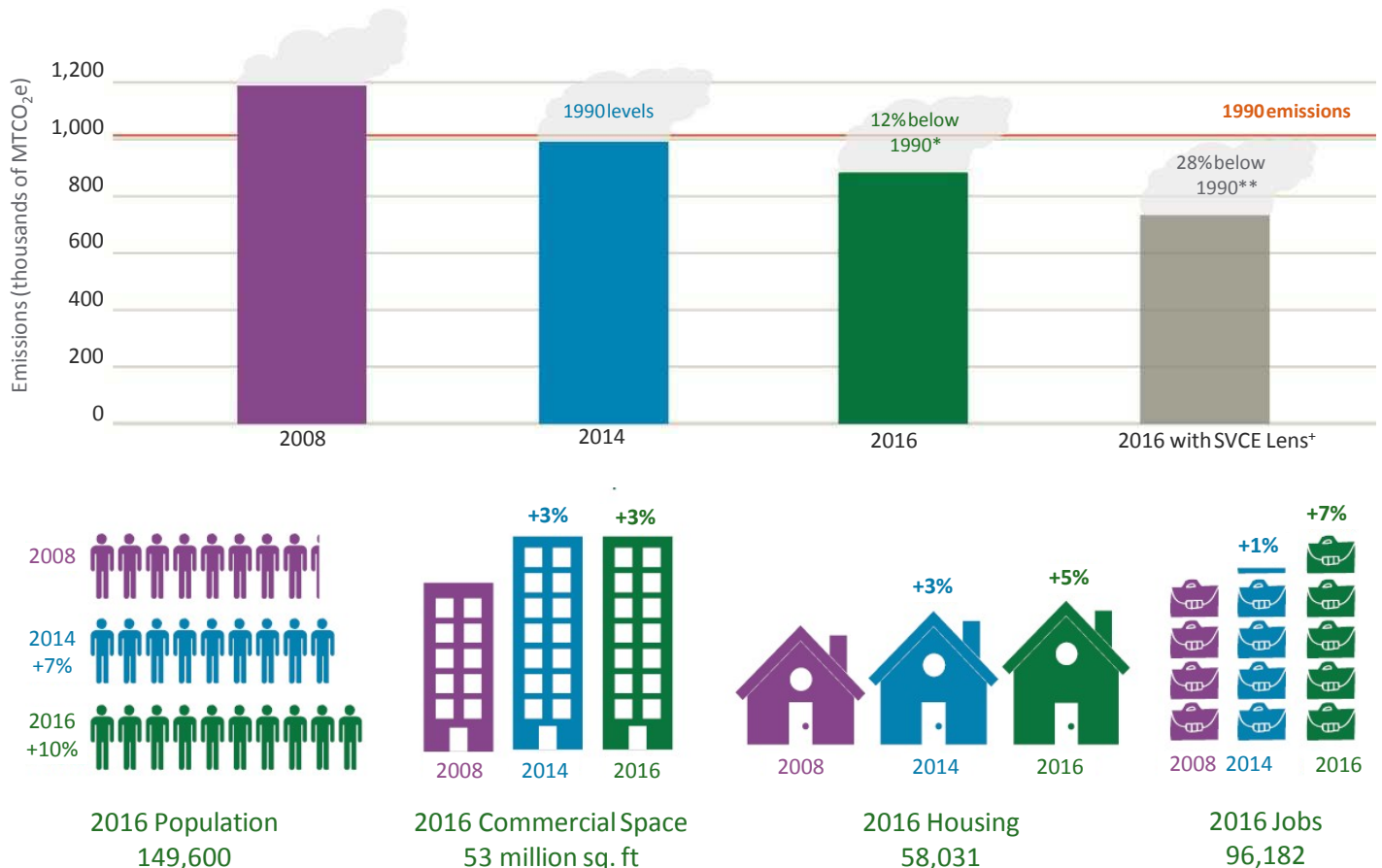
Additionally, SVCE was launched in 2017 and has had an immediate impact. SVCE is the community choice aggregator for Sunnyvale and 12 neighboring communities; they purchase clean electricity on our behalf. Creating such an agency was the action from

CAP 1.0 with the greatest GHG reduction potential. Since SVCE launched, it has provided clean electricity to 97% of Sunnyvale residents and businesses.

If SVCE had been supplying its 100% GHG-free electricity to Sunnyvale in 2016, we estimate that 2016 emissions would have been 28% below 1990 levels – putting our City on its way to achieving the State’s climate target of 40% below 1990 levels by 2030.

The clean energy provided by SVCE is the foundation for the city-wide energy transition Sunnyvale will need across all sectors. The use of carbon free electricity is essential as we shift away from the use of fossil fuels in buildings and transportation through electrification strategies. This is why SVCE is not only an accomplishment to be celebrated from our CAP 1.0, but also one that will continue to be the foundation for actions in this Playbook.

Sunnyvale’s 2016 Accomplishments



*25% below 2008.

**39% below 2008.

[†] Estimated impact of SVCE by applying 2017 SVCE enrollment data to the City’s 2016 emissions.

Current Emissions

2016 GHG Emissions in Sunnyvale

In 2016, Sunnyvale emitted 880,000 metric tons of carbon dioxide equivalent (MTCO₂e), representing a 12% decrease in emissions below 1990 levels. Prior to the implementation of SVCE, electricity and natural gas consumption in buildings were the largest source of emissions (48%), followed by on-road transportation (44%) and other sources.

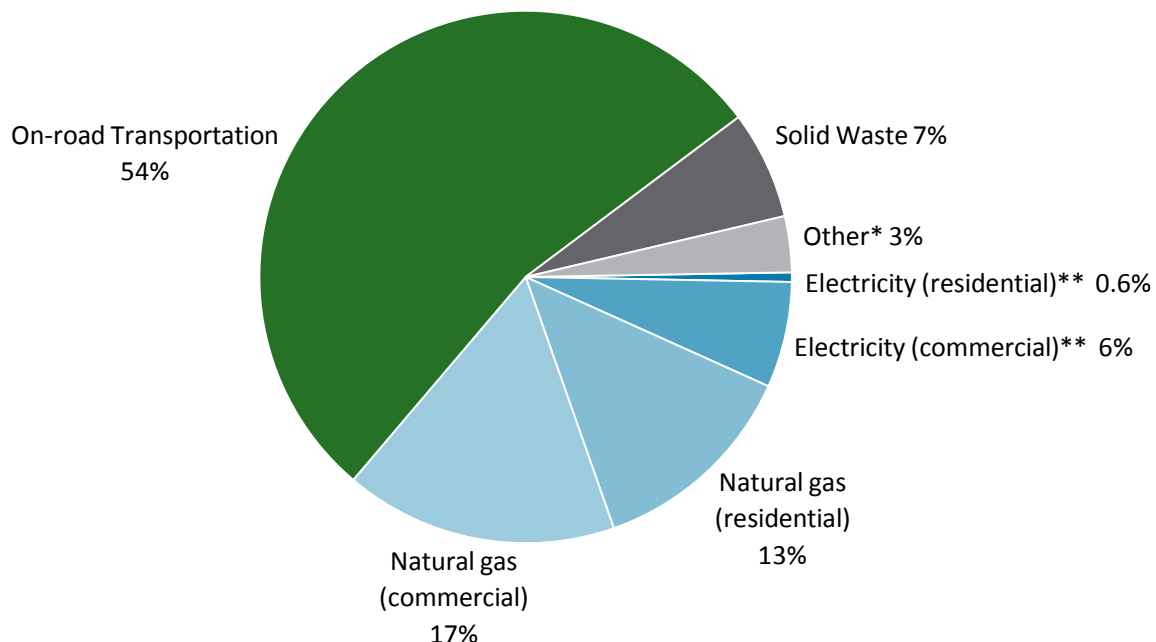
By the end of 2017, however, 98% of Sunnyvale's residents and businesses were purchasing carbon-free electricity from SVCE. Applying these 2017 SVCE participation levels to the 2016 GHG Inventory decreases total emissions to 721,000 MTCO₂e – an additional 16% drop (total 28% below to 1990 emissions) resulting from switching to clean electricity.

The Impact of Clean Electricity

With SVCE, electricity use in residential and commercial buildings now makes up a much smaller portion of total emissions, with transportation now the largest emissions source (54%), followed by natural gas in buildings (30%) and other sources.

As electricity continues to be supplied by clean, renewable sources, the importance of addressing natural gas and transportation emissions increases. The pathway to zero-emission buildings and transportation, therefore, will largely depend on electrification strategies and growing clean electricity supplies, to move the City away from petroleum and other fossil fuel emissions.

City of Sunnyvale Greenhouse Gas Emissions Sources Estimated 2016 Emissions (with SVCE)



*"Other" represents emissions associated with water, wastewater, off-road motorized equipment and Caltrain.

**In 2016, prior to the launch of SVCE, residential electricity made up 4% of total emissions and commercial electricity made up 20% of total emissions.

Future Scenarios: 2030 and 2050

Projecting Future Emissions

To understand the level of action the City must undertake to achieve 2030 and 2050 emissions reduction targets, it is necessary to consider how projected growth, state policies and existing efforts will impact future emissions.

As shown below, City of Sunnyvale's GHG emissions are forecasted to increase over time by 2050. This is despite key initiatives at the state and local levels to make electricity, buildings and cars less carbon intensive.

Key state policies and programs include:

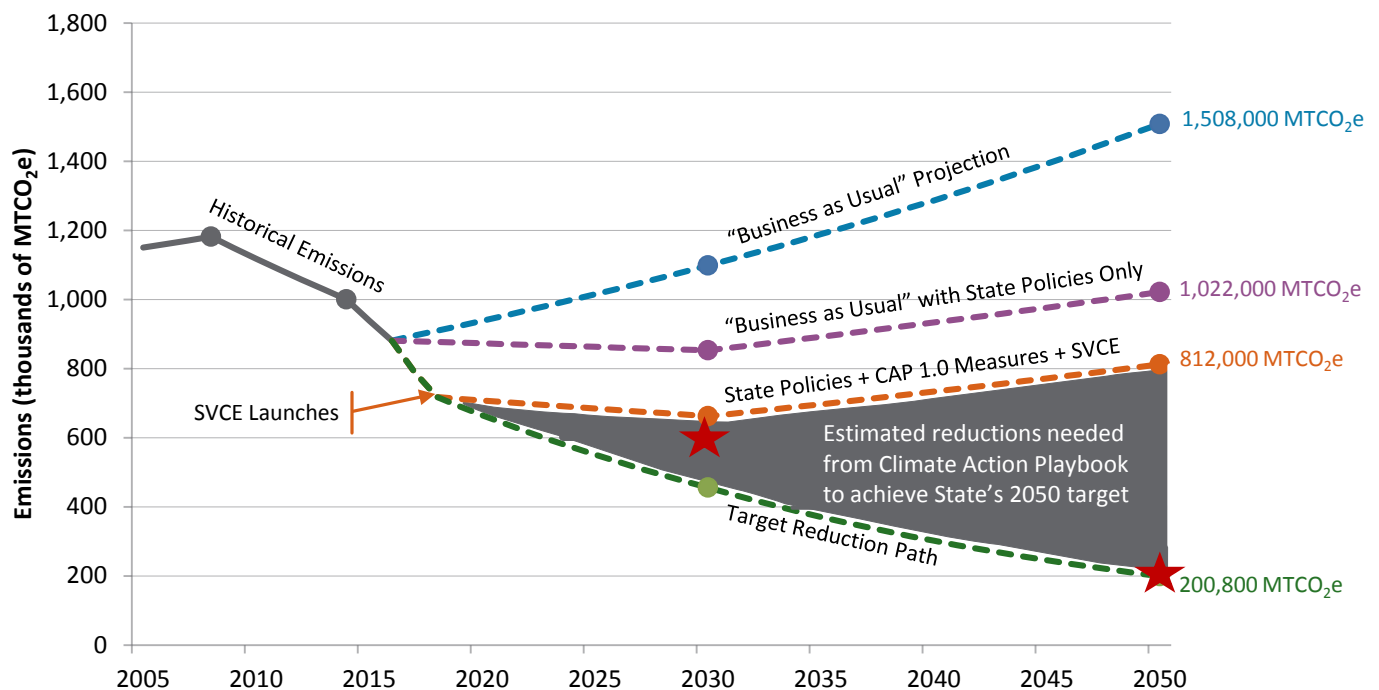
- Renewable Portfolio Standard (Senate Bill 350, 2015)
- Title 24 of California Building Standards Code
- Advanced Clean Cars Program (offered by California Air Resources Board, 2012)

These state policies generally address emissions through 2030, after which without further state and local action, emissions are forecast to increase through 2050 due to anticipated growth.

CAP 1.0 measures currently being implemented by Sunnyvale are also included in the analysis, including the full implementation of SVCE. The grey shaded area indicates additional emissions reductions needed from City action to achieve its end game of 80x50.

Early action is critical to setting Sunnyvale on a path to achieving 80x50, especially considering the projected growth in population and jobs. **For this reason, it is important that Sunnyvale achieve a reduction of 55% below 1990 level emissions by 2030 – surpassing the State's goal of 40% reduction by 2030.** The programs and infrastructure critical to achieving the 2050 goal must be in place and well underway by 2030 to put the City on the 80x50 trajectory.

Historical & Forecasted GHG Emissions: 2005-2050



The business-as-usual (BAU) forecast utilizes Sunnyvale-specific growth projections from the City's Land Use and Transportation Element (LUTE), adopted in 2017. These growth projections are available through 2035 when the City is projected to achieve complete buildout. This BAU forecast, however, assumes continued growth in the absence of future projections between 2035-2050.

★ = State Targets: 40% by 2030; 80% by 2050

Future Scenarios: 2030 and 2050

A Path to 80x50

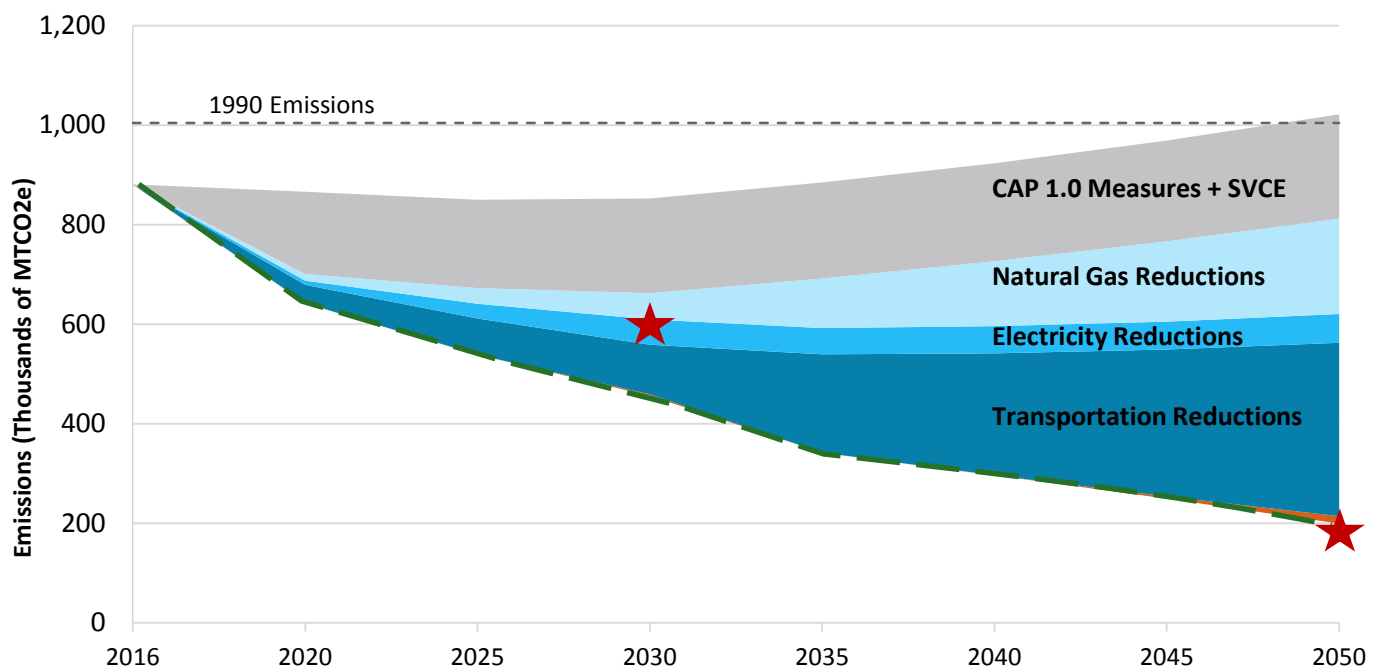
The City must take action to reduce emissions from four key sources – natural gas, electricity, transportation fuels and waste – in order to achieve its goal of carbon neutrality by 2050. While action is needed across sectors, some sectors may need more than others. Evaluating different scenarios for reducing emissions is valuable for understanding how actions result in GHG reductions and for guiding the selection of strategies to focus on in the coming decades.

To develop Sunnyvale’s Playbook, we explored the emissions reduction potential for each sector (shown below; see *Appendix B: Technical Background*). This scenario analysis incorporates the many existing City initiatives, including CAP 1.0 implementation of SVCE and the new FoodCycle (food scraps collection) program. The upper bound represents the adjusted business-as-usual scenario, where anticipated emissions are offset until 2030 by state policies and programs. Each “wedge” in

the chart, identified by a different color, represents the reductions needed from different sectors. The largest emissions reductions needed are in the transportation sector, followed by natural gas use in buildings.

The Playbook identifies strategies, plays, and measurable targets to achieve the emissions reductions related to each emissions source.

The scenario presented below shows the City exceeding the State’s 2030 target of 40% below 1990 levels on the path to achieving the State’s 2050 target. Aiming for emissions well beyond the 2030 State target is essential to being able to achieve the 2050 State target. Early actions help avoid higher cost approaches to retrofit and rebuild, and can have lasting impacts. Early action also has the greatest potential to inspire actions in other communities, amplifying the positive impact of Sunnyvale’s commitment to accelerating climate action.



★ = State Targets; 40% by 2030; 80% by 2050

GHG reductions in the waste sector (orange sliver below Transportation) constitute <3% of total emissions reductions needed to achieve 80x50.



Photo credit: Manish Mohapatra

Six Climate Strategies for the Win

Introduction to the Playbook

Sunnyvale’s Playbook engages the enthusiasm of Sunnyvale’s community, innovation of local technology companies, and creative can-do Silicon Valley spirit to create an aspirational, achievable and adaptable plan. It lays out a framework of overarching key strategies designed to be used by the City and the community to plan and implement long-term climate actions. This framework readies the field for Sunnyvale’s long-term GHG emissions reduction targets to meet or exceed the state goals of 40% by 2030 and 80% by 2050 (“80x50”).

Reaching 80x50 – or carbon neutrality – is our “end game.” In the context of reducing emissions, the target of 80x50 is generally considered to be aligned with carbon neutrality, with the potential for remaining emissions to be addressed through sequestration.

The Playbook lays out the pathway that can be followed to achieve our *end game*, hereafter referred to as “80x50”:

- **Six key Strategies** for Sunnyvale to reduce fossil fuel consumption and greenhouse-gas emissions, as well as enhance resilience and adapt to climate change.
- **Eighteen Plays** associated with key strategies, that specify a plan of action. Where possible, Plays are associated with *measurable targets*, which will be tracked and reported in progress reports.

Following the Plays is our “*Game Plan 2022*,” a compilation of the **Next Moves** to be taken by the City in the next three years. The Game Plan of Next Moves will be revised every five years thereafter to be sure we stay on track with the Plays and reach the end game.

Our Team

- **Sunnyvale’s local government**, including all City departments.
- **Community members** who live or work in Sunnyvale.
- **Regional Agencies and Organizations**, such as Silicon Valley Clean Energy (SVCE), Valley Transportation Authority (VTA), County of Santa Clara, and Valley Water, among others.
- **Private Sector**, including large corporations, small businesses, technical consultants, contractors, manufacturers of clean technologies, start-ups, funders, and technology incubators.
- **Non-Profit Organizations** that provide support for grassroots community engagement initiatives.

End Game in 2050

- **80x50:** We are seeking to reduce emissions 80% by 2050. Remaining emissions could be sequestered within the city or nearby through projects such as urban forestry, marsh management, or applying compost to our soils.

Strategy 1: Promoting Clean Electricity



Path to 2050

Community-wide electricity can be supplied by different providers, including investor-owned utilities (like PG&E), wholesale electricity markets (used by some businesses), and by local building-scale projects, such as rooftop solar photovoltaic (PV). Sunnyvale has made tremendous progress in reducing emissions in this key sector by launching a community choice energy program, which combines the collective buying power of a community to procure power directly from electricity suppliers. With the launch of SVCE in 2017, 98% of Sunnyvale's residential and commercial accounts receive carbon-free electricity.

Our success with SVCE will help us move the ball down the field faster than state requirements, as outlined in:

- Senate Bill 350, requiring all utilities in the state to source 50% of their electricity from renewable energy by 2030, and
- Senate Bill 100, committing California to 100% carbon-free electricity by 2045.

Moving forward, the City will seek to encourage and promote the use of carbon-free electricity sources from all energy providers. Electricity-related emissions have already reduced approximately 76% by moving from conventional PG&E electricity (left bar) to SVCE's carbon-free electricity. The remaining emissions are associated with electricity procured from other electricity providers and from conventional (not carbon-free) sources. The City will continue to work on shifting these remaining emissions to carbon-free sources by working with large purchasers of electricity that buy electricity from wholesale markets (i.e., direct access customers).

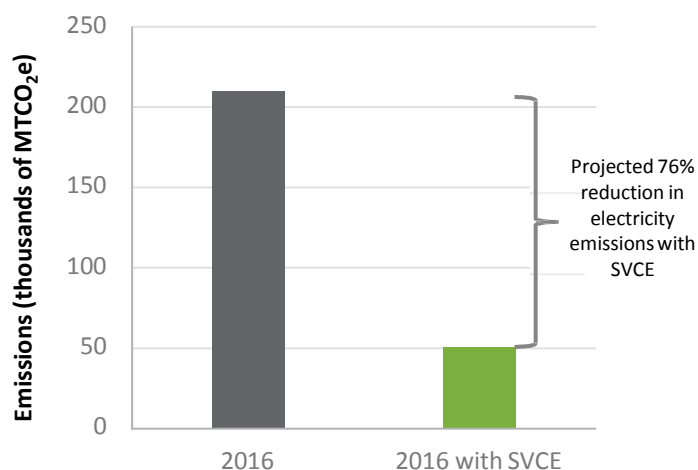
In addition to grid-supplied electricity, the City of Sunnyvale has the opportunity to leverage the falling cost of GHG-free distributed energy resources, such as solar photovoltaic (PV). Currently, approximately 1% of Sunnyvale's electricity comes from locally generated solar PV. Increasing local investments in distributed energy resources, such as solar PV, particularly when combined with on-site energy storage, may enable buildings to be self-sufficient during power outages, thereby enhancing resilience to climate-induced extreme

	Targets	
Play 1.1: Promote 100% clean electricity	2030:	100% participation in clean electricity
	2050:	100% participation in clean electricity
Play 1.2: Increase local solar photovoltaics	2030:	3% of load from local solar
	2050:	5% of load from local solar
Play 1.3: Increase distributed electricity storage	2030:	1% of electricity demand stored in batteries locally
	2050:	5% of electricity demand stored in batteries locally

weather events. In addition, increased solar installations May also support the local solar industry and, therefore, jobs growth.

Supply of clean electricity is a critical foundation for Strategies 2 (Decarbonizing Buildings) and 3 (Decarbonizing Transportation & Sustainable Land Use). As such, the City plans to continue supporting and expanding Sunnyvale's participation to transition all electricity accounts to SVCE's clean electricity by 2030. Further, the City will encourage expansion of local solar to provide 5% of total electricity by 2050, as storage options increase. Further, the City will continue to explore opportunities to increase distributed battery electricity storage at homes and businesses.

Sunnyvale Electricity Emissions



Strategy 1: Promoting Clean Electricity



Plays for the Win

Play 1.1: Promote 100% clean electricity. The City is committed to working with SVCE to expand 100% clean energy services to 100% of our community. Supporting and protecting this clean electricity supply is critical to other Strategies from this Playbook that rely on decarbonization (namely, Strategies 2 and 3).

Play 1.2: Increase local solar photovoltaics (PV).

Targeted incentives, regulations and educational resources will be essential to increasing adoption of distributed solar resources in Sunnyvale. These will help ensure local supply but also help to offset demands on the electricity grid during peak demand periods.

Play 1.3: Increase distributed electricity storage.

The City will work with Silicon Valley Clean Energy to pursue opportunities for electricity storage at the building scale, separate from the utility-scale storage that SVCE plans to invest in as a part of its Decarbonization Roadmap. Estimated local storage in Sunnyvale as of 2019 is less than 0.5 MW (Source: California Solar Initiative). Battery technologies are typically rated by the maximum amount of power (kilowatts) they can continuously provide over a 4-hour period. Accordingly, battery installations may be sized to meet specific power and duration requirements. As battery technologies improve, the City will promote and encourage the use of distributed (or behind-the-meter) electricity storage at commercial and residential buildings in Sunnyvale. Local electricity storage provides opportunities to lower peak electricity demand periods and improve grid resilience; improve cost-effectiveness of electricity for the consumer as time-of-use rates go into effect (anticipated in 2020); and supply emergency backup power for limited periods during power outages.

Strategy 2: Decarbonizing Buildings



Path to 2050

While Sunnyvale has experienced significant growth in recent years, emissions from the building sector have decreased by 40% compared to 2008 levels. These reductions can be attributed to many efforts, including the City's incentive-based Green Building Program; a cleaner electricity grid; and financial incentives offered to businesses and residents for efficiency upgrades.

As the electricity supply has become GHG-free, key challenges and opportunities remain for further reductions in emissions associated with the buildings sector. We must continue to pursue all energy efficiency opportunities to reduce overall energy demand and help our citizens and businesses save money. Secondly, we must identify technical and financial innovations to move buildings away from natural gas, which is used to heat our homes, offices and other buildings, as well as to heat water.

The State of California is moving towards Zero Net Energy (ZNE) new buildings. The upcoming Uniform Building Code cycle (in effect January 2020) is expected to include a requirement for all new residential buildings to be ZNE by 2020 and all new commercial buildings to be ZNE by 2030. However, these requirements do not fully address natural gas consumption as the ZNE approach offsets electricity consumption with onsite generation. For this reason, the City has chosen to focus on all-electric buildings that contain no natural gas infrastructure.

To transition away from fossil fuel usage in buildings, partnerships with SVCE, other cities, utilities and the private sector will be essential to effectively target electrification strategies for implementation and to also advocate for building electrification at the State level. These partnerships can also lend themselves to scaling-up the deployment of clean electric appliances to heat our homes, buildings and water.

The City of Sunnyvale will focus on improving building energy efficiency, reducing natural gas use through building electrification, and continuing to source electricity from renewable sources in order to pave the way to a decarbonized building sector by 2050.

Targets		
Play 2.1: Reduce energy consumption in existing buildings	2030:	5% of existing homes and businesses receive deep energy retrofit
	2050:	30% of existing homes and businesses receive deep energy retrofit
Play 2.2: Support electrification of existing buildings	2030:	20% of homes and businesses completely electrified
	2050:	50% of homes and businesses completely electrified
Play 2.3: Achieve all-electric new construction	2030:	100% all-electric new buildings
	2050:	100% all-electric new buildings

Decarbonizing buildings requires that we address new construction and also seek to retrofit buildings, since not all buildings will be rebuilt before 2050. Play 2.3 seeks to maximize electrification implementation on new buildings, and the target is to get to 100% quickly. Plays 2.1 and 2.2 seek to improve efficiency and then switch fuel uses to electricity. The modest target for efficiency in the early years reflects the relatively low participation seen in efficiency programs. While efficiency is still essential, the Playbook aims for steeper progress on encouraging electrification through appliance retrofits with clean technologies like heat pump technology. The Playbook envisions that by 2050, at least half of the buildings are fully electrified.

Plays for the Win

Play 2.1: Reduce energy consumption in existing buildings. Increasing efficiency will mean continued program outreach and incentives to residents and businesses to encourage efficient designs for new construction and retrofits in existing buildings. System efficiencies such as insulation and upgrades to electric heat pump technologies are top priorities.

Strategy 2: Decarbonizing Buildings



Play 2.2: Support electrification of existing buildings. Building energy optimization includes an innovative focus on installing efficient, electric systems to heat water and heat/cool interiors. Space and heat pump water heaters are high-efficiency alternatives to natural gas systems and have the added benefit of being powered by clean electricity.

Play 2.3: Achieve all-electric new construction. While the state requires moving toward Zero Net Energy (ZNE) for new construction, the City will work towards incentivizing and promoting all-electric new construction options for deep decarbonization.

Strategy 3: Decarbonizing Transportation & Sustainable Land Use



Path to 2050

The transportation sector is the largest source of GHG emissions in Sunnyvale, mostly attributed to personal driving. Congestion from daily traffic creates pressure on the city's transportation infrastructure, reduces mobility and safety and increases emissions.

The City of Sunnyvale is committed to a vision of a complete community, which represents a place to live that is less dependent on automobiles. This includes:

- Comfortable, safe, convenient, and complete pedestrian and bicycle networks
- Transit access on arterial streets within a 10-minute walk from home or work
- Diverse housing choices with a range of affordability
- Village Centers with enhanced neighborhood services

As Sunnyvale's population and jobs continue to increase, providing realistic options for reducing single-occupancy vehicles is key. With this in mind, Sunnyvale is focusing job growth and housing in specific plan areas including Downtown, along El Camino Real, and in the Transit and Village Center areas. The vision is to allow for economic growth and revenue that supports local businesses, while providing housing that ensures that residents have places to live, work and play without having to travel long distances.

The City's plans and policies call for an integrated transportation approach that supports pedestrian-, bike- and transit-friendly neighborhoods. Vehicle electrification augments these mobility strategies to support further emissions reductions and achieve the state's climate goals.

Furthermore, Sunnyvale will continue to explore innovative first- and last-mile solutions to encourage greater use of public transit, including accommodating on-demand ridesharing, piloting shared bicycle and scooter programs and assessing the potential for shuttle service in targeted areas.

Play 3.1: Balance land use supply and enhance urban form	Targets	
	2030:	13% reduction in vehicle miles per person
Play 3.2: Increase transportation options and support shared mobility	2050:	25% reduction in vehicle miles per person
Play 3.3: Increase zero-emission vehicles	2030:	20% of all vehicles on road are zero-emission vehicles
	2050:	75% of all vehicles on road are zero-emission vehicles

There are two elements to understanding emissions from the transportation sector. One is how much driving occurs, typically expressed as vehicle miles traveled, and the other is how much GHG emissions come from a typical vehicle. The Playbook targets use both of these metrics to achieve the overall reductions needed from the transportation sector. The Playbook targets envision big changes by 2050 – that we are in general driving in single occupancy vehicles half as much as we do today, and that three out of every four vehicles are zero-emission vehicles. To the extent that one of these targets is lowered or not achieved, stronger performance in the other will be needed to achieve the overall emission reduction targets for the transportation sector.

Plays for the Win

Play 3.1: Balance land use supply and enhance urban form. The City is committed to creating places to live that are less dependent on automobiles, through ensuring access to nearby services and activity centers. Furthermore, Sunnyvale seeks to provide housing options for all incomes and lifestyles, particularly near transit corridors and Caltrain stations, to support alternative modes of transportation.

Strategy 3: Decarbonizing Transportation & Sustainable Land Use



Play 3.2: Increase transportation options and support shared mobility. Multimodal transportation choices need to be enhanced to offer a variety of travel options in and around the city that are connected to regional transportation systems and destinations. Advocating for and increasing transportation options and shared mobility will create safer, healthier and more convenient movement throughout Sunnyvale.

Play 3.3: Increase zero-emission vehicles. Shifting to electric or alternatively fueled (e.g., hydrogen) vehicles has significant potential to reduce GHG emissions related to transportation. Since SVCE provides 100% carbon-free electricity, promoting a shift to electric vehicles away from fossil fuels would significantly reduce emissions. Other priorities include electrification of public transportation, car sharing, and electric bikes and scooters, and also improving availability of alternative fueling stations (e.g., EV charging facilities, hydrogen fueling stations). Currently (as of October 1, 2018) 2.4% of vehicles registered in Sunnyvale are battery-electric vehicles and 1.3% are plug-in hybrid electric vehicles.³

Strategy 4: Managing Resources Sustainably



Path to 2050

Emissions from waste sent to landfills, transporting water and treating wastewater make up about 7% of total community-wide GHG emissions in Sunnyvale. The City will continue to find alternative methods to divert 90% of its waste away from landfills by 2030, in alignment with the Zero Waste Strategic Plan.

Although emissions from solid waste make up a small portion of Sunnyvale's GHG footprint, the conventional methodology only accounts for emissions released from organic material decomposing in landfills. Substantially more emissions are generated during the production and shipping of goods (furniture, food, cars, etc.) that are eventually used in Sunnyvale. Therefore, emissions associated with goods purchased and food consumed, called embedded emissions, are often dramatically underestimated. As a result, conserving these valuable resources still remains a top priority for the City. Additionally, finding innovative ways to decrease the embedded emissions in food that Sunnyvale residents consume and to capture carbon in our trees and soil can help make our community more sustainable.

Plays for the Win

Play 4.1: Achieve Zero Waste goals for solid waste.

Diverting waste away from landfills, either to recycling, energy recovery or composting facilities, is critical for the City to realize its Zero Waste goals as outlined in its Zero Waste Strategic Plan. This can be accomplished by waste prevention – consuming and throwing away less – and being smarter about the items that must be thrown away. Expanding Sunnyvale's food scraps collection program (FoodCycle) will help to increase the amount of organic material diverted away from the landfill.

However, state laws and policies limit access to diversion technologies so that 75% diversion is the current limit. Increasing diversion to 90% will require changes at the state level to allow use of technologies that recover energy from unrecyclable resident waste, primarily plastic and paper.

	Targets
Play 4.1: Achieve Zero Waste goals for solid waste	2030: Reduce landfilled garbage to 1 lb per person per day
	2050: Reduce landfilled garbage to 1 lb per person per day
Play 4.2: Ensure resilience of water supply	Targets will be determined as per state requirement
Play 4.3: Enhance natural carbon sequestration capacity	Supports broader net carbon reductions
Play 4.4: Promote sustainable food choices	Supports broader emissions reduction

Play 4.2: Ensure resilience of water supply. As the region faces water supply challenges driven by recurring droughts and population growth, it will be critical to find ways to reduce the amount of water consumed and increase the sustainability of water supplies. Water conservation and water reuse, in the form of recycled and purified water, will help Sunnyvale reduce the stress placed on Northern California's water resources.

Play 4.3: Enhance natural carbon sequestration capacity. The natural environment, including plants and soil, have an immense capacity to store carbon dioxide that would otherwise be released into the atmosphere. Through implementation of the City's Urban Forest Management Plan⁴ and Green Stormwater Infrastructure Plan, Sunnyvale can continue to capture carbon by expanding its urban tree canopy and designing landscape features to address stormwater pollution and flood risk.

Play 4.4: Promote sustainable food choices. The process of raising livestock, particularly methane emissions from cattle, are a major source of GHG emissions. Reducing consumption of carbon-intensive foods, such as meat or dairy, is a way for community members to directly lower their personal carbon footprints. Additionally, encouraging the production of food in local gardens can help reduce the emissions associated with transporting foods over long distances.

Strategy 5: Empowering Our Community



Path to 2050

Addressing climate change requires action by all members of our community. The City of Sunnyvale recognizes its role in supporting and empowering individuals throughout Sunnyvale to realize a common vision of achieving our 80x50 target. Together with the diverse sectors of our community, the City will continue to build inclusive and innovative solutions to one of the most difficult challenges of our time.

Through the Playbook planning process, we sourced bold, breakthrough and practical ideas that would pave the way toward more engaged climate action across the community. The engagement process featured a large community workshop, where more than 160 people came together with enthusiastic contributions for the Playbook, and an online portal to collect ideas and encourage stakeholder feedback to hone the ideas. These ideas form the basis of this Playbook (see *Appendix A: Ideas Roster*) and we will continue to draw upon them in the years to come.

The Sunnyvale community has shown a strong commitment to climate action, and much remains to be done to accomplish our 80x50 end game. More ongoing marketing, outreach and behavior change campaigns will be necessary to inspire an 80x50 lifestyle, leverage the benefits of new technologies and empower the people that want to help. Our Plays in this area are focused on sharing necessary information, resources and tools to enable residents and businesses to take continued climate action and build our community. These Plays support other Plays within the Playbook.

Plays for the Win

Play 5.1: Enhance community awareness and engagement. The City is committed to collaborating with the community for immediate and effective climate action through outreach and engagement programs. The City will provide tools, education, and resources (e.g., programs) to enable residents, businesses, corporations, and other stakeholders to work towards mitigating emissions across the Strategies in this Playbook.

Targets	
Play 5.1: Enhance community awareness and engagement	Supports all Plays
Play 5.2: Track and share data and tools	Supports all Plays

Play 5.2: Track and share data and tools. The City will develop regular and effective data collection and communication tools to report progress on climate action. We will continue to partner with innovators in the community to maintain and enhance information and tools to keep our community informed.

Strategy 6: Adapting to a Changing Climate



Path to 2050

Adaptation strategies enable local communities to limit damage and improve recovery from the effects of climate change. This is often referred to as “community resiliency.” In our area, anticipated effects from climate change include rising sea levels, more extreme rain events, and more extreme heat events. Other effects may not occur locally but still affect our community, such as increased susceptibility to drought and increased occurrence and severity of wildfires.

Unlike Strategies 1 through 5 of the Playbook, adaptation strategies do not typically reduce greenhouse gas emissions. Rather, they are an essential complement to emissions reductions to provide a holistic response to climate change.

Adapting to a changing climate may be done effectively by:

- Reducing our exposure to climate stressors, such as sea-level rise, through effective management and improved infrastructure;
- Reducing sensitivity, or the reaction to climate stressors, which is greatest in sensitive populations, including minority or low-income groups, seniors, and children. This can be managed through improved local services to such populations; and
- Enhancing adaptive capacity or resilience, through better emergency preparedness, stronger social systems, and effective communication tools.

The City recognizes that adaptation requires a regional approach to ensure that proactive actions are implemented efficiently and do not have adverse impacts in other communities. For instance, sea-level rise may be addressed through a levee system in one city, which could have the unintended effect of diverting water to a neighboring, lower lying city. We need extensive collaboration and partnerships with neighboring cities, counties, regional agencies, corporations and businesses, and community groups to design, promote, and implement effective strategies that can benefit the Bay Area as a whole.

Play 6.1: Assess climate vulnerabilities for Sunnyvale

Play 6.2: Protect shoreline area from sea level rise and coastal flooding

Play 6.3: Strengthen community resiliency

Plays for the Win

Play 6.1: Assess climate vulnerabilities for Sunnyvale. The first step in addressing climate impacts is to assess our community’s vulnerability to climate change. The City will continue to work with partners to develop tools and resources that enable a better understanding of the vulnerability of our social, environmental, economic, and physical resources to varied climate stressors.

Play 6.2: Protect shoreline area from sea level rise and coastal flooding. The City will continue to plan for and protect the shoreline area under its control against sea-level rise, working with Valley Water (formerly Santa Clara Valley Water District) and other regional partners to do so. Sunnyvale will explore the possible use of traditional levees as well as natural mitigation efforts to protect both its coastal infrastructure, including the City’s Water Pollution Control Plant and closed landfill, as well as the natural and built land area along the Bay.

Play 6.3: Strengthen community resiliency. City departments will continue to collaborate with local volunteer and community groups to develop stronger social support systems to improve communication during emergencies and peer-to-peer education of preparedness and response. Pre-emptive rather than reactive strategies are needed to minimize exposure and improve resilience, particularly among the most vulnerable populations in Sunnyvale.



Photo credit: Alfred Leung

Game Plan 2022: Our Next Moves

Game Plan 2022: Our Next Moves

Focusing Our Efforts

Strategies and Plays are critical to guiding Sunnyvale towards our 80x50 end game. But what actions do we need to take today to ensure success tomorrow?

This chapter identifies “Next Moves,” which are specific, tactical actions to execute in the next three years to ensure the right incentives, technologies and infrastructure are in place to set us up for success in the long-term. Each Move corresponds to a specific Play and Strategy.

The Moves in Game Plan 2022 are not intended to achieve the 2030 targets, but rather to help catapult action and progress towards those targets. The Moves will be updated in alignment with department work plans every five years thereafter, to ensure that climate action priorities are consistently and continually woven throughout City operations.

Moves consist of one or more of the following types of actions:

- Researching the viability of new ideas;
- Implementing and expanding existing plans or programs; and
- Building partnerships with external entities to achieve common goals.

A detailed description of the Next Moves in Game Plan 2022 are provided in the pages that follow. A summary view of the Next Moves is provided on page 34.



Determining Carbon Savings Potential

The Next Moves were prioritized from our list of community ideas (see *Appendix A: Ideas Roster*) based on carbon savings potential and co-benefits to the community. Implementation will be led by specific City departments, in collaboration with other City departments or appropriate external partners.

Each Next Move includes an assessment of its carbon savings potential, which is determined by the following two principles:

- **Maximum Carbon Savings Potential.** Each Next Move is evaluated by its maximum potential impact to reduce carbon emissions, regardless of specific levels of implementation in the current 3-year planning horizon. This approach is used to ensure that the implementation can be measured relative to the target for the associated Play. Therefore, the carbon reduction potential for Moves related to initial feasibility studies or planning activities is assessed assuming implementation of the activity.

For example, for *Move 3.I: Develop a Community Electric Vehicle Readiness and Infrastructure Plan*, the carbon savings potential assumes implementation of a plan resulting in an electric vehicle adoption rate consistent with the measurable target associated with the Play (i.e., 20% of all vehicles are zero-emission by 2030). In the current 3-year time frame, the City will work with SVCE to develop the Plan itself for implementation in future years.

- **City-scale Carbon Savings Impact.** Each Next Move is assessed by its potential to reduce emissions at the local-scale. Such emissions are accounted for within the City's GHG inventory, in accordance with community-wide GHG inventory protocol boundaries. These emissions are currently tracked and will continue to be tracked on a regular cycle to assess CAP implementation progress and ensure Sunnyvale is on track to 80x50. Lifecycle- or consumption-based emissions are not accounted for.

For example, for *Move 4.G: Promote consumer awareness of low carbon foods*, the carbon savings potential is low because emissions reductions from its implementation occur upstream and are not included in the City's GHG inventory. Only a consumption-based inventory, which evaluates the upstream impacts of all goods and services consumed by a community, would reflect the true carbon savings potential of such a move.

The carbon savings potential for the Next Moves is qualitatively described as follows:



Minimal potential

Uncertain impact. Move is primarily informational or educational (e.g., to develop support for other moves).



Some potential

Move affects a small subset of GHG emissions within a sector (e.g., municipal operations).



Significant potential

Move affects a large portion of GHG emissions within a sector (e.g., incentives, programs and services).



Maximum potential

Move affects GHG emissions in an entire sector (e.g., all buildings, VMTs, etc.).

Co-benefits

Each Move also provides co-benefits as follows:



Local Environmental Quality

Move improves air quality, water quality, and/or open space amenities.



Health & Livability

Move improves physical, mental and emotional health or wellbeing and quality of life for residents, employees, and visitors.



Community Savings

Move provides long-term savings for residents, businesses, or the City.



Partnerships

Move entails assistance from and coordination with partner organizations or agencies, such as SVCE and Valley Water.

City Departments

CDD	Community Development Department
DPW	Department of Public Works
ESD	Environmental Services Department
DPS	Department of Public Safety
FIN	Finance Department
OCM	Office of City Manager

Game Plan 2022 At-a-Glance



Strategy 1: Promoting Clean Electricity

- 1.A Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing clean power and decarbonization programs.
- 1.B Collaborate with SVCE to target direct access customers to shift to 100% clean electricity.
- 1.C Research a mandatory solar roof ordinance for new commercial developments.
- 1.D Collaborate with SVCE to evaluate opportunities for energy storage to maximize utilization of local solar supply and to enhance resiliency.



Strategy 2: Decarbonizing Buildings

- 2.A Research energy disclosure and energy benchmarking requirements for commercial and multi-family residential buildings to encourage property owners and managers to invest in energy efficiency upgrades and building information systems.
- 2.B Advocate to regional providers of energy efficiency programs (such as Bay Area Regional Energy Network or BayREN, Silicon Valley Energy Watch or SVEW) that their offerings are more aggressively promoted to Sunnyvale residents and businesses.
- 2.C Develop a program to accelerate the adoption of heat pump water heaters and space heaters.
- 2.D Electrify municipal buildings upon rebuild or significant remodel, including the Civic Center.
- 2.E Evaluate code and permitting processes to streamline building electrification.
- 2.F Investigate the potential for implementing a differential Utility Use Tax that is at least revenue neutral, such that local taxes on electricity are lower than on natural gas, to incentivize electrification.
- 2.G Continue to incentivize energy efficient and high performance buildings through the Green Building Program updates.



Strategy 3: Decarbonizing Transportation & Sustainable Land Use

- 3.A Plan for additional housing, with the goal of diverse housing, to reduce long-distance commutes.
- 3.B Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.
- 3.C Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.
- 3.D Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors.
- 3.E Update and implement the Integrated Bicycle, Pedestrian and Safe Routes to School Plan to achieve a connected, safe and active network.
- 3.F Pilot and evaluate shared bicycle and scooter programs.
- 3.G Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.
- 3.H Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate.
- 3.I Monitor autonomous vehicle testing and deployment to inform proactive policy.
- 3.J Develop a Community Electric Vehicle Readiness and Infrastructure Plan.
- 3.K Promote and seek incentives for community adoption of electric vehicles.
- 3.L Electrify Municipal Fleet as vehicles are replaced and continue to seek incentives for electric vehicles and charging infrastructure.

Game Plan 2022 At-a-Glance



Strategy 4: Managing Resources Sustainably

- 4.A Implement and expand food scraps diversion programs to include additional businesses and multi-family residences.
- 4.B Consider solid waste collection and processing improvements to increase waste diversion away from landfills as a part of service provider and facility transition planning.
- 4.C Implement campaign for waste prevention.
- 4.D Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with new statewide requirements.
- 4.E Partner with Valley Water to evaluate opportunities to expand water reuse.
- 4.F Implement the City's Urban Forest Management Plan and continue to protect and expand tree canopy.
- 4.G Implement the City's Green Stormwater Infrastructure Plan.
- 4.H Promote consumer awareness of sustainable food choices.
- 4.I Work with large businesses to identify best practices for implementing local food gardens.



Strategy 5: Empowering Our Community

- 5.A Pilot a targeted grassroots community engagement strategy (e.g., Cool Blocks Program) to create stronger connections between neighbors to advance climate action and emergency preparedness.
- 5.B Evaluate opportunities for the City to provide online resources and tools for community and small business climate action (e.g., resource center for retrofit electrification, online tool or app to track individual carbon emissions).
- 5.C Create a stronger social media and web presence for Sunnyvale climate action.
- 5.D Implement the Sustainability Speaker Series.
- 5.E Pilot and evaluate a program for youth engagement on climate, building on current engagement with school classrooms and green teams.
- 5.F Build relationships with largest employers to collaborate on climate action, such as: (a) engaging employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects.
- 5.G Implement improvements for climate action data performance tracking and reporting progress to the public (e.g., community dashboard).
- 5.H Publish annual greenhouse gas (GHG) inventory.



Strategy 6: Adapting to a Changing Climate

- 6.A Review and summarize assessment products developed by the County's Silicon Valley 2.0 project and by the State.
- 6.B Participate in regional forums on climate vulnerabilities.
- 6.C Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.
- 6.D Identify shoreline protection solutions as part of Moffett Park Specific Plan update.
- 6.E Updating existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.
- 6.F Develop a community resiliency plan.

Next Moves for Strategy 1: Promoting Clean Electricity



The City's Next Moves will focus on promoting programs to increase the adoption rate of 100% carbon-free and renewable electricity. In the Game Plan 2022, this Strategy will focus on collaboration with SVCE on expanding participation, continuing the shift towards 100% renewable electricity, and launching programs that support Sunnyvale's customers in decarbonizing their homes and businesses. Further, we will also work with our larger local companies to develop encourage commitments that direct access procurements focus on carbon free electricity.

Finally, as electric loads increase due to the electrification of transportation and buildings, the City will support distributed energy resources, such as rooftop solar (PV) combined with energy storage. Integrating electrified aspects of buildings, such as electric vehicle chargers, heat pump technologies, and PV will provide opportunities for faster, easier, and more cost-effective conversion away from fossil fuels. A cleaner, smarter electric grid will therefore enable implementation of Strategies 2 and 3, and will more rapidly catalyze movement towards our 80x50 end game.

Strategy 1: Promoting Clean Electricity



Play 1.1: Promote 100% Clean Electricity

Move 1.A: Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing clean power and decarbonization programs. With the launch of SVCE, Sunnyvale residents and businesses have access to clean electricity, sourced primarily from renewable sources. Further, as a part of its mission, SVCE is committed to supporting further actions and investments in its member communities to further reduce carbon emissions, particularly from energy use in buildings and from fuel consumption in vehicles. As a part of its adoption of a Decarbonization Strategy and Programs Roadmap⁵ (December 2018), SVCE has pledged nearly \$6.02 million to offering customer programs to promote decarbonization and energy efficiency improvements to the 13 cities in its service territory. As the municipality with the largest SVCE customer base, the City of Sunnyvale will advocate for programs that incentivize high-impact behaviors (such as installing electric heat pump water heaters) and are responsive to the needs of Sunnyvale residents and businesses.

Move 1.B: Collaborate with SVCE to target direct access customers to shift to 100% clean electricity. While most Sunnyvale residents and businesses have traditionally purchased electricity from an investor-owned utility, some large businesses have contracts to purchase electricity directly from Electric Service Providers. This allows these large businesses, that typically have high energy needs, to purchase electricity at lower prices. While some of these large companies have expressed a strong commitment to ensure significant portions of their electricity is generated from renewable sources, others purchase electricity generated from conventional sources, like coal, which generates GHG emissions. The City has limited opportunities to identify and encourage these companies, called “Direct Access” (DA) customers, to switch to cleaner sources of electricity.

With nearly 97% of residential customers opting in to clean electricity provided by Silicon Valley Clean Energy (SVCE), the electricity sourced to DA customers is now the largest source of electricity-related GHG emissions. With its status as Sunnyvale’s clean electricity provider, SVCE and City staff can encourage DA customers to switch to SVCE’s 100-percent carbon-free offering, or even opt up to 100-percent renewable electricity, which would substantially lower GHG emissions from electricity use in Sunnyvale.

Play 1.2: Increase Local Solar Photovoltaics

Move 1.C: Research a mandatory solar roof ordinance for new commercial developments. A local ordinance requiring solar installations on new commercial buildings leverages and complements the anticipated 2019 California Building Standards Code requirement of mandatory solar installations for all new residential buildings starting in 2020. Local solar installations would also help to comply with the anticipated requirement for all new non-residential buildings to be Zero Net Energy (ZNE) by 2030. By evaluating the feasibility of a local ordinance, the implementation rate of localized solar may be accelerated on all building types.

Play 1.3: Increase Distributed Electricity Storage

Move 1.D: Collaborate with SVCE to evaluate opportunities for energy storage to maximize utilization of local solar supply and to enhance resiliency. Energy storage plays a growing role in ensuring a resilient power grid, especially as dependence on renewable energy increases. Community-scale energy storage could maximize utilization of local solar supply, smooth out electricity supply and demand discrepancies and provide other benefits.

















Strategy 1: Promoting Clean Electricity



Play 1.1: Promote 100% clean electricity

TARGET:









- 2030: 100% participation in clean electricity
- 2050: 100% participation in clean electricity

Next Moves		Lead	Impacts	FY20	FY21	FY22
1.A	Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing clean power and decarbonization programs.	ESD	       	•	•	•
1.B	Collaborate with SVCE to target direct access customers to shift to 100% clean electricity.	ESD	       	•	•	

Play 1.2: Increase local solar photovoltaics

TARGET:









- 2030: 3% of load from local solar
- 2050: 5% of load from local solar

Next Moves		Lead	Impacts	FY20	FY21	FY22
1.C	Research a mandatory solar roof ordinance for new commercial developments.	CDD	       	•		

Play 1.3: Increase distributed electricity storage.

TARGET:

- 2030: 1% of electricity demand stored in batteries locally
- 2050: 5% of electricity demand stored in batteries locally

Next Moves		Lead	Impacts	FY20	FY21	FY22
1.D	Collaborate with SVCE to evaluate opportunities for energy storage and to maximize utilization of local solar supply and to enhance resiliency.	ESD	       	•	•	•



GHG Avoided



Local Environmental Quality



Health & Livability



Community Savings



Partnerships

Next Moves for Strategy 2: Decarbonizing Buildings



Buildings are long lasting infrastructure, and development occurring in Sunnyvale today will likely still be in use in 2050. As the City anticipates most of its land area will be developed by 2035, infrastructure put in place today will be critical in addressing both our 2030 and 2050 targets.

As such, the City's Next Moves focus on both new construction and existing buildings with programs and policies designed for the future climate and energy realities. This includes increasing building efficiency for extreme temperatures and scaling up adoption of technologies in buildings powered by clean electricity.

The City will focus on moves that emphasize and enhance energy conservation, establish policies or programs to support electrification, and facilitate adoption of new building decarbonization technologies for the largest uses, such as electric heat pumps for water and space heating.

Sunnyvale will continue to enhance and update its award-winning Green Building Program, using incentives and codes to achieve greater gains in efficiency and better building performance.

Strategy 2: Decarbonizing Buildings



Play 2.1: Reduce energy consumption in existing buildings

Move 2.A: Research energy disclosure and energy benchmarking requirements for commercial and multi-family residential buildings to encourage property owners and managers to invest in energy efficiency upgrades and building information systems. Energy benchmarking collects data about a building's energy usage during a specific time period. With AB 802 (2015)⁶, energy benchmarking is already required for large commercial and residential buildings above a certain square footage, but a local ordinance (e.g., City of San Jose's Energy and Water Building Performance Ordinance⁷; City of Berkeley's Building Energy Saving Ordinance⁸) would extend the requirement to smaller buildings. Energy benchmarking empowers commercial and multi-family residential building managers and property owners with meaningful data depicting energy consumption, allows comparison of energy usage among similar buildings, and helps the City potentially incentivize energy conservation by customizing programs that target areas of greatest need. Energy benchmarking also informs and motivates consumer demand for efficient buildings.

Move 2.B: Advocate to regional providers of energy efficiency programs (such as Bay Area Regional Energy Network or BayREN, Silicon Valley Energy Watch or SVEW) that their offerings are more aggressively promoted to Sunnyvale residents and businesses. Many existing regional energy efficiency programs are available to Sunnyvale residents and businesses through entities such as Bay Area Regional Energy Network (BayREN) and Silicon Valley Energy Watch (SVEW). Greater promotion of existing programs ensures that Sunnyvale residents and businesses are aware of and encouraged to take advantage of these opportunities for assistance to further decarbonize their buildings.

Play 2.2: Support electrification of existing buildings

Move 2.C: Develop a program to accelerate the adoption of heat pump water heaters and space heaters. Heating space and water in buildings is the single largest use of natural gas. Installing electric heat pump water heaters and space heaters is one of the most effective ways to transition away from natural gas towards clean electricity, as provided by SVCE. The technology has progressed for electric equivalents to be as economically competitive and capable of maintaining the same level of comfort as their conventional natural gas counterparts. Partnering with SVCE to teach the public about the benefits of heat pump water heaters and space heaters, while simultaneously offering incentives to conduct these upgrades, will accelerate adoption of heat pump technology.

Move 2.D: Electrify municipal buildings upon rebuild or significant remodel, including the Civic Center. Natural gas use is the largest source of GHG emissions in the building sector, now that SVCE provides clean electricity. Transitioning towards all-electric buildings far outweighs GHG reductions achieved through simply improving building efficiency. Thus, when feasible, existing buildings must transition to all-electric while simultaneously ensuring that newly-constructed buildings are all-electric to begin with. The City of Sunnyvale has an opportunity to lead the local all-electric movement when updating municipal buildings and facilities.

Play 2.3: Achieve all-electric new construction

Move 2.E: Evaluate code and permitting processes to streamline building electrification. All-electric building is increasing in popularity and feasibility and innovative building codes are important to facilitate this transition in building design. Sunnyvale will explore opportunities to accelerate and specifically incentivize all-electric new construction. The City will investigate the possibility of a reach code to encourage all-electric new construction in collaboration with SVCE and its other member agencies. Such collaboration can amplify the impact and simplify

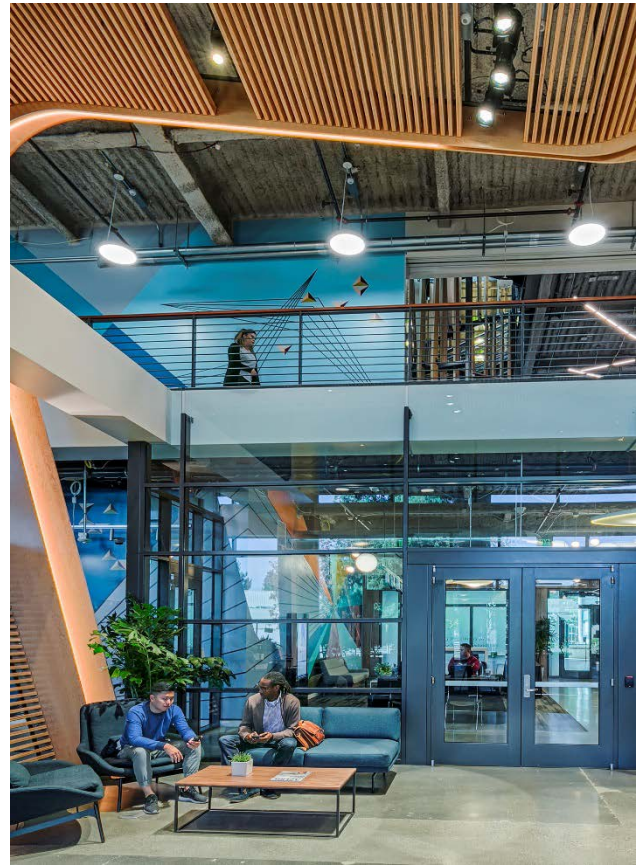
Strategy 2: Decarbonizing Buildings



implementation for project applicants with similar programs across jurisdictions.

Move 2.F: Investigate the potential for implementing a differential Utility Use Tax that is at least revenue neutral, such that local taxes on electricity are lower than on natural gas, to incentivize electrification. Utility User Taxes (UUTs) are fees leveraged by local jurisdictions to consumers of certain utility services. In Sunnyvale, the existing UUT charges a 2% rate on telephone, electricity, and natural gas use. A differential Utility User Tax where the rates on electricity are lower than on natural gas is a possible approach to incentivize all-electric buildings.

Move 2.G: Continue to incentivize energy efficient and high performance buildings through the Green Building Program updates. Sunnyvale's award-winning Green Building Program has successfully facilitated sustainable building design by offering compelling voluntary incentives for developers, allowing more units or increased square footage if the building sufficiently exceeds the California Building Code's minimum environmental requirements. Continuing to update the Green Building Program with more rigorous pathways to qualify for incentives will drive building developers to even further decarbonize to all-electric designs. This will increase the number of new buildings in Sunnyvale that eliminate GHG emissions, particularly since the buildings built today will continue to be in operation well beyond 2030.













Strategy 2: Decarbonizing Buildings



Play 2.1: Reduce energy consumption in existing buildings

TARGET:











- 2030: 5% of existing homes and businesses receive deep energy retrofit
- 2050: 30% of existing homes and businesses receive deep energy retrofit

Next Moves		Lead	Impacts	FY20	FY21	FY22
2.A	Research energy disclosure and energy benchmarking requirements for commercial and multi-family residential buildings to encourage property owners and managers to invest in energy efficiency upgrades and building information systems.	CDD	    			•
2.B	Advocate to regional providers of energy efficiency programs (such as Bay Area Regional Energy Network or BayREN, Silicon Valley Energy Watch or SVEW) that their offerings are more aggressively promoted to Sunnyvale residents and businesses.	ESD	    	•	•	•

Play 2.2: Support electrification of existing buildings

TARGET:

- 2030: 20% of homes and businesses completely electrified
- 2050: 50% of homes and businesses completely electrified

Next Moves		Lead	Impacts	FY20	FY21	FY22
2.C	Develop a program to accelerate the adoption of heat pump water heaters and space heaters.	ESD	    	•	•	•
2.D	Electrify municipal buildings upon rebuild or significant remodel, including the Civic Center.	DPW	    	•	•	•



GHG Avoided



Local Environmental Quality



Health & Livability



Community Savings



Partnerships

























Strategy 2: Decarbonizing Buildings



Play 2.3: Achieve all-electric new construction

TARGET:

- 2030: 100% all-electric new buildings
- 2050: 100% all-electric new buildings

Next Moves		Lead	Impacts	FY20	FY21	FY22
2.E	Evaluate code and permitting processes to streamline building electrification.	CDD	       			•
2.F	Investigate the potential for implementing a differential Utility Use Tax that is at least revenue neutral, such that local taxes on electricity are lower than on natural gas, to incentivize electrification.	FIN	       		•	
2.G	Continue to incentivize energy efficient and high performance buildings through the Green Building Program updates.	CDD	       			•



GHG Avoided



Local Environmental Quality



Health & Livability



Community Savings



Partnerships

Next Moves for Strategy 3: Decarbonizing Transportation & Sustainable Land Use



Our Next Moves are focused on setting Sunnyvale on the path to becoming a community that is less dependent on vehicles. This includes encouraging new development, including housing, in areas near transit and managing parking supply to support multi-modal transportation options that connect to regional systems and destinations.

To achieve a meaningful shift away from single-occupancy fossil-fueled vehicles, we need stronger partnerships with regional agencies and must continue to support increased funding for regional transit service providers to expand mobility options. Action in these areas can help simultaneously plan for transit-oriented land use while reducing vehicle miles traveled, and can thereby reduce carbon emissions. Locally, more first- and last-mile options (like bikeshare programs) are needed to encourage transit ridership. Additionally, the City will continue to improve and expand access to live and work spaces, retail, and services by focusing on balanced mixed uses in new or redevelopment areas.

Sunnyvale's current development, while serviced by existing public transit, still largely reflects a car-dependent lifestyle. Dramatic changes to driving habits and accelerated adoption of alternative fuel vehicles will need to work in tandem to achieve steep reductions in transportation emissions.

Strategy 3:

Decarbonizing Transportation & Sustainable Land Use



Play 3.1: Balance Land Use Supply and Enhance Urban Form

Move 3.A: Plan for additional housing, with the goal of diverse housing, to reduce long-distance commutes.

The high cost and shortage of housing across the Bay Area has led a rising number of commuters to live in more affordable areas in distant suburbs. The resulting hefty car commute to Silicon Valley employment centers contributes to worsening congestion. By increasing the availability of affordable housing in Sunnyvale, more workers may be able to live closer to their jobs, commute shorter distances or via alternative modes, and thereby lower GHG emissions.

Move 3.B: Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions. (E.g., goBerkeley⁹, Downtown Redwood City¹⁰) In a car-dependent community, it is critical to promote alternative transportation while simultaneously disincentivizing single occupant car trips. Limiting parking is a common disincentive to decrease car trips and increase alternative trips, thereby lowering GHG emissions. This Move will inform appropriate types and locations of parking options to limit and optimize parking opportunities while ensuring that, when implemented, they do not create unintended disruptions.

Play 3.2: Increase Transportation Options and Support Shared Mobility

Move 3.C: Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide. A significant part of Sunnyvale traffic comes from long-distance commuters. Transportation Demand Management (TDM) describes the holistic approach by which workplaces encourage their employees to commute via alternative means, counterbalancing the default inclination to drive. Existing TDM programs in Sunnyvale have mixed results. Better monitoring is needed to understand the effectiveness of current TDM programs, to monitor compliance and enforce TDM requirements, to implement regular data collection procedures, and to

use data in developing new TDM programs for residential and business developments.

Move 3.D: Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors. Improved frequency, route offerings and quality of local public transportation is expected to increase ridership and reduce the number of cars on the road. Public transit will seem more attractive and viable in conjunction with first- and last-mile options that help residents and employees travel to and from transit stops. Though the City does not directly control public transportation offerings within City limits, the City can advocate to agencies like VTA and Caltrans for improved service. Further, the City can augment alternatives for first- and last-mile mobility.

Move 3.E: Update and implement the Integrated Bicycle, Pedestrian and Safe Routes to School Plan to achieve a connected, safe and active network.

Transitioning away from car dependency requires easy and safe travel via other modes such as walking and biking. Thus, improving the existing bicycle and pedestrian network will make walking and biking to work, school, and other local destinations more palatable and lower VMT and GHG emissions. A complete bicycle and pedestrian network will also assist with first/last mile and TDM efforts.

Move 3.F: Pilot and evaluate shared bicycle and scooter programs. Increased access to bicycles and scooters without having to purchase, maintain or store them may increase the likelihood of residents not using a car for short trips. Bicycle and scooter shares additionally help remedy first- and last-mile challenges. This pilot will inform the feasibility of a bike or scooter share program in select areas of Sunnyvale.

Move 3.G: Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment. Shuttle service in frequently visited and/or major employment areas will supplement and extend the reach of existing public transportation offerings. The shuttle(s) would allow more commuters and travelers to get around Sunnyvale without a car, thereby reducing VMT and GHG emissions.

Strategy 3:

Decarbonizing Transportation & Sustainable Land Use



Move 3.H: Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate. As transportation network companies (TNCs), like Uber and Lyft, continue to become more prevalent, they will continue to impact traffic and safety at pick-up and drop-off points. Accommodating the needs of TNCs in the streetscape will minimize disruptions and increase the ease of using these services. Although increased use of TNCs does not directly lower GHG emissions or vehicle miles traveled (VMT), TNCs may provide services that make car-free or car-light lifestyles more viable. Further, as TNCs electrify their fleets, GHG emissions would continue to decrease.

Move 3.I: Monitor autonomous vehicle testing and deployment to inform proactive policy. When autonomous vehicles enter the mainstream market, they could dramatically alter the existing transportation landscape. Keeping track of new developments and proactively formulating policy will ensure that such a transportation transition will happen smoothly.

Play 3.3: Increase Zero-Emission Vehicles

Move 3.J – Develop a Community Electric Vehicle Readiness and Infrastructure Plan. (E.g., City of Santa Monica’s Electric Vehicle Action Plan, 2017¹¹) As electric vehicles (EVs) make up a greater proportion of cars on Sunnyvale streets, so too will demand rise for charging stations and electricity from the grid. To support the transition to EVs, the City of Sunnyvale must prepare and plan for infrastructure accordingly. Developing this Plan will help define the specific changes that are most needed from an infrastructure readiness and from permitting processes and incentives perspectives. In partnership with SVCE, the City will develop a Plan to accelerate our transition to an EV-ready community.

Move 3.K: Promote and seek incentives for community adoption of electric vehicles. Electric vehicles (EVs) charged at residential, office or public locations in Sunnyvale run on carbon-free electricity, which drastically lowers transportation-related emissions. The City will work with community groups to create an EV awareness and education program, such as Acterra’s proposed “Sunnyvale Goes EV! Program” to accelerate EV adoption. Such a program would include activities such as EV ride-and-drive events and workshops to educate prospective buyers on benefits, convenience, and incentives.

Move 3.L: Electrify Municipal Fleet as vehicles are replaced and continue to seek incentives for electric vehicles and charging infrastructure. The City of Sunnyvale has an opportunity to be a local leader in transportation decarbonization by updating its municipal fleet to electric vehicles (EVs). The City is committed to electrifying its vehicle fleet as old fleet vehicles are phased out, where a suitable EV replacement is available. Based on the current replacement schedule, the target is to add 16 EVs by 2022. The City will partner with SVCE to obtain funding and technical support for enhancing public EV chargers throughout the city. In addition, the City will leverage resources and information from sustainability networks, such as Climate Mayors EV Purchasing Collaborative¹², to continue fleet electrification. The City will also monitor future potential for EVs to replace more specialized fleet vehicles, such as trash trucks or police cars.

Strategy 3: Decarbonizing Transportation & Sustainable Land Use



Play 3.1: Balance land use supply and enhance urban form

TARGET:

- 2030: 13% reduction in vehicle miles per person
- 2050: 25% reduction in vehicle miles per person

Next Moves		Lead	Benefits	FY20	FY21	FY22
3.A	Plan for additional housing, with the goal of diverse housing, to reduce long-distance commutes.	CDD		•	•	•
3.B	Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.	CDD DPW				•

Play 3.2: Increase transportation options and support shared mobility

TARGET:

- 2030: 13% reduction in vehicle miles per person
- 2050: 25% reduction in vehicle miles per person

Next Moves		Lead	Benefits	FY20	FY21	FY22
3.C	Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.	DPW		•	•	•
3.D	Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors.	DPW		•		
3.E	Update and implement the Integrated Bicycle, Pedestrian and Safe Routes to School Plan to achieve a connected, safe and active network.	DPW		•	•	•
3.F	Pilot and evaluate shared bicycle and scooter programs.	DPW		•		
3.G	Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.	CDD		•	•	•
3.H	Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate.	DPW, CDD				•



GHG Avoided



Local Environmental Quality



Health & Livability



Community Savings



Partnerships









Strategy 3: Decarbonizing Transportation & Sustainable Land Use



Play 3.2: Increase transportation options and support shared mobility

TARGET:

























- 2030: 13% reduction in vehicle miles per person
- 2050: 25% reduction in vehicle miles per person

Next Moves		Lead	Benefits	FY20	FY21	FY22
3.I	Monitor autonomous vehicle testing and deployment to inform proactive policy	DPW	       	•		

Play 3.3: Increase zero-emission vehicles

TARGET:

- 2030: 20% of all vehicles on road are zero-emission vehicles
- 2050: 75% of all vehicles on road are zero-emission vehicles

Next Moves		Lead	Benefits	FY20	FY21	FY22
3.J	Develop a Community Electric Vehicle Readiness and Infrastructure Plan.	DPW	       	•	•	
3.K	Promote and seek incentives for community adoption of electric vehicles.	ESD	       	•	•	•
3.L	Electrify Municipal Fleet as vehicles are replaced and continue to seek incentives for electric vehicles and charging infrastructure.	DPW	       	•	•	•



GHG Avoided



Local Environmental Quality



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Next Moves for Strategy 4: Managing Resources Sustainably



Photo credit: Emmanuel Piuze

Reducing landfilled waste, using water efficiently, capturing carbon in the natural environment and lowering the emissions intensity of food consumed are all essential to Sunnyvale becoming a sustainability leader. The City's Next Moves will focus on expanding and improving waste diversion services, adopting water conservation as a way of life, expanding natural landscape areas in the community, and promoting the importance of sustainable food choices.

Implementation of the City's Urban Forest Management Plan will not only help to sequester carbon, but will also result in a more robust urban tree canopy that can alleviate the urban heat island effect.

Strategy 4: Managing Resources Sustainably



Play 4.1: Achieve Zero Waste Goals for Solid Waste

Move 4.A: Implement and expand food scraps diversion programs to include additional businesses and multi-family residences. Currently, food scraps are only collected from single-family residences, schools, and larger businesses in Sunnyvale. With food scraps as the largest component of Sunnyvale garbage, expanding food scraps collection to additional businesses and multi-family residents will further reduce food waste going to the landfill and associated GHG emissions.

Move 4.B: Consider solid waste collection and processing improvements to increase waste diversion away from landfills as a part of service provider and facility transition planning. In addition to Sunnyvale residents and businesses reducing their waste, there may be opportunities to increase waste diversion away from landfills by modifying waste collection and processing practices. Additionally, as processing facilities (e.g., SMaRT Station®) are slated for renovation or replacement, more efficient technology or practices may be employed to improve waste diversion.

Move 4.C: Implement campaigns for waste prevention. Consumer goods require energy to be manufactured, packaged, and transported from where they are produced to where they are consumed. These upstream consumption-based emissions are typically not represented in the standard communitywide GHG inventory. When less waste is generated and sent to the landfill, fewer GHG emissions are released. This campaign to reduce the production of waste may include efforts to encourage the public to reduce waste generation, reuse or upcycle everyday items, spur producer responsibility for less packaging, advocate for legislative and regulatory actions at the local and regional level, and develop incentives and/or disincentives to guide particularly impactful consumer actions.

Play 4.2: Ensure Resilience of Water Supply

Move 4.D: Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with new statewide requirements. Given Sunnyvale's location in a drought-prone area with heavy reliance on drinking water sources outside the City's boundaries, water conservation needs to be a way of life. Reduced water use and wastewater production may reduce GHGs emitted during the extraction, purification, and distribution of water, in addition to ensuring the sustainability of our water supply for the future.

Move 4.E: Partner with Valley Water to evaluate opportunities to expand water reuse. Expanding the existing use of recycled water (e.g., to Apple Campus in Cupertino) and exploring opportunities for indirect and direct potable reuse of treated wastewater at a regional level are critical to long term water sustainability. Water reuse options provide a sustainable supply source and also have a lower carbon footprint than other alternative water supply options like desalination.

Play 4.3: Enhance Natural Carbon Sequestration Capacity

Move 4.F: Implement the City's Urban Forest Management Plan and continue to protect and expand tree canopy. Urban trees sequester carbon, provide shade that can lower heating- and cooling-related energy consumption in buildings, serve as green features that can reduce flooding, and provide an outlet to connect to nature in a city environment. Continuing to protect and expand the tree canopy by implementing the Urban Forest Management Plan³ will improve both environmental quality and quality of life.

Move 4.G: Implement the City's Green Stormwater Infrastructure Plan. Stormwater runoff from an urban area like Sunnyvale contains trash, debris and pollutants that are carried into the Bay. Green infrastructure involves natural and physical treatments, such as permeable pavement, rain gardens and bioswales, that reduce and treat stormwater at its source. The City's Municipal Regional Stormwater Permit requires the City to develop and implement a

Strategy 4: Managing Resources Sustainably



long-term Green Stormwater Infrastructure Plan to reduce watershed pollution. Beyond reducing water pollution and flood risk, many of the vegetative features also increase carbon sequestration, thereby reducing net carbon emissions.

Play 4.4: Promote Sustainable Food Choices

Move 4.H: Promote consumer awareness of low carbon foods. Our food habits have significant GHG emission consequences as food eaten in Sunnyvale may be produced through energy-intensive processing and may travel long distances to reach our tables. Educating the public and the local food industry about the benefits, environmental and otherwise, of eating food that is locally grown, organic and more plant-based may shift our collective food ethic. The City can lead by example by considering the carbon footprint of food served at City-sponsored events.

Move 4.I: Work with large businesses to identify best practices for implementing local food gardens. Large businesses with corporate cafeterias that serve food to thousands of employees everyday have an opportunity to make a big impact in their carbon footprint. The distance traveled by food served in our local communities has associated energy and transportation emissions. By cultivating a portion of the food served locally onsite at large businesses, such businesses can lower their corporate carbon emissions while also inspiring their workforce to consider low carbon foods. Though currently uncommon, a few businesses in Sunnyvale that are committed to innovative environmental stewardship are piloting local food gardens. The City will work with these businesses to identify, hone and share best practices to empower other businesses to follow suit.



























Strategy 4: Managing Resources Sustainably



Play 4.1: Achieve Zero Waste goals for solid waste

TARGET:

















- 2030: Reduce landfilled garbage to 1 lb per person per day
- 2050: Reduce landfilled garbage to 1 lb per person per day

Next Moves		Lead	Impacts	FY20	FY21	FY22
4.A	Implement and expand food scraps diversion programs to include additional businesses and multi-family residences.	ESD	       	●	●	●
4.B	Consider solid waste collection and processing improvements to increase waste diversion away from landfills as a part of service provider and facility transition planning.	ESD	       	●	●	●
4.C	Implement campaigns for waste prevention.	ESD	       	●	●	●

Play 4.2: Ensure resilience of water supply

TARGET:

- Targets will be determined as per state requirement

Next Moves		Lead	Impacts	FY20	FY21	FY22
4.D	Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with new statewide requirements.	ESD	       	●	●	●
4.E	Partner with Valley Water to evaluate opportunities to expand water reuse.	ESD	       	●	●	●



GHG Avoided



Local Environmental Quality



Health & Livability



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Strategy 4: Managing Resources Sustainably



Play 4.3: Enhance natural carbon sequestration capacity

TARGET:

- Supports broader net carbon reductions

Next Moves		Lead	Impacts				FY20	FY21	FY22
4.F	Implement the City's Urban Forest Management Plan and continue to protect and expand tree canopy.	DPW					•	•	•
4.G	Implement the City's Green Stormwater Infrastructure Plan.	ESD					•	•	•

Play 4.4: Promote sustainable food choices

TARGET:

- Supports broader emissions reductions

Next Moves		Lead	Impacts				FY20	FY21	FY22
4.H	Promote consumer awareness of low carbon foods.	ESD							•
4.I	Work with large businesses to identify best practices for implementing local food gardens.	ESD OCM						•	•



GHG Avoided



Local Environmental Quality



Health & Livability



Community Savings



Partnerships

Next Moves for Strategy 5: Empowering Our Community



Achieving Sunnyvale's climate objectives will require active participation from the whole community including businesses, residents, community-based organizations and all city departments. The City will continue to empower the community with the necessary information, incentives and tools to advance climate action. Through partnership with our community organizations and diverse leaders, we can transform the buildings we live and work in, the way we get around and the way we consume goods and services. Effective engagement and outreach go hand-in-hand with progressive policies and programs that facilitate the decarbonization of our City. Our Next Moves focus on working with neighborhoods, home owners, corporations and their employees. The City will also harness the aspirational power of our youth to expand awareness to our next generation.

Strategy 5: Empowering Our Community



Play 5.1: Enhance Community Awareness and Engagement

Move 5.A: Pilot a targeted grassroots community engagement strategy (e.g., Cool Blocks Program¹³) to create stronger connections between neighbors to advance climate action and emergency preparedness. This initiative aims to bring neighbors together at a very localized level to strengthen community, advance climate action and prepare for natural disasters. Participants in other Bay Area communities with this type of program cut their household carbon emissions by 30% on average. Neighbors learn about climate action behaviors together and collectively shape a local ethic of environmental conscientiousness and preparedness.

Move 5.B: Evaluate opportunities for the City to provide online resources and tools for community and small business climate action (e.g., resource center for retrofit electrification, online tool or app to track individual carbon emissions). There are online resources available to help residents and businesses reduce their carbon footprints, but finding the right information can be overwhelming. Curating an online resource center, tool, or app with user-friendly climate action resources will make it easier for community members to access and understand their carbon impact and to take actions to reduce it.

Move 5.C: Create a stronger social media and web presence for Sunnyvale climate action. Sunnyvale's website and social media channels are effective avenues to reach and communicate with many Sunnyvale residents. Discussing climate action on social media can educate and frequently remind followers in an approachable way about pro-environmental behavior. By expanding existing efforts, Sunnyvale's social media audience will grow, information will be updated more often and posts can be better catered to our audience with more interactive media like videos, polls and livestreams.

Move 5.D: Implement the Sustainability Speaker Series¹⁴. This event series brings renowned experts in sustainability research and policy development to share their ideas and innovations with our community. Implemented in partnership with the Sustainability Commission, each event fosters discussion, brings the community together and inspires individuals to take

climate action into their own hands.

Move 5.E: Pilot and evaluate a program for youth engagement on climate, building on current engagement with school classrooms and green teams. Youth are among the most receptive populations to respond positively to calls for climate action and influence their households' environmental behaviors. Educating the next generation of our community to be sustainability advocates is important to continue climate action going forward. To build on current engagement with school classroom and green teams on environmental topics, this program will expand the conversation to climate action.

Move 5.F: Build relationships with largest employers to collaborate on climate action, such as: (a) engaging employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects. Carbon emissions in the business sector can be reduced by changing employee behaviors, from turning off lights and computers at night to commuting to work via alternative modes. The City of Sunnyvale will partner with large employers to encourage employee participation in sustainability initiatives and to seek investment in climate action programs or projects with local benefits.

Play 5.2: Track and Share Data and Tools

Move 5.G: Implement improvements for climate action data performance tracking and reporting progress to the public (e.g., community dashboard). It is important to identify and share our climate action victories and accomplishments with the community. The City will develop a resource such as a community dashboard (e.g., City of Encinitas Climate Action Dashboard¹⁵, City of Richmond Climate Action Open Data¹⁶) to track project progress, improve transparency, and make climate data available and digestible to the public. A list of metrics that will be tracked to monitor Playbook progress is available on page 102 of the Technical Appendix.

Move 5.H: Publish annual greenhouse gas (GHG) inventory. Updating our community about our local GHG emissions on an annual basis keeps the public informed, builds motivation to expand on current progress and conveys the City's commitment to climate action. Regular updates that parse out the GHG emissions associated with each sector also helps inform policy and programming decisions.























Strategy 5: Empowering Our Community



Play 5.1: Enhance community awareness and engagement

TARGET:








- Supports all other Plays

Next Moves		Lead	Impacts	FY20	FY21	FY22
5.A	Pilot a targeted grassroots community engagement strategy (e.g., Cool Blocks Program) to create stronger connections between neighbors to advance climate action and emergency preparedness.	ESD	   	•	•	•
5.B	Evaluate opportunities for the City to provide online resources and tools for community and small business climate action (e.g., resource center for retrofit electrification, online tool or app to track individual carbon emissions).	ESD	   	•	•	
5.C	Create a stronger social media and web presence for Sunnyvale climate action.	ESD OCM	   	•	•	•
5.D	Implement the Sustainability Speaker Series.	ESD	   	•	•	•
5.E	Pilot and evaluate a program for youth engagement on climate, building on current engagement with school classrooms and green teams.	ESD	   		•	
5.F	Build relationships with largest employers to collaborate on climate action, such as: (a) engaging employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects.	ESD OCM	   	•	•	•

Play 5.2: Track and share data and tools

TARGET:

- Supports all other Plays

Next Moves		Lead	Impacts	FY20	FY21	FY22
5.G	Implement improvements for climate action data performance tracking and reporting progress to the public (e.g., community dashboard).	ESD	   	•	•	•
5.H	Publish annual greenhouse gas (GHG) inventory.	ESD	   	•	•	•



GHG Avoided



Local Environmental Quality



Health & Livability



Community Savings



Partnerships

Next Moves for Strategy 6: Adapting to a Changing Climate



Photo credit: Ryan Ferrin

As we continue to experience climate change impacts in the Bay Area and worldwide, Sunnyvale will take steps to better ensure our local community is both prepared for climate disasters and, more importantly, resilient to them.

Recognizing that climate adaptation cannot be addressed single-handedly by one local government, the City will focus on cultivating partnerships with regional entities that are addressing adaptation and on enhancing its participation in regional actions.

In addition, the City will focus on short-term preparedness measures our community can take to resist climate impacts, while simultaneously identifying key future vulnerabilities and strategies to address them in the coming years.

Strategy 6: Adapting to a Changing Climate



Play 6.1: Assess Climate Vulnerabilities for Sunnyvale

Move 6.A: Review and summarize assessment products developed by the County's Silicon Valley 2.0 project and by the State. In 2015, Santa Clara County brought Sunnyvale and other cities together to develop a Countywide vulnerability assessment tool to assess the potential impact of sea level rise on infrastructure and assets in the County, known as Silicon Valley 2.0. The City will continue to participate in this effort and other emerging efforts like it.

Move 6.B: Participate in regional forums on climate vulnerability and adaptation. Climate adaptation efforts necessitate regional discussion to ensure actions effectively and efficiently address risks and don't place adjacent communities in greater harm. Organized regional conversations on climate adaptation are emerging, such as Bay Area Climate Adaptation Network (BayCAN), and various projects facilitated by the Association of Bay Area Governments (ABAG), such as Silicon Valley 2.0. This Move positions the City to participate in these discussions, maintain partnerships with key entities leading adaptation efforts, and stay informed about latest climate adaptation innovations.

Play 6.2: Protect Shoreline Area from Sea Level Rise and Coastal Flooding

Move 6.C: Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.

Valley Water (formerly Santa Clara Valley Water District) began the Shoreline Project in 2005, to provide sea level rise protection in Santa Clara County in partnership with the United States Army Corps of Engineers (USACE) and the State Coastal Conservancy (Conservancy). The first phase of the Shoreline Protection Project¹⁷, located in north San Jose, has been progressing and recently received federal funding for design and construction. In parallel, Valley Water prepared a Preliminary Feasibility Study for the remaining shoreline areas, including those adjacent to Sunnyvale. This study was completed in March 2017, and USACE has received \$500,000 in their FY 2019 work plan to continue the work to determine

the next phase for project implementation. Sunnyvale staff has remained engaged as a stakeholder in the project and will continue to participate to advocate for a project to protect Sunnyvale's shoreline.

Move 6.D – Identify shoreline protection solutions as part of Moffett Park Specific Plan¹⁸ update. The Moffett Park Specific Plan was adopted in 2004 to provide direction on land use, infrastructure, and design in the northernmost portion of the City, which is mainly commercial and industrial. This part of the City is located right along the Bay and is vulnerable to sea level rise. The Moffett Park Specific Plan is currently being updated to include, among other things, considerations to address future sea level rise.

Play 6.3: Strengthen Community Resiliency

Move 6.E: Update existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding. While the City has emergency response plans for some events like fire or earthquake, there are no community-specific plans to address response to extreme weather events, which may increase in frequency and severity due to climate change. These include heat waves, intense rain storms, and flooding from sea level rise. This Move calls for cross-departmental collaboration to expand current community-oriented emergency preparedness plans to respond to such events, with particular attention to vulnerable populations during natural disasters.

Move 6.F: Develop a community resilience plan. Climate resiliency means that residents and businesses have proactively prepared for extreme weather events such that they can withstand the duration and after-effects of the event. For the community to be more resilient to extreme heat, rain, and flooding events, the City will develop a community resilience plan to help even the most vulnerable populations be prepared to weather the storms of climate change.


Strategy 6: Adapting to a Changing Climate



Play 6.1: Assess climate vulnerabilities for Sunnyvale

TARGET:









- No quantifiable targets

Next Moves		Lead	Impacts	FY20	FY21	FY22
6.A	Review and summarize assessment products developed by the County's Silicon Valley 2.0 project and by the State.	ESD	   	•		
6.B	Participate in regional forums on climate vulnerability and adaptation.	ESD	   	•	•	•

Play 6.2: Protect shoreline area from sea level rise and coastal flooding

TARGET









- No quantifiable targets

Next Moves		Lead	Impacts	FY20	FY21	FY22
6.C	Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.	ESD	   	•	•	•
6.D	Identify shoreline protection solutions as part of Moffett Park Specific Plan update.	CDD	   	•	•	

Play 6.3: Strengthen community resiliency

TARGET

- No quantifiable targets

Next Moves		Lead	Impacts	FY20	FY21	FY22
6.E	Update existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.	DPS	   		•	
6.F	Develop a community resiliency plan.	DPS	   		•	•



GHG Avoided



Local Environmental Quality



Health & Livability



Community Savings



Partnerships



Future Work Planning & Resources

Future Work Planning & Resources

This Playbook provides an overarching, strategic framework for the City of Sunnyvale to achieve its end game of 80x50. The City envisions that the core elements of the Playbook – the Strategies and Plays – will not change as we progress towards our end game. The Strategies and Plays will continue to be the foundation for Sunnyvale’s ambitious march down the field towards our long-term targets.

As we live in an age and place of abundant technological innovation, we acknowledge that there will be future technologies and creative innovations that we don’t see today but that will drive drive our society in the decades to come. With uncertainty in our political climate, inevitable changes in the City as an organization, our evolving culture, and future policy changes from the state and federal governments, it is impractical to forecast the specific Moves to achieve all the strategies over a very long time-frame. Our detailed Next Moves, therefore, are deliberately intended to focus on a shorter time horizon so they can be meaningfully integrated into the business of the City and updated dynamically.

The implementation of this Playbook will occur in 5-year cycles. The first cycle is aimed for just three years to take advantage of the dynamic landscape for climate actions among local communities and to give greatest consideration to funding opportunities and partnerships. Subsequent cycles will be every five years. At the close of each cycle, the City will review progress on implementation of the Moves and on the future projections for community emissions in order to determine the best Next Moves for the subsequent cycle. New Moves will represent local conditions of the time, build on progress to date, and continue to advance assertively toward climate neutrality. An update on current emissions and on implementation progress of the current Moves will also be reported to the City Council, Sustainability Commission, and the community each year as part of a Playbook Scorecard.

The Next Moves chapter presented in this Playbook is our first short-term game plan that we’re calling “Game Plan 2022.” In order to align to the City’s annual budget cycle, Game Plan 2022 addresses implementation through fiscal year 2021-22. An update to the emissions inventory, based on community performance through 2020, and a proposal for the next Game Plan will be

presented to the City Council in early 2022 to inform the budget cycle for the next implementation timeframe, commencing with fiscal year 2022-23.

For Game Plan 2022, staff has evaluated the resource impacts across City departments and identified resources needed for implementation. Some of the next moves will be absorbed and integrated into existing departmental operating or projects budgets. Additional resources needed over the next three years total \$1.39 million in one-time costs, which includes consultant services, temporary staffing, and infrastructure needs, and \$1.47 million in ongoing costs (approximately \$500,000 each year), which includes three additional staff positions and augmenting the City’s ongoing budget for CAP implementation. Resources allocated to implementing the Climate Action Playbook will be refined and finalized as part of the annual process for budget development and approval by the City Council.

The City’s strategy to finance the implementation of the current and future game plans will evolve over time. Strategies that the City may consider could include:

- Leveraging partnerships and collaborative projects, particularly through Silicon Valley Clean Energy
- Developing a differential utility use tax (UUT) to incentivize electrification
- Charging carbon impact fees for development projects
- User fees for selected activities and services
- Paid parking in selected locations
- Transportation impact fees

Game Plan 2022

- Game Plan 2022 implemented through fiscal year 2021-2022
- Annual Playbook Scorecard to report progress
- Game Plan 2027 proposed in early 2022

Terms and Acronyms

40x30	40% greenhouse gas reductions by 2030
80x50	80% greenhouse gas reductions by 2050; equivalent to “carbon neutral”
BAU	Business-as-usual
CAC	Community Advisory Committee
CAP	Climate action plan
CAP 1.0	Sunnyvale’s Climate Action Plan (2014)
CAP 2.0	Initiative to Update Climate Action Plan 1.0; Playbook is the product of the CAP 2.0 Initiative
Carbon neutral	GHG emissions reduced by 80% from 1990 levels by 2050, with potential for remaining emissions to be addressed by carbon sequestration
DA	Direct Access
EV	Electric vehicle
EVCI	Electric vehicle charging infrastructure
GHG	Greenhouse gas
MTCO ₂ e	Metric tons of carbon dioxide equivalent
PV	Photovoltaic (solar energy)
SVCE	Silicon Valley Clean Energy
TNC	Transportation Network Company (e.g., Uber, Lyft)
VMT	Vehicle miles traveled

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All resources retrieved March 6, 2019 unless otherwise indicated.

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Community Partners

LinkedIn
Plug and Play

Consultant Team

DNV GL
OpenIDEO
Fehr & Peers
Acterra

Community Members

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Appendix A: Ideas Roster

Ideas Roster

The CAP 2.0 Framework draws on more than 240 ideas, the majority of which were sourced from our community through the OpenIDEO on-line challenge and the large in-person community workshop. Ideas also originated from City staff, leading City best practices, as well as CAP 1.0 actions that were identified for ongoing implementation. This appendix contains the complete list of ideas evaluated for the Climate Action Playbook. Each idea is identified by a randomly assigned, unique Idea ID#. The Next Moves (presented in Game Plan 2022: Our Next Moves) were developed by staff drawing inspiration from chosen elements of these ideas, and based on their feasibility, cost, and alignment with the City's overall goals and departmental programmatic priorities. The Next Move ID# is indicated where selected ideas from this list contributed to the development of the Next Moves for implementation by year 2020.

Strategy 1: Promoting Clean Energy		
Idea ID #	Idea Description	Next Move(s) ID#
1	Continue to support and steer Silicon Valley Clean Energy (Sunnyvale's community choice energy provider) in providing clean power for Sunnyvale's residents and businesses.	1.A
2	Target direct access shift to 100% RE	1.B
3	Solar roofs: We need to require developers to install solar panels on all new office buildings, just like San Francisco, Santa Monica and Lancaster.	1.C
4	Require solar for new construction	1.C
5	Incentivize local solar, efficiency, and storage	1.C, 1.D
6	Partner with SVCE to boost 100% RE participation	
7	Pilot new technologies (e.g., microgrids)	
8	Improve the Electric Power Mix	

Strategy 2: Decarbonizing Buildings		
Idea ID #	Idea Description	Next Move(s) ID#
9	Benchmarking Requirement: Require commercial properties to benchmark their energy consumption annually and require energy audits every five year with implementation.	2.A
10	Energy Benchmarking and Retrofit Policy/Programs for Energy Benchmarking: Characterize building stock and analyze feasibility for various energy efficiency programs per building type. Draft Energy Benchmarking Ordinance to improve overall system performance in the existing building stock and contribute to city-wide energy use reductions. Include stakeholder outreach, trades training and education, and prepare financing and incentive options. Establish energy score program and performance standards. Public awareness campaign and incentives for building performance.	2.A
11	Establish a residential energy conservation program that encourages or incentivizes homeowners to perform energy and water audits, with an emphasis on leveraging homeowner decision-making during home sale, purchase, and remodel.	2.B

Strategy 2: Decarbonizing Buildings		
Idea ID #	Idea Description	Next Move(s) ID#
12	<p>Outreach and Incentives for Electrification program (Heat pump water and space heaters): Build atop city's free energy audit program: launch a Score card program for single-family residents to track and reduce energy use; and include electrification incentives and options at time of audit.</p> <p>STAFF NOTE: City does not currently offer a free energy audit program. An online energy audit program (Green@Home) was offered for 12 months between 2017-2018.</p>	2.C
13	Pay for the Panel Program: Remove financial obstacles for the adoption of clean energy technologies.	2.C
14	Kick Out Carbon: Develop and Publicize electrification Incentives.	2.C
15	ZNE + All-Electric Incentives and Recognition program: While ZNE is mandatory for new construction in 2020, existing building stock will also need to be addressed to achieve GHG goals. incentivize and tell the success stories.	2.C
16	Municipal facility leadership by example: Upgrade muni. facilities as ZNE demonstration projects using win-win financing strategy.	2.D
17	Improve permit process and ordinance requirements: Maximize GHG reductions and coordinate improvement of permit process in accordance with new ordinance requirements such as Green Building Program Update or others. For example, expand the streamlined solar permitting process to include all rooftop solar project in the city (residential multi-family, commercial and industrial).	2.E, 2.G
18	No New Fossil Infrastructure: City would not purchase new capital eqpt., permit new comm. or res. development, or implement infrastructure that directly uses fossil fuels.	2.E
19	Differential Utility Tax Rate: Work with other cities and PG&E to enable Sunnyvale to implement a lower Utility User Tax on electricity and to raise the tax on natural gas.	2.F
20	Evaluate and update the 2009 Zoning Code for Green Buildings for single-family, multi-family, and non-residential building construction and major remodels every three to five years.	2.G
21	Connect businesses and residents with rebate programs that give priority to appliances with smart grid technology.	
22	Sunnyvale residents can get paid to save energy: OhmConnect is a free service in Sunnyvale that rewards you for saving energy when it matters most to the grid and the environment.	
23	Identify businesses that are likely to be the largest consumers of energy within the city and target City outreach to these businesses.	
24	Home Smart Track: A piece of hardware that monitors a user's energy usage for smarter consumption through visualization of aggregated user data.	
25	Home Energy Clock: A display, like a clock on the kitchen wall, that shows real time use of electricity, gas and water in kw, therms and cft plus dollars.	
26	Free energy audit for home and building owners: Building and home owners will be offered free-of-charge energy audit to identify best efficiency opportunities.	
27	Incentive-based policy for carbon capture and sequestration in building materials: Sunnyvale should create an incentive-based approach to encouraging construction using building materials that sequester carbon.	

Strategy 2: Decarbonizing Buildings		
Idea ID #	Idea Description	Next Move(s) ID#
28	Eco Housing: Convert the Sunken Garden golf course into a farm and eco housing condos.	
29	GHG>15%! Replace risky, toxic, inefficient (10%Eff!) Fireplaces and BBQ with 80%Eff. NG sealed-safe FP-Inserts & 90%Eff. hot water heaters.: GHG>15% Replace smoggy 10%Efficient Fireplaces & BBQs with 80%E NG(Without Solar-PVC) fireplace Inserts and >90%E hot water heaters.	
30	Reducing Air Conditioner Use in Sunnyvale.: This proposal will consider strategies to reduce air conditioner use in existing buildings and new construction in Sunnyvale, including tree planting and shading of buildings.	
31	One Stop Trusted Energy Shop: City energy consultants for residents and businesses for one on one help on implementation of solutions	
32	Turn Lights Off: I turn my lights off as I use them, maybe the many office buildings who leave their lights on 24/7 could do the same.	
33	Green Certification for businesses in Sunnyvale: Businesses can receive certifications that they are conserving energy to provide them incentives to do so.	
34	Green lease program: City provides recognition program for commercial developers or building managers who offer green leases. Green leases allow developers/property managers to invest in energy efficiency features and pass on a portion of the cost to the tenants. Tenants, in turn, pay for the energy use and are motivated to save energy.	
35	Revenue Neutral Carbon Tax on Natural Gas: Add carbon tax per therm to every SV user of Natural Gas which is used to provide rebates for switching to electric for space heating, etc.	
36	Streamline Permitting for Carbon Neutral Building: Accelerate the update of carbon-neutral building.	
37	Solar Hot Water: Make free non Co2 energy from the Sun.	
38	Fast install solar: Modular, possibly prefabricated, standardized approach to solar installation.	
39	Tours and Demos of Decarbonized homes/businesses: Once a year set a day where folks can tour homes + businesses that have innovated in reducing energy use & promoted low or no carbon tech.	
40	ZNE New Construction Policy: Enforce compliance with ZNE New Residential Construction goals of 15% above Title 24 standards for single-family residences and 10% above for high-rise properties with accompanying solar mandates. Incentivize and recognize commercial ZNE.	
41	Updated Green Building Code and Developer's Carbon Impact Fee: Utilize city's Green Building Code & impose Carbon Impact fee to encourage green building feat. that go beyond state's standards.	
42	Require all new and resurfaced parking lots, sidewalks, and crosswalks to be made of materials with high reflectivity, such as concrete or reflective aggregate in paving materials.	
43	Commit to using a warm aggregate mix for all asphalt patching, overlay, and reconstruction.	
44	Adoption of CALGreen Tier 1 or Tier 2 reach codes	

Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Idea ID #	Idea Description	Next Move(s) ID#
45	Promote Medium Density Housing Options in Existing Neighborhoods to Help Reduce Vehicle Miles Traveled: Enact policies to promote infill development @ modestly higher dens. than existing neighborhoods, house more people in SV to reduce VMT.	3.A
46	Facilitate the development of affordable housing near transit.	3.A
47	Sunnyvale Employees live here: Sunnyvale Employees become residents to reduce mobile traffic. This will also maximize their community involvement and cohesion.	3.A
48	Reform Residential Minimum Parking Requirements to Reduce VMT by Allowing More People to Live in Sunnyvale Near Jobs: Update Municipal Code to relax reqs. for dwellings to provide min. number of parking spaces, to support car-light lifestyles & reduce VMT.	3.B
49	Create maximum parking requirements and reduce minimum parking requirements for mixed-use development. Require parking lot sharing for mixed-use or commercial development with complementary hours of operation	3.B
50	Support car light lifestyles with limited parking supply lower vehicle ownership. Actively manage parking supply with parking pricing and unbundled parking	3.B
51	Let's get serious about Transportation Demand Management & Fair Value Commuting: Reduce SOV trips in commuting by strengthening TDM policies, "carrot/stick" commute clubs & community shuttles.	3.C
52	Transportation Demand Management strategies are implemented, mandated, enforced, and promoted actively, and used widely by everyone in Sunnyvale	3.C
53	Promote telecommuting to decrease solo drivers during commute time periods. Leverage technology to decrease need for driving and increase public/ride-sharing travel options	3.C
54	Require trip reduction programs in new residential, commercial, and mixed use development.	3.C
55	Require existing and future major employers to utilize a variety of transportation demand management (TDM) measures such as flexible work schedules, telecommuting, guaranteed rides home, low- or no-cost transit passes, parking "cash-out" incentives, and other programs that provide employees with alternatives to single-occupant commutes	3.C
56	Implement high quality transit service and a robust set of first/last mile strategies for at least two-thirds of the cross-city corridors	3.D
57	Advocate for transit service improvements by area transit providers consistent with established performance standards, with an emphasis on coordinating public transit schedules and connections and for subsidies for a higher level of transit service and/or more transit passes for residents and/or employees	3.D
58	Coordinate Connections to Mass Transit: Create a simple way for employers to coordinate getting employees to and from mass transit, to reduce car commutes to and from Sunnyvale.	3.D
59	Fully fund the City's bicycle and pedestrian improvement plans for completion by 2035.	3.E
60	Improve bicycle facilities and perceptions of comfort through pavement marking/coloring, physical separation specialized signs and markings, and other design elements	3.E

Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Idea ID #	Idea Description	Next Move(s) ID#
61	Implement projects and programs to improve the safety of cyclists and pedestrians through increased enforcement of pedestrian right-of-way laws, removing crossing impediments, improving crossing time at signalized intersections for pedestrians and cyclists, requiring drive-through food establishments to serve bicyclists, and providing center refuge areas for pedestrians and bicyclists to pause when crossing arterials	3.E
62	Support the creation of walking school bus programs in coordination with schools and parent organizations.	3.E
63	Continue to implement a Safe Routes to School program for increased bicycle and pedestrian safety to and from schools	3.E
64	Improve pedestrian safety and comfort through design elements such as landscaped medians, pedestrian level amenities, sidewalk improvements, and compliance with Americans with Disabilities Act (ADA) design standards, particularly for areas serving high volumes of traffic	3.E
65	Complete and connect low stress bicycle network in Sunnyvale: Best way to get people out of cars is to create easily accessed bike lanes and separate routes in a comprehensive cross-city network.	3.E
66	Fully implement bicycle and pedestrian projects throughout Sunnyvale to achieve a connected safe active network	3.E
67	Dockless Bicycle System For Better Transit Access: Provide means for citizens to travel to transit stops using city sponsored dockless bicycle system, for boarding transit instead of driving.	3.F
68	Support business efforts to plan and implement a bike-sharing program for major commercial and industrial areas	3.F
69	E-shuttle (electric) bus to move staff and employees around City: A free shuttle bus that moved people to major work hubs like Moffet Park would cut down on vehicles moving in directions where public transportation modes currently don't exist. Providing free or cheap transportation, WIFI, bike racks and regularly scheduled buses could reduce some of the traffic impacts. A mobile app showing the bus schedule could be created as well.	3.G
70	Free or Reduced Cost Green Shuttle: A shuttle (electric) bus from specific locations (City Hall, downtown) to Moffett Park or other business heavy areas!	3.G
71	Design streets and parking lots to accommodate increased pick-up and drop-off passenger and commercial demand	3.H
72	Create separate facilities and/or road pricing or priority schemes for autonomous vehicles and/or HOV, or Paid Express Lane	3.I
73	Determine if a cap on number of lanes or areas available to autonomous vehicles is appropriate	3.I
74	Sunnyvale Spice and Slice: Food festival and expo featuring locally grown food where Sunnyvale cooks and gardeners show off their skills and compete for fun.	3.I
75	Local food promotion	3.I
76	Rooftop gardens in Sunnyvale: We can plant rooftop gardens on some public or private buildings in Sunnyvale.	3.I

Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Idea ID #	Idea Description	Next Move(s) ID#
77	Support the conversion to a clean vehicle fleet with supporting infrastructure and incentives for individuals	3.J
78	Implement Policies to Accelerate EV Charging Infrastructure Installation Throughout Sunnyvale: Implement required strategies for accelerating EV Charging Infrastructure (EVCI) install. based on Palo Alto & related recommendations from PAEC.	3.J, 3.K
79	Secure funding to install electric vehicle recharging stations or other alternative fuel vehicle support infrastructure in existing public and private parking lots.	3.J
80	Sunnyvale Goes EV!: Educate and support Sunnyvale residents in the biggest action they can take to reduce their carbon emissions: driving electric!.	3.K
81	Sunnyvale EV mobility or Zero-Emission Fleet: Convert city vehicles to EV and install proper infrastructure.	3.L
82	Increase the number of efficient or alternatively fueled vehicles in the City fleet as vehicles are turned over	3.L
83	Solar on DPS covered parking and EVs/plug-in hybrid vehicles for DPS	3.L
84	Integrated housing at job centers: Require job centers (business parks, corporate campuses) to provide on-site housing for employees.	
85	Create walkable and bikeable neighborhoods with a diversity of services and entertainment options, and a diverse mix of residential and office development types.	
86	Require new development to reduce the need for external trips by providing useful services/facilities on-site such as an ATM, vehicle refueling, shopping	
87	Continue to plan for most new residential, commercial and industrial developments to be developed in specific plan areas, near transit, and close to employment and activity centers.	
88	Encourage the establishment and even distribution of neighborhood-serving facilities such as day care providers, banking/ATM locations, markets and drug stores in existing residential, commercial, and industrial areas in order to reduce the need for vehicle trips	
89	The Urban Village: Live without driving (except maybe work).	
90	Support on-demand ridesharing services that provide point-to-point access for all community members, especially the elderly, children, and the disabled	
91	Prepare for what is now parking to become available and design any future urban parking facility for eventual conversion	
92	High Density Housing near transit corridors to achieve housing and job parity by 2050: Sunnyvale adopts a high density housing near transit ordinance with a goal of achieving a one to one job / housing balance by 2050.	
93	Anti-Idling: My objective is to reduce the amount of GHG's and air pollution in Sunnyvale through reducing unnecessary vehicle idling.	
94	Achieve a jobs to housing ratio consistent with the regional average of less than 0.5 jobs per resident	
95	Continue to provide density and other zoning incentives or procedural or financial incentives to developments for establishment of alternative transportation infrastructure within the private as well as adjacent public right-of-way, such as increased bicycle parking, separated sidewalks, bike lanes and signage, and change and shower facilities	

Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Idea ID #	Idea Description	Next Move(s) ID#
96	Ensure that every village core has opportunities for growing produce locally	
97	Retain a residential parking permit program for residential areas adjacent to commercial areas of the City where parking is in higher demand	
98	Designate street parking stalls in the vicinity of key commercial and multi-family residential locations for efficient or alternatively fueled vehicles.	
99	Increase signal coordination as warranted to facilitate traffic flow along arterials and major collectors	
100	Deploy intelligent transportation systems measures for managing traffic of large-scale construction projects and at major City and private events	
101	Support, streamline, and incentivize the retention and expansion of local anchor and growth industries.	
102	Long-term rental homes: Convert short-term (<6months) rentals and empty investment homes into affordable long-term housing without costly construction and GHG.	
103	Address numbers: Require address numbers be clearly visible and legible from the street.	
104	Sunnyvale Bicycle Highway: As part of the Western Channel redevelopment, build a continuous bicycle highway from the bay, through downtown, past El Camino.	
105	Flexible work schedules: More flexibility in work schedules to allow employees to lessen the burden and stress of commuting and reduce emissions from congestion.	
106	Lunch Delivery Service: City can have contract with restaurants and fast food places to deliver work day lunches based on preorders (made by individual staff on a daily basis) to different locations of the City offices. This will reduce the number of vehicles on road during lunch time. City can also solicit restaurants incentives for bulk order.	
107	48/96 DPS Fire Schedule: Implement a 48-96 work schedule consists of a 6-day rotation period where each platoon works two consecutive 24-hour shifts, followed by four days off. For any given day of the week, an employee would work that day two weeks in a row, then have the next 4 off. Creates 50% reduction in commuting for all Sunnyvale Fire Service personnel and the resulting economic and environmental benefits this would create.	
108	Implement Congestion Management pricing in business parks: Convince fewer people to drive solo by charging a fee for each personal automobile entering business parks.	
109	Encourage More Ridership by Helping Change Public Perception of Public Bus System by Merging VTA Bus System with Corporate Bus System: Bring together Santa Clara VTA, large businesses & institutions to create efficient, clean electrical bus transportation system.	
110	City Mobility Strategy: A mobility strategy for the city would identify in clear and easy to understand language, the variety and volume of major commute routes to and from the city. As one example if a sizeable portion of the city's work force commutes from the East Bay, what are the current and future alternatives for commuters to get to and from Sunnyvale. Does the city have a workable strategy to help relieve highway congestion to and from that area? If not, what alternatives can the city contemplate in cooperation with other cities in the region, as well as regional transportation agencies to identify and address current gaps.	

Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Idea ID #	Idea Description	Next Move(s) ID#
111	Encourage and subsidize shared mobility autonomous vehicles	
112	Car-free lifestyle & Mobility as a Service: Promote the benefits of a car-free lifestyle and support 'mobility as a service' for city residents and businesses.	
113	Create a TDM program for City staff to promote alternative transportation modes and carpooling to the greatest extent possible	
114	Continue sponsoring projects to provide transit rider amenities at bus stops and rail stations.	
115	Work with the Valley Transportation Authority and neighboring jurisdictions to provide transit priority signal timing in order to decrease travel time	
116	Encourage schools to link employees and guardians of students with an online system such as 511.org that provides carpool matching	
117	Require sidewalks to be a minimum of six feet wide in order to allow side by side walking at identified locations that currently serve high pedestrian traffic volumes, or locations planned to serve high pedestrian traffic.	
118	Require secure bicycle parking at public and large private events	
119	Increase awareness of the city's bicycle facilities by updating the city bicycle map to show locations of public and private bicycle parking, creating a web-based application for members of the public to identify locations of private parking, and establishing information kiosks at key city locations to provide maps and highlight alternative modes of transportation	
120	Improve bike lanes, bike racks, and bike security: Making bike lanes safer and providing better resources to people who bike will incentivize bike transportation.	
121	Modernize Residential streets' speed limits and parking to increase capacity, improve mobile safety and reduce GHG: Prohibit speeding and parking on bike path streets. Prohibit visually impairing vehicles' parking risks to cars, cyclists & pedestrians.	
122	Green light for bikes/Idaho stop: Create more bike corridors where cyclists (almost) never have to stop at intersections.	
123	Increase Green Mobile and shrink carbon footprint: New home/buildings donate permanent green space property to connect safe bike/pedestrian paths, remove GHG inefficient, same-size structures.	
124	Metrics for Non-car travel within Sunnyvale: Create data for non-car travel comparable to that currently maintained by the City for car-based travel.	
125	WayWatchers: Mobile application that tracks how people move around the city and gives points towards tokens for rewards.	
126	Creative Parking Permits for all Street Parking and Per Use Fees for Public Parking Facilities: Require parking permits for all parking on streets and public parking facilities on; use modern technology for easy fee collection.	
127	Vehicle Tax on mileage, weight, and wheels: Tax vehicles based on mileage, weight, and number of wheels (while driven with audible/visible reminders).	

Strategy 3: Decarbonizing Transportation & Sustainable Land Use		
Idea ID #	Idea Description	Next Move(s) ID#
128	Replace 4-way stops with mini-roundabouts when possible: Mini-roundabouts reduce emissions when compared to stop-and-go traffic pattern of 4-way stops, and are more friendly on bike traffic.	
129	Flashing Yellow Left Turn Arrows: Replace red left turn arrows with flashing yellow left turn arrows to allow drivers to turn when their direction of traffic has the green.	
130	Sustainable Commuter Punchcard: This idea uses incentives to motivate commuters to carpool, use public transit, bike, or walk to work or school.	
131	New Civic Center: Re-design the future civic center to reduce planned parking in Option 1 (which is designed for today's transportation).	
132	Making Biking (More) Attractive/Fun: Community activities that encourage biking.	
133	Financing Better Mobility: A universal pass (daily, monthly, and/or yearly) paid for by all residents, for local, multi-modal, carbon-free public transportation.	
134	Improve walkability to Fair Oaks park: Make it easy to walk to Fair Oaks park for people living between Fair Oaks, Arques and Taylor.	
135	Affordable 100% solar power for EV mobility solutions (cars, shuttles, buses): Fuel all future electric vehicles (cars, shuttles, buses) with 100% clean, local, and affordable renewable energy.	
136	48/96 DPS Fire Schedule: City should consider discounting the electricity charging rates or providing free electric vehicle charging for a certain number of hours per employee per year. Incentivizing cleaner vehicles will help reduce the impact of the carbon emissions produced from employee commutes.	
137	Establish Electric Car Sharing Programs as Supplement to City Fleet: Partner with private car-sharing networks, like Envoy, to bring more EVs and EV infrastructure to City properties. Envoy provides a private, car-sharing network dedicated to a location where people live (e.g., apartment building) or work. Envoy will install chargers, supply and maintain EVs, and provide insurance for monthly subscription fees.	
138	Designate preferred parking stalls for electric, hybrid, and other alternative fuel vehicles in all public and private parking lots consistent with the California Green Building Code	
139	Facilitate new fueling stations that offer alternative fuels	
140	Incentivize gas stations to offer E85: Offer incentives for gas stations to offer more alternative fuels like ethanol (E85), hydrogen, or charging stations for electric vehicles.	
141	[Regulate] Gas powered garden equipment: Regulate and enforce rules that reduce the amount of particles that pollute our air from gas powered garden equipment.	
142	Car pool lanes for all-electric vehicles: A 24-hour express lane for all-electric vehicles on all major roads.	
143	Sustainable electric school buses for Sunnyvale's children and environment: We will help Sunnyvale's schools and community to adopt electric buses and innovative, affordable charging solutions.	

Strategy 4: Managing Resources Sustainably

Idea ID #	Idea Description	Next Move(s) ID#
144	Suggestions on how to implement the FoodCycle program into schools: The Sunnyvale FoodCycle program is moving into public schools and businesses, here are some thoughts on how we can better incorporate it.	4.A
145	Select materials to be targeted for diversion and diversion methods, services, or technologies based on the results of the Zero Waste Strategic Plan.	4.B
146	Waste Audits, education and outreach	4.C
147	Stop Wasting Water & Reduce GHG!: Enact new water efficiency methodologies and policies that combine to greatly reduce Sunnyvale's consumption and lead California by example.	4.D
148	Water conservation: Get the best use out of every drop of water.	4.D
149	Promote existing SCVWD efficiency/conservation rebates	4.D
150	Promote "purple pipe" (reclaimed water) infrastructure in new construction or major renovation in preparation for a growing, usable network.	4.E
151	Create a purple pipe network for citywide use of recycled water for irrigation and other outdoor purposes.	4.E
152	Continue to implement the City's Tree Preservation requirements.	4.F
153	Clarify codes and policies to maximize the preservation of the largest longest-living trees, and ensure the expansion of the urban forest over time as appropriate for the site.	4.F
154	Increase Tree Coverage: Increase tree coverage in Sunnyvale to sequester carbon, regulate temperature, manage water runoff.	4.F
155	Implement City's Green Infrastructure Plan	4.G
156	Carbon Cost Food Labeling: Encourage consumers to make choices that min. environ. impact, req. restaurants & grocers to label food & menu items w/ assoc. carbon emissions.	4.H
157	Business: In the mood for food: Encourage businesses to grow food at their corporate sites.	4.I
158	Tower Garden- a vertical, aeroponic growing system- 90% less water and space, 30% greater yield and 3x faster: I am a mom on a mission to promote education regarding healthy living and how to use urban farming that is productive and sustainable.	
159	Urban Agricultural Internships & Design Program: A system of academic credit for students to design and run urban farms/food stands with paid internships.	
160	Develop and implement a purchasing policy that requires food and other appropriate materials purchased by the City to be purchased from as local a supply as possible.	
161	CityTree Moss Wall: CityTree is a company that installs self-sustaining moss units that can have the equivalent of up to 275 trees per year for air cleaning.	
162	Tree Lined Street: Trees are efficient and aesthetic sequesters of CO2; trees add beauty while removing CO2 and replenishing O2.	
163	GHG>15%! Reduce Factory-Farm-Animals!: Discourage Farm-Animals' products to reduce global GHG>15% Redirect wasted resources to increase credible organic plant food supply.	

Strategy 4: Managing Resources Sustainably

Idea ID #	Idea Description	Next Move(s) ID#
164	Expand existing park, open space, and boulevard tree inventory through the replacement of trees with a greater number of trees when trees are removed due to disease, park development, or other reasons.	
165	Develop and implement canopy coverage requirements for City-owned parking lots, with exceptions for solar installations.	
166	Construction & demolition debris diversion	
167	Pricing increases/penalties for not recycling/composting	
168	Single-use plastics ban	
169	Straws Suck!: Ban plastic straws in eating and drinking establishments in Sunnyvale.	
170	Environmentally Preferable Purchasing Policy ('Default to Green'): Create a comprehensive Environmentally Preferable Purchasing policy for the city.	
171	3D printed homes: Bring affordable 3D printed homes to Sunnyvale.	
172	Ban the sale or dispersal of disposable, single use plastic water bottles at public events permitted by the City.	
173	Green city procurement: Use modern data science tools (ProductBIO.com or other) to evaluate and strategically reduce the impacts of the city's procurement spending.	
174	Reduce take-out plastics: Sunnyvale restaurants only give straws, plastic cup lids, and plastic utensils upon request from patrons for in-store or to go orders.	
175	CJF [Disposables Fee on Plastic Cups and Straws]: Would like to have local business be taxed on single use plastic cups and straws like shopping bag tax to incentivize individuals BYO cup.	
176	Sunnyvale The Green Shopping capital of the world!: List and patronize stores and businesses that decrease packaging and enable Bring Your Own Packaging when shopping.	
177	Require bottle water fillers at all drinking fountains.: Place water fillers at all drinking fountains and stand alone to encourage people to not use plastic bottles and to drink right amount.	
178	Bring your own produce bags: Reduce grocery store plastic bag use for fruits and vegetables by consumers bringing in their own containers.	
179	Trash to Cash: Composting for cash.	
180	Stop the wasted paper mailings: I would like help from the Sunnyvale community to get "Retail me not everyday" to d/c the paper mailings they send out that get trashed.	
181	Fewer Trash Cans, Less Litter?: Make trash cans as we know them non-existent.	
182	Multi-family program for composting, gardens	
183	Promote Reuse/repair and circular economy	
184	Water neutrality ordinance for new construction	
185	repurposing golf courses: convert City golf courses into agrihoods.	

Strategy 4: Managing Resources Sustainably

Idea ID #	Idea Description	Next Move(s) ID#
186	Provide supplemental funding to existing rebates	
187	Require new development to reduce potable indoor water consumption by 30% (Tier 1 CALGreen) and outdoor landscaping water use by 40%.	
188	Realtime Home Water Metering: A prototype water meter with iOS app showing instant usage.	
189	Discourage Use of Bottled Water: Plastic bottle disposal is a huge problem in the ocean and bottled water an economic problem. See Maude Barlow's book "Blue Future."	
190	Dollars for Natives: incentivize homeowners to plant California native landscapes.	
191	Control Water Usage: A Timer operated shower will reduce water usage.	
192	Implement the City's Urban Water Management Plan to facilitate a 20% reduction in per capita water use by 2020.	
193	Create flexible provisions and encourage residents and businesses to collect rainwater to use for irrigation purposes.	
194	Revise development standards to ensure the use of greywater, recycled water, and rainwater catchment systems is allowed in all zones.	
195	Sustainable Landscaping Program: Encourage sustainable landscaping through integrated program including electric landscape equipment & lead by example with city operations.	
196	The Sunnyvale Urban Forest: Host community tree planting events around Sunnyvale until trees outnumber residents.	

Strategy 5: Empowering Our Community

Idea ID #	Idea Description	Next Move(s) ID#
197	The Cool Block: Reinvent the world. The journey begins on the block where you live.	5.A
198	Develop and encourage a mechanism for neighborhoods to share equipment and resources to improve sustainability.	5.A
199	Create a structure or partner with other groups for volunteers, residents, and other organizations to help achieve Sunnyvale's sustainability goals.	5.A
200	Sunnyvale Strong Blocks: Create a program similar to the City of Palo Alto's Cool Blocks to engage neighbors in taking action together on climate and disaster preparedness.	5.A
201	Use the City's Sustainability Commission and outreach staff as a structure to coordinate with other groups for volunteers, residents, and other organizations to help achieve Sunnyvale's sustainability goals.	5.A, 5.D
202	Accelerating Clean Electrification for Sunnyvale Residents: YellowTin educates & empowers homeowners to make informed decisions on clean energy choices such as Solar, Battery, EV, Space & Water Heater.	5.B
203	BE Ready to Electrify (Residential SF & MF): Increase readiness for planned, economic migration from fossil-fuel use to efficient, clean electricity use in residential homes.	5.B
204	Provide a toolkit of resources, including web based efficiency calculators, for residents and businesses to analyze their greenhouse gas emissions in comparison to their neighborhood, the city, and the region.	5.B
205	[Online Neighbor Forum for] Energy Outreach and Education: Ways to involve more people in adopting clean energy technologies.	5.B

Strategy 5: Empowering Our Community		
Idea ID #	Idea Description	Next Move(s) ID#
206	Raising Awareness for CAP and Environmentalism: Create data-driven, specialized campaigns and programs that generate awareness and support for fighting climate change and being environment.	5.B
207	Inform the community of metering options, such as online applications and in-home monitors.	5.B
208	Sunnyvale Green@Home: Free SmartMeter analysis and personalized recommendations for how to reduce home energy waste and lower energy bills.	5.B
209	Dedicate a page of the City's website to climate change and climate change adaptation.	5.C
210	Green Warriors in Training: Teach them while they're young, so they can become eco leaders.	5.E
211	Recommend and advocate for schools to use the Air District curriculum or other programs for local school teachers to teach children about climate change, greenhouse gas emissions, and local actions.	5.E
212	Actively engage with Sunnyvale businesses to identify areas for GHG reduction and financial savings.	5.F
213	Visualizing Community Progress: Visual graphics that show progress towards sustainability goals.	5.G, 5.H
214	Climate Action - Project Tracking: Treat city greenhouse gas emissions & projects designed to reduce them w/ same rigor (planning, improv., controls, metrics) as city finances.	5.G, 5.H
215	Use sustainability initiatives within City operations to educate the community of ways to achieve sustainability by example.	
216	Next Door App for Community Utility Data: Share data and conservation success through an online forum.	
217	Dry your clothes for Free - Use a Clothesline!: All you need is enough space in your backyard to string a clothesline. You'd be amazed how much energy is saved.	
218	GHG Reduction Planning: Develop action road maps for individual households.	
219	Provide regular communication with schools, business, faith groups, community members and neighborhood groups to increase participation in the City's progress toward sustainability.	
220	Develop and implement a competitive greenhouse gas reduction program between groups of citizens in the City with an award component.	
221	Actively promote use of alternative modes of transportation as safe modes of travel. When applicable, promote on the City's web site and publications about viable programs sponsored by 511, the Air District and other recognized agencies.	
222	Through selected projects and efforts to improve City operations, demonstrate how sustainability efforts are possible and successful.	
223	Make comparison an intrinsic part of consumption. Bring awareness of how our consumption compares to other communities, regions, and others in our neighborhood.	
224	Manage Your Metrics, Manage Your Money: This concept would help Sunnyvale residents understand and use their data to manage their energy.	
225	SustainTimes.net - Sustainable Actions Made Easy!: Educate and Implement Sustainability Actions for the Mainstream Community.	
226	Environmental Fair: Provide idea for City of Sunnyvale CAP 2.0 plan. Volunteer during the fair with own booth.	

Strategy 5: Empowering Our Community		
Idea ID #	Idea Description	Next Move(s) ID#
227	Kid's Workshop: Treasuring Our Resources: Events that includes livecam to a farm and workshops for kids to encourage behavior change in sustainability.	
228	Art for the Climate: Emphasize Climate and the natural world in the City's "1% for Art" program and build on the successful Earth Day Poster and Film contest.	
229	Consolidate single function devices into multifunction: Evaluate usage and spending on single function devices and determine if consolidation into multifunction devices is cost efficient. Determine if follow me printing, authenticated printing, print management, and/or scan to email/folder are beneficial and cost effective.	
230	Planning and Building staff will work with project applicants to limit GHG emissions from construction equipment by selecting one of the following measures, at a minimum, as appropriate to the construction project: a. Substitute electrified or hybrid equipment for diesel- and gasoline-powered equipment where practical. b. Use alternatively fueled construction equipment on-site, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel. c. Avoid the use on on-site generators by connecting to grid electricity or utilizing solar-powered equipment. d. Limit heavy-duty equipment idling time to a period of 3 minutes or less, exceeding CARB regulation minimum requirements of 5 minutes.	
231	Deep Time Walk: The Deep Time Walk is a walking audio book where one meter walked represents one million years of Earth history.	

Strategy 6: Adapting to a Changing Climate		
Idea ID #	Idea Description	Next Move(s) ID#
232	Regularly train and inform the Department of Public Safety Office of Emergency Services (OES) on potential climate change risks and hazards.	6.A
233	On a regular basis, assess adaptation efforts of the City, region, and state and identify goals or gaps to be addressed.	6.A, 6.B
234	Appoint a staff liaison to attend and participate in regional meetings focusing on adaptation and resilience and to report back to staff on a regular basis	6.B
235	Analyze and disclose possible impacts of climate change on the project or plan area with an emphasis on sea level rise.	6.C, 6.D
236	Integrate climate change adaptation into future updates of the Zoning Code, Building Code, General Plan, and other related documents.	6.D, 6.E
237	Update the City Emergency Plan and Emergency Preparedness Workbook to address climate change impacts.	6.E
238	Require buildings, homes and properties achieve the best Fire prevention methods to reduce fire accident caused GHG	
239	Underground residential power, cable and gray water ecology to reduce GHG	
240	Regenerate the tidal marshlands	



Appendix B: Technical Background

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Overview

The Climate Action Playbook (Playbook) identifies how the City will meet or exceed the State of California's climate goals. The State has adopted ambitious targets to encourage greater climate action, including statewide GHG emissions reductions of:

- 1990 levels by 2020 (Assembly Bill 32, 2006)
- 40% below 1990 levels by 2030 (Senate Bill 32, 2016)
- 80% below 1990 levels by 2050 (Executive Order S-3-05, 2005)

To develop appropriate GHG emissions reduction strategies and actions, the City analyzed its baseline GHG emissions, forecasted future emissions while accounting for moderating impacts of existing policies and programs and determined future scenarios for emissions to estimate how emissions can be reduced through climate action. This analysis was used to guide the development of the Strategies, Plays and Next Moves documented in the Climate Action Playbook.

This appendix provides technical supporting information related to the abovementioned analyses, including a description of the overall methodology, key assumptions, calculations and supporting materials used for the analyses performed.

The work described herein was performed by consultants DNV GL and Fehr & Peers and utilized DNV GL's Climate Scenario Analysis Tool in combination with Fehr & Peers' TrendLab+ Tool for transportation emissions. These tools enabled City staff and community stakeholders to explore the trade-offs between different GHG reduction strategies and emissions reductions between sectors.

GHG Emissions Inventory and Forecast

Greenhouse gas (GHG) emissions inventories estimate the GHG emissions produced within a city's jurisdictional boundaries. They provide a quantifiable means for measuring progress toward reducing GHG emissions over time. The GHG inventory used to guide the development of the Playbook represents community-wide emissions from all entities (residential, commercial, industrial and municipal) within the City of Sunnyvale's jurisdictional boundaries.

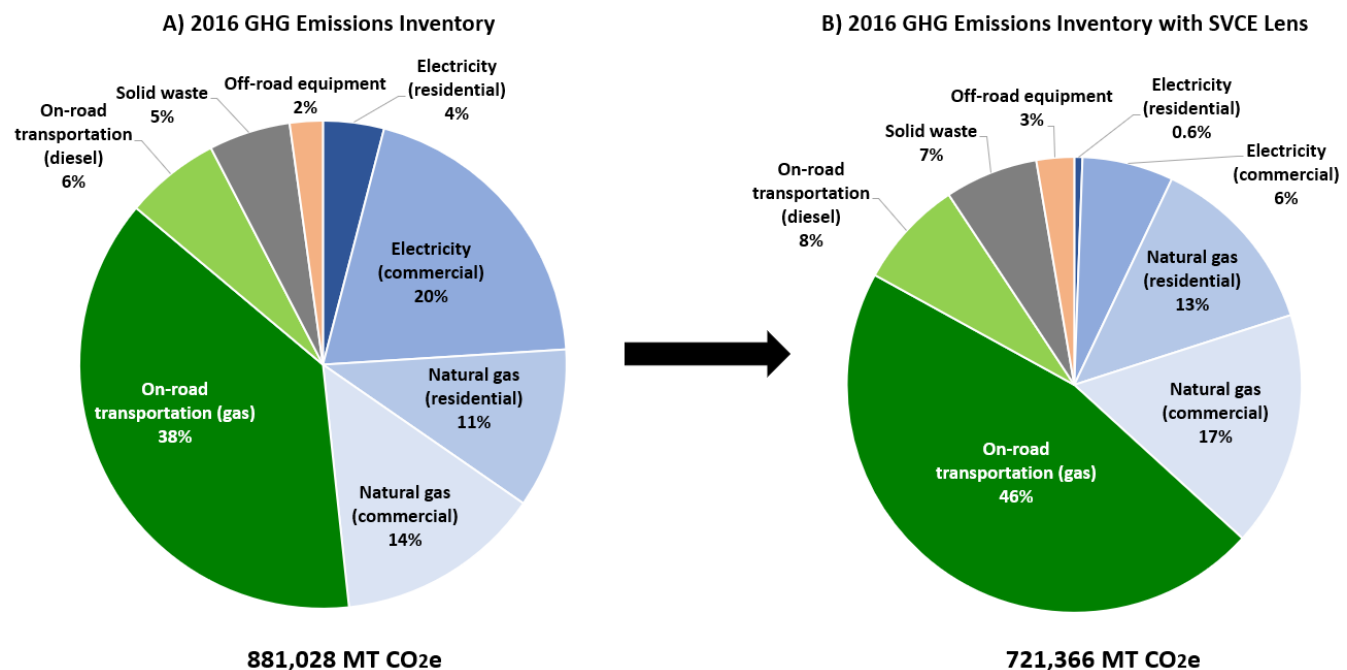
A. GHG Emissions Inventory

As a part of its original Climate Action Plan (CAP 1.0, adopted in May 2014), a baseline GHG emissions inventory was completed for calendar year 2008 to identify the major sources of GHG emissions within Sunnyvale. This inventory provides a baseline against which future progress can be measured. The City's GHG inventory was guided by the U.S. Community Protocol for Accounting and Reporting Greenhouse Gas Emissions (U.S. Community Protocol), developed by International Council for Local Environmental Initiatives (now called ICLEI-Local Governments for Sustainability, hereafter ICLEI) and industry stakeholders.

Following the 2008 baseline inventory, the City completed subsequent GHG emissions inventories for calendar years 2014 and 2016, in accordance with the two-year reporting cycle committed to in the CAP 1.0 Implementation Work Plan (adopted November 2014). These inventories followed the same methodology as the 2008 baseline inventory to provide an "apples-to-apples" comparison across years. The 2016 GHG inventory by sector is shown in Figure 1 (a).

With the launch of Silicon Valley Clean Energy (SVCE) in 2017, which provides carbon-free electricity throughout the community, the City anticipated a drastic drop in electricity sector emissions. To reflect the impact of SVCE's clean electricity, a modified 2016 GHG emissions inventory was created (Table 1) to estimate the GHG emissions impact as if the complete launch of SVCE had occurred in 2016. This serves as a proxy for understanding the magnitude of SVCE's impact and is called the "2016 GHG Emissions Inventory with SVCE Lens," shown in Figure 1(B). With the SVCE Lens, Sunnyvale's community-wide emissions are anticipated to decrease by 18% (from the original 2016 community-wide emissions), as demonstrated by the shrinking pie chart.

Figure 1: Sunnyvale’s 2016 GHG Emissions Inventory by Sector



*Emissions from Caltrain, water and wastewater account for less than 1% of total emissions and are not shown in the above charts.

An updated 2018 GHG inventory will be utilized to track progress against City’s climate targets adopted as a part of the Playbook.

Table 1: 2016 GHG Emissions Inventory with SVCE Lens

Emissions Sector	2016 Emissions (MTCO ₂ e)	Percent of 2016 Emissions
Electricity (residential)	4,165	0.6%
Electricity (commercial)	46,385	6%
Natural gas (residential)	92,999	13%
Natural gas (commercial)	119,659	17%
On-road transportation (gasoline)	331,074	46%
On-road transportation (diesel)	55,154	8%
Water & wastewater	3,202	0.5%
Solid waste	47,409	7%
Off-road equipment	19,173	3%
Caltrain	1,197	0.2%
Total (all sectors)	720,418	100%

Note: Data shown may not add up to the total due to rounding.

B. Forecast Methodology and Assumptions

A GHG emissions forecast estimates how emissions will grow or decrease in the future based on anticipated growth projections, impact of local and state policies and programs, anticipated changes in technologies and community

behavior trends. To estimate the GHG reductions needed to reach the state’s targets, Sunnyvale’s GHG emissions were forecasted based on anticipated growth in population, housing units, jobs, commercial and industrial space, and vehicle miles traveled or VMT (Table 2).

All data on growth variables was pulled from the City’s Land Use and Transportation Element (LUTE), adopted in 2017. The LUTE provides values of growth variables for the year 2014 and projects them for year 2035. For the Playbook, 2016, 2030 and 2050 values were calculated by either interpolating or extrapolating using the growth rate projected between the 2014 and 2035 values. The estimated 2016 values presented in Table 2 differ by less than 2% from the actual 2016 values published in the City’s Climate Action Plan Biennial Progress Report 2018 and cited in *The Playing Field* chapter of the Playbook (page 14). This difference does not have a significant impact on the scenario analysis described in the subsequent section of this appendix.

Table 2: Business-as-usual Growth Variable Forecast Assumptions based on 2035 LUTE Projections

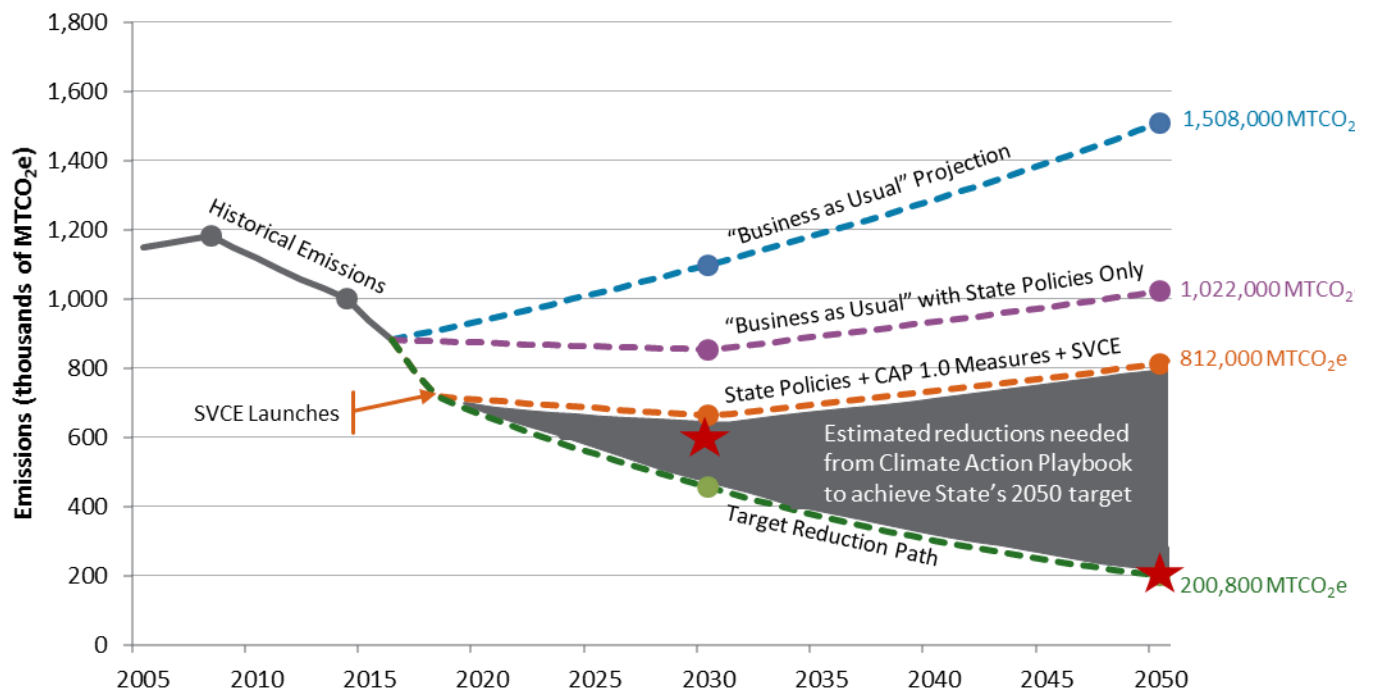
Growth Variable	2016 Estimated (LUTE*)	2030 (CAP)	2035 (LUTE)	2050 (CAP)
Population	149,471	167,533	174,500	197,187
Housing Units	58,318	68,436	72,460	86,009
Jobs	85,321	112,655	124,410	167,560
Non-residential million square feet	48.3	56.1	59.2	69.5
Vehicle miles travelled	869,828,540	1,126,403,395	1,235,341,167	1,629,542,923

*2016 values for growth variables were estimated based on 2014 values from the LUTE.

The growth variables in Table 2 were utilized to project business-as-usual growth on a sector-by-sector basis as described below.

- **Residential energy consumption:** Projected based on an average of the compound annual growth rate of population and compound annual growth rate of housing units.
- **Commercial energy consumption:** Projected based on an average of the compound annual growth rate of jobs and compound annual growth rate of non-residential built environment square footage.
- **On-road transportation:** Projected based on the compound annual growth rate of vehicle miles traveled (VMT) growth.
- **Solid waste, water and wastewater, off-road equipment, and Caltrain:** Projected based on an average of the compound annual growth rate of population, housing units, jobs, and non-residential built environment square footage.

Figure 2: Historical & Forecasted GHG Emissions: 2005 - 2050



★ = State Targets: 40% by 2030; 80% by 2050

The business-as-usual (BAU) forecast utilizes Sunnyvale-specific growth projections from the City's Land Use and Transportation Element (LUTE), adopted in 2017. These growth projections are available through 2035 when the City is projected to achieve complete buildout. This BAU forecast, however, assumes continued growth in the absence of future projections between 2035-2050.

The following four forecasts were developed to support the Playbook:

- (1) **Business-as-usual (BAU) forecast** analyzes how emissions will grow if per capita consumption trends and efficiencies remain at their 2016 level, while the number of people, jobs, and housing units, VMT, and square footage of commercial/industrial space in Sunnyvale continues to grow. In other words, the BAU is the status quo scenario before State, regional and local GHG emissions reduction efforts are taken into consideration.

The BAU projection utilizes the demographic projections for population, households, jobs and traffic (measured by vehicle miles travelled or VMT) as specified in the Land Use and Transportation Element (LUTE, adopted in 2017) of the City's General Plan. The LUTE includes projections out to year 2035, when the City is assumed to have reached complete buildout. As such, the 2017 LUTE does not contain projections for these growth variables for years 2030 and 2050, which define the interim and final planning horizons for climate action planning in the Playbook.

To estimate population, households, jobs and VMT for 2030 and 2050, a compound annual growth rate was calculated for each variable based on the baseline year of data available (2014) and the farthest future year of data available (2035). This compound annual growth rate was applied to the base year (2014) data to interpolate values of these variables annually through 2030 and to extrapolate these variables annually through year 2050.

The above methodology is based on two key assumptions that:

- growth will continue between 2035 and 2050, even though the LUTE assumes complete buildout by 2035; and

- the compound annual growth rate remains constant over the period between 2014 and 2050.

Based on these assumptions, the BAU forecast predicts a continued increase in emissions through 2050, driven by local growth. In reality, growth after 2035 may be higher or lower than assumed. However, in the absence of growth projections beyond 2035, this forecast is conservative as it estimates higher GHG emissions in the future than may actually occur if growth slows down based on the premise of complete buildout by 2035. See Table 4 for the projected 2030 and 2050 emissions under this forecast scenario.

(2) **Business-as-usual with State policies forecast** analyzes how emissions will change under the moderating impact of state and federal policies currently in place that are expected to significantly reduce GHG emissions in Sunnyvale. Specifically, the impact of the following policies was accounted for:

- California Renewable Portfolio Standard (RPS) to achieve 50% renewable energy by 2030¹
- California Energy Code, Title 24, Part 6² which contains energy conservation standards applicable to most residential and non-residential buildings throughout California, including goals related to zero net energy for residential new construction by 2020 and non-residential construction by 2030³
- Caltrain electrification, which will fully convert Caltrain to an electric fleet from the current diesel engines⁴
- Advanced Clean Cars Program⁵ adopted by California Air Resources Board in 2012 to enact low emission vehicle and zero emission vehicle regulations and more stringent fuel economy standards for model years 2017 – 2025.

See Table 4 for the projected 2030 and 2050 emissions under this forecast scenario.

(3) **Business-as-usual with State policies and CAP 1.0 measures** represents the most likely emissions trajectory for Sunnyvale in the absence of new climate action. This forecast considers ongoing implementation of the City's CAP 1.0, including the launch of SVCE. Only CAP 1.0 measures where the City has made significant progress on implementation were attributed to CAP 1.0 emissions avoided. Table 3 shows emissions avoided from the following CAP 1.0 measures were attributed to the Playbook.

¹ Note: Since the completion of the City of Sunnyvale GHG forecast and technical analysis for the Playbook, the State of California passed SB 100 in September 2018, increasing the overall RPS requirement from 50% to 60% by 2030. The legislation also adopted an additional goal of 100% of all retail sales by 2045 to come from renewable energy resources and zero-carbon resources. These additional emissions reductions are accounted for in the current analysis but attributed to SVCE since the community choice aggregation (CCA) program is already providing zero-carbon electricity.

² California Energy Commission, 2016 Building Energy Efficiency Standards.

<https://www.energy.ca.gov/title24/2016standards/index.html>

³ California Public Utilities Commission, Energy Efficiency Strategic Plan. <http://www.cpuc.ca.gov/general.aspx?id=4125>

⁴ Caltrain, Peninsula Corridor Electrification Project.

<http://www.caltrain.com/projectsplans/CaltrainModernization/Modernization/PeninsulaCorridorElectrificationProject>

⁵ California Air Resources Board, Advanced Clean Cars Program. ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program

Table 3: CAP 1.0 Measures Included in Emissions Forecast

CAP 1.0 Measure	2030 Emissions Avoided (MT CO ₂ e)	2050 Emissions Avoided (MT CO ₂ e)
Community Choice Aggregation	152,267	170,845
Commercial Outdoor Lighting Efficiency	184	200
Recycling and Composting	37,619	37,619
Water Conservation	286	477
Water Sources & Efficiency	140	345

The forecasts attribute emissions reductions in descending order as follows:

- emissions reductions resulting from statewide and federal policies.
- emissions reductions resulting from the implementation of local measures in Sunnyvale's CAP 1.0.

For example, the BAU forecast assumes that (non-direct access) electricity will be 33% renewable in 2030, because PG&E electricity in 2016 was 33% renewable. The BAU forecast with State measures assumes that electricity will be 50% renewable in 2030, because the State's RPS commits to 50% renewable electricity by 2030. The BAU forecast with CAP 1.0 measures included assumes that electricity will be 100% carbon free by 2030, because it factors in the impact of SVCE. The avoided emissions impact of moving from 33% to 50% renewable electricity in 2030 is attributed to the State RPS policy. The avoided emissions impact of moving from 50% renewable to 100% carbon free electricity in 2030 is attributed to the CAP 1.0 community choice aggregation measure. See Table 4 for the projected 2030 and 2050 emissions under this forecast scenario.

- (4) **Target Reduction Path** is the path the City must be on to best ensure meeting the state's 2050 target (green dotted line in Figure 2). This target path is represented by a curved line interpolated between the current emissions and the 2050 target of 80% below 1990 levels. As such, this interpolated target path assumes a GHG reduction greater than 40% must be achieved by 2030. This is reflective of the fact that buildings and other infrastructure that are put into place now will likely still be in place in 2050. Emissions reductions achieved in the short-term (i.e., through 2030) will better position the City to meet its longer term 80x50 target. Therefore, it is very important that the City exceed the state's interim target by meeting a 55% reduction by 2030 to stay on the pathway to 2050. See Table 4 for the projected 2030 and 2050 emissions under this forecast scenario.

Table 4: Emissions Forecast by Scenario and CAP 2.0 Emissions Reduction Targets

Description	2030 Remaining Emissions (MT CO ₂ e)	2050 Remaining Emissions (MT CO ₂ e)
Business-as-usual emissions	1,097,846	1,507,877
BAU with State policies	852,550	1,021,498
BAU with State policies + CAP 1.0	699,741	849,870
CAP 2.0 target	456,023	199,458

The Playbook contains Strategies and Plays that are designed to address the gap between the target reduction path and the business-as-usual emissions forecast that accounts for State policies and CAP 1.0 measure implementation (grey wedge in Figure 2).

C. Implications for the Future

Emissions forecasts represent a future view based on current technological, market and behavioral trends at the time of the analysis. The forecasts make assumptions about population, jobs and growth patterns as identified in the 2017 LUTE. However, growth may happen at a different pace than planned for, and new State and federal policies will influence expected GHG emissions. Therefore, regular GHG communitywide inventories are necessary to account for unforeseen exogenous factors to better ensure that the City remains on track to meeting State climate goals and the commitments of the Paris Agreement.

Scenario Analysis: Estimating Reductions

When it comes to issues as complex and uncertain as climate change, scenario development is a valuable tool for stimulating debate, and inspiring action and innovation. The Playbook relies on two scenario analyses for the target years 2030 and 2050. DNV GL's Climate Scenario Analysis Tool was customized based on Sunnyvale's 2008 baseline GHG emissions inventory, subsequent inventories for 2014 and 2016, anticipated SVCE impact and future projections. The tool also integrates Fehr & Peers' TrendLab+ tool outputs related to transportation to explore different emissions scenarios for 2030 and 2050. These scenarios were analyzed using stakeholder input to explore different options and pathways for emissions reductions. Stakeholder input included feedback from the community, CAP 2.0 Advisory Committee (CAC), and City staff.

A. Scenario Analysis for 2030 and 2050

The DNV GL Climate Scenario Analysis Tool (Climate Tool) is an Excel-based workbook that integrates Sunnyvale's GHG emissions for 2008, 2014 and 2016. The DNV GL Climate Tool utilizes the BAU forecast with the impact of State policies and CAP 1.0 implementation as the base scenario for attributing further emissions reductions associated with specific strategies and targets.

The Climate Tool lays out a possible scenario to achieve each of the targets on Sunnyvale's aforementioned target reduction path:

- 55% below 1990 levels by 2030 (exceeding the State's 40x30 target), in order to reach
- 80% below 1990 levels by 2050 (equal to the State's target)

In each scenario, the Climate Tool analyzes possible GHG reduction strategies and the targets that need to be achieved in each of the following four sectors:

- Natural gas
- Electricity
- Transportation
- Waste

These four sectors are largely aligned with the City's GHG inventory sectors and contribute most significantly to total community-wide GHG emissions.

B. Setting Targets for Energy and Waste

Within each sector, the Climate Tool identifies a set of strategies related to conservation and efficiency (e.g., source reduction) as well as shifting to cleaner sources (e.g., electrification and renewable resources). Each strategy is associated with an implementation target level that may be adjusted by users – that is, the target may be dialed up or dialed down. Table 5, parts (a) through (c), provide examples of the strategies and targets that may be adjusted for these sectors.

Targets are set separately for 2030 and 2050. The City's focus is to achieve the 2050 emissions reduction target. Simultaneously running the analysis for 2030 helps to develop a better understanding of the emissions reductions that are achievable by 2030 and the trade-off between strategy-level targets that will be necessary to achieve the

2050 target. As targets for each sector are dialed up or down based on user input, the total projected GHG emissions for each scenario will be altered.

Table 5. DNV GL Climate Scenario Analysis Tool – Example Natural Gas Strategies and Target Level Inputs by Sector

(a) Natural Gas Sector Targets

Strategy	Target Level Description	2030 Target Level (User Input)	2050 Target Level (User Input)
Improve efficiency of residential natural gas use	% reduction in natural gas before electrification	5%	30%
Improve efficiency of non-residential natural gas use	% reduction in natural gas before electrification	5%	30%
Electrify residential water heating equipment	% equipment electrified after energy efficiency	20%	50%
Electrify residential space heating equipment	% equipment electrified after energy efficiency	20%	50%
Electrify non-residential water heating equipment	% equipment electrified after energy efficiency	20%	50%
Electrify non-residential space heating equipment	% equipment electrified after energy efficiency	20%	50%
Electrify non-residential cooking equipment	% equipment electrified after energy efficiency	20%	50%

(b) Electricity Sector Targets

Strategy	Target Level Description	2030 Target Level (User Input)	2050 Target Level (User Input)
Improve efficiency of residential electricity use	% reduction in electricity	5%	10%
Improve efficiency of non-residential electricity use	% reduction in electricity	5%	10%
Expand rooftop solar	% remaining electricity emissions eliminated with Photovoltaics (PV)	3%	5%
Increased participation in SVCE's carbon free electricity offering	% of electricity carbon free	100%	100%

(c) Waste Sector Targets

Strategy	Target Level Description	2030 Target Level (User Input)	2050 Target Level (User Input)
Decrease amount of waste sent to landfill	% waste diverted from landfills	90%	90%

C. Setting Targets for Transportation

Transportation emissions are typically estimated based on vehicle miles traveled (VMT), which is the total miles driven by private or public vehicles. VMT is calculated using the origin-destination (OD) VMT method. An OD VMT estimate tracks all the vehicle trips generated within a geographic area across the entire network to their ultimate destinations and isolates the VMT as follows:

- Internal-internal (II): All trips made entirely within the study jurisdiction.
- One-half of internal-external (IX): One-half of trips with an origin within the study jurisdiction and a destination outside of this jurisdiction. This assumes that the study jurisdiction shares half the responsibility for trips traveling from other jurisdictions.
- One-half of external-internal (XI): One-half of trips with an origin outside the study jurisdiction and a destination within this jurisdiction. Similar to the IX trips, this assumes that the study jurisdiction shares the responsibility of trips traveling to other jurisdictions.
- External-external (XX): Trips through the study jurisdiction are not included because the study jurisdiction cannot implement policies that influence the trip-making behavior. Rather, through trips are assigned to other jurisdictions that can influence either the origin or destination side of the trip-making behavior.

As population and jobs in Sunnyvale grow, total annual VMT will naturally increase. Therefore, a more reliable assessment of changes in VMT is the VMT per service population⁶. VMT per service population is defined as the annual VMT divided by the service population.

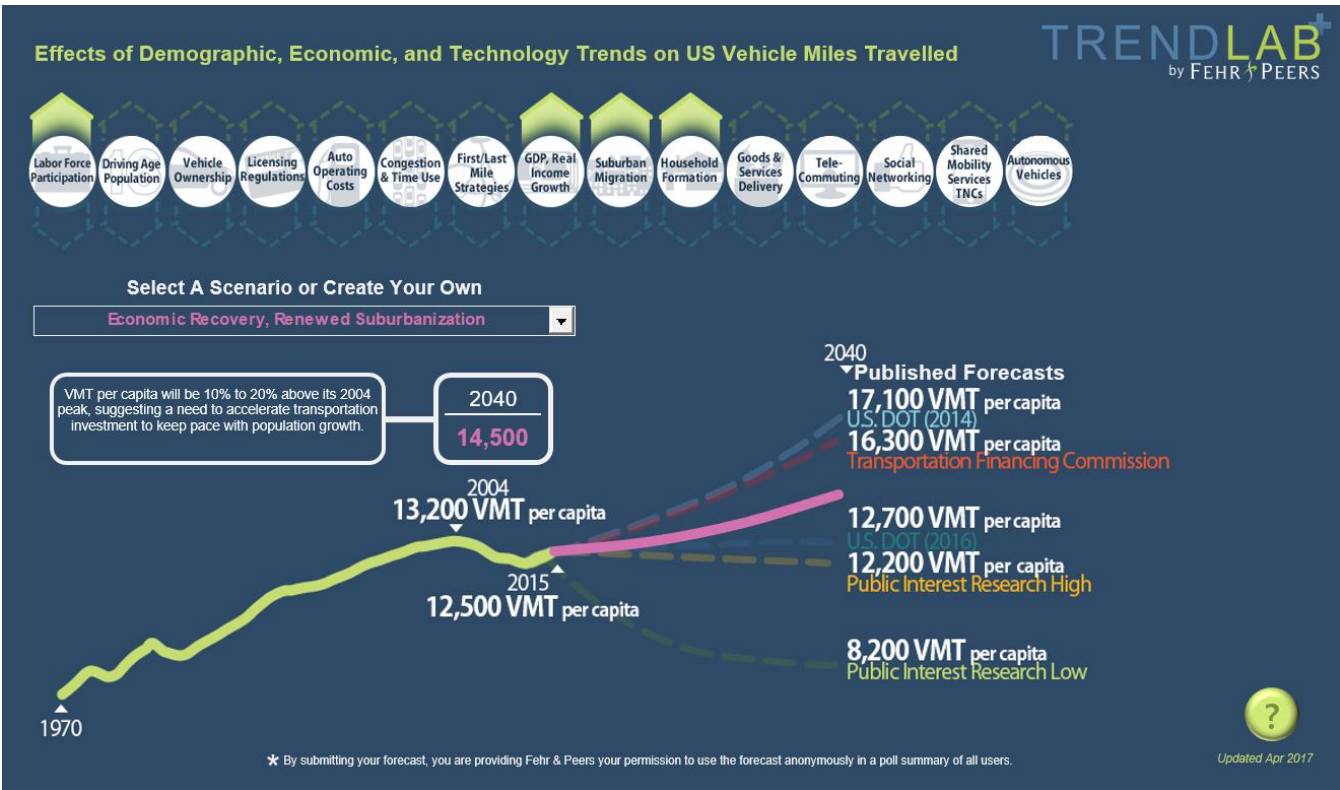
To determine VMT per service population targets for the Playbook, the City used Fehr & Peers' TrendLab+ tool. The Fehr & Peers TrendLab+ tool is a scenario tool that tests how changes from the business-as-usual trends could influence VMT per service population. Fehr & Peers first developed TrendLab+ in 2016 to evaluate the effects of evolving trends on 2040 national average VMT per service population under different future scenarios, such as economic recovery and millennial preferences. The tool (Figure 3) documents the historical annual VMT per service population from 1970 to 2015 in the United States and estimates future year VMT per service population based on the user's input on how they believe the trends might change in the future. Each trend has three possible changes that users can select from: up, level and down. Each scenario estimates future VMT per service population based on the combined effect of each trend. Since user preferences on the future trends might differ, the VMT per service population estimate varies within a range. The tool also includes VMT per service population forecasts published by U.S. Department of Transportation and other public interest research groups for comparison.

Fehr & Peers adapted TrendLab+ for Sunnyvale to estimate VMT per service population in the target years of 2030 and 2050. Fifteen trends that have the greatest influence on Sunnyvale's VMT per service population were identified and used for the Sunnyvale TrendLab+ tool. Because some of trends are anticipated to continue to grow (e.g., clean-fuel vehicles) rather than fall, these trends have the possible changes of staying level, going up and or going "double up." The Sunnyvale TrendLab+ tool separates the citywide annual VMT into "clean" (i.e., miles traveled by vehicles that have zero emissions) and "non-clean" VMT (i.e., miles traveled for fossil fuel powered vehicles) to account for the decarbonization benefits of adopting a cleaner community-wide vehicle fleet. DNV GL's Climate Tool integrates a separate module based on TrendLab+ Tool to account for VMT impacts.

The VMT per service population used in Sunnyvale TrendLab+ tool is based on VMT and service population estimates from Sunnyvale's LUTE, adopted in 2017. See Table 2 for details on population, jobs and VMT projections incorporated into TrendLab+.

⁶ The service population is the sum of resident population and employment.

Figure 3: National TrendLab+ Tool



Trends for Sunnyvale

The fifteen trends included in Sunnyvale TrendLab+ fall into five categories (Table 6): demographic trends, economic trends, land use trends, transportation infrastructure trends, and technology trends.

Table 6. Trends in TrendLab+ Tool

Demographic	Infrastructure
Local Labor Force Participation	Low-Stress Bicycle/ Pedestrian Network
Driver Population	Transit Corridors Enhancement
Economic	Technology
Vehicle Ownership	Goods & Service Delivery
Auto Operating Cost	Social Networking
Transportation Demand Management (TDM) Strategies	Clean-Fuel Vehicles
Telecommuting	Ride Hailing/Shared Mobility
Land Use	Autonomous Vehicles
Housing Affordability	
Densification/Mixed Use	

Table 7 lists each trend, its magnitude of impact, and its direction of influence (direct vs. inverse) on VMT per service population. The magnitude of impact is categorized as high, medium or low, which provides insights for prioritizing transportation policies.

Table 7: Magnitude of Impact for Trends on VMT Per Service Population

	Magnitude of Impact	Direction of Influence	Category
Local Labor Force Participation	High	Direct	Demographic
Auto Operating Cost	High	Inverse	Economic
Housing Affordability	High	Inverse	Land Use
Ride Hailing/Shared Mobility	High	Direct	Technology
Driver Population	Medium	Direct	Demographic
Low Stress Bicycle/Pedestrian Network	Medium	Inverse	Infrastructure
TDM Strategies	Medium	Inverse	Economic
Transit Corridors Enhancement	Medium	Inverse	Infrastructure
Densification/Mixed-Use	Medium	Inverse	Land Use
Goods & Services Delivery	Medium	Direct	Technology
Autonomous Vehicles	Medium	Direct	Technology
Vehicle Ownership	Low	Direct	Economic
Telecommuting	Low	Inverse	Economic
Social Networking	Low	Inverse	Technology
Clean-Fuel Vehicles	Low	Direct	Technology

Sunnyvale TrendLab+ Scenario Summary

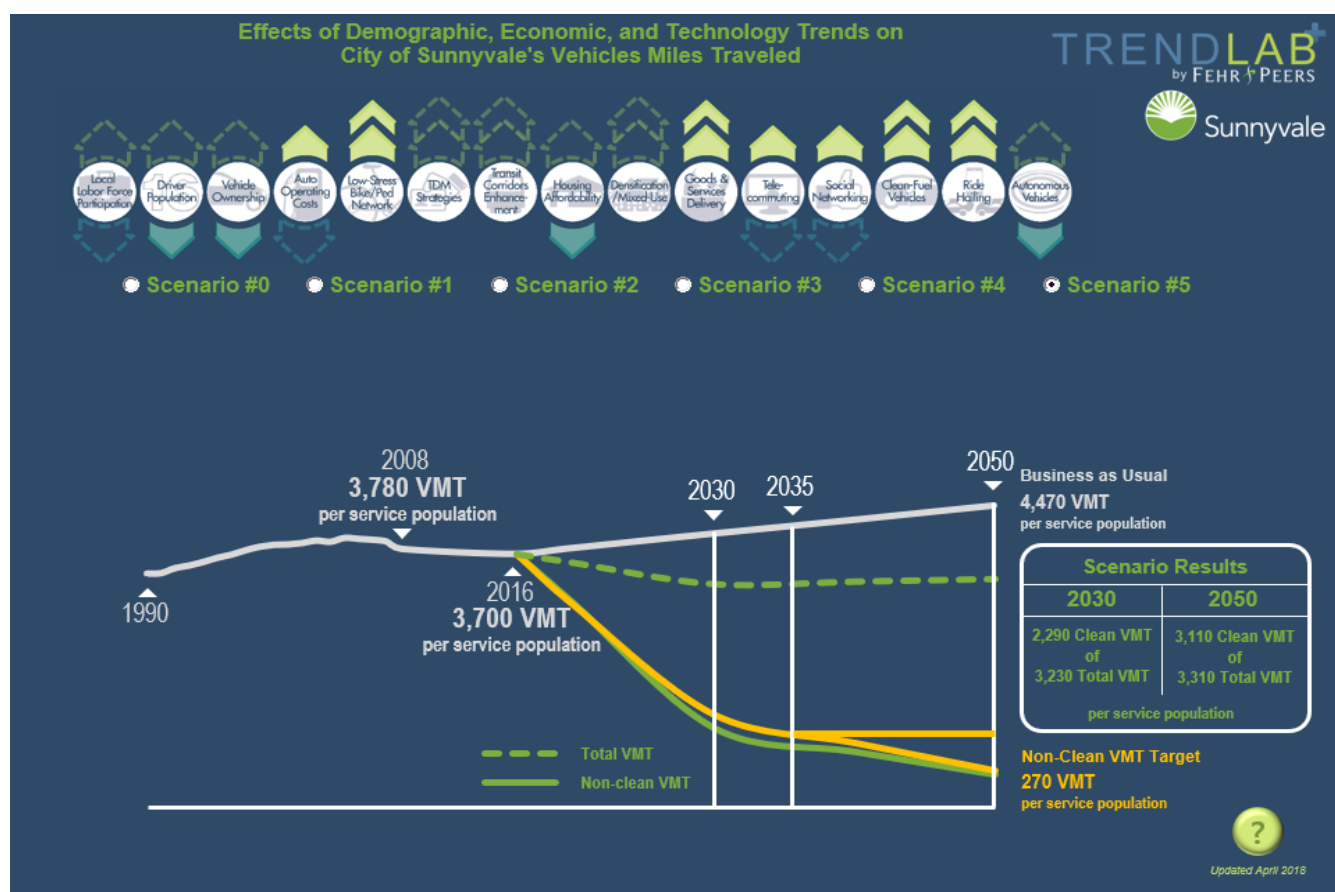
As a part of the community and staff outreach, community members, the City's staff, and the Climate Action Committee (CAC) members were asked to vote on what trends (shown in Table 7) they wished to see in Sunnyvale in the future for each of the variables. The following six scenarios were generated using the Sunnyvale TrendLab+ tool during the community and staff outreach phase of the project:

- **Scenario #0: Business-as-Usual** – This scenario summarizes the citywide annual VMT per service population for business-as-usual conditions under 2008, 2016, 2030, 2035, and 2050 conditions. This scenario represents a scenario similar to the 2035 Land Use and Transportation Element (LUTE).
- **Scenario #1: Ideas Workshop** – This scenario summarizes the citywide annual VMT per service population based on the most common trends voted on at the March 3, 2018 *Innovate Climate Action in Sunnyvale* Workshop.
- **Scenario #2: Transportation Focus Meeting** – This scenario summarizes the citywide annual VMT per service population for the most common trends voted on at the City staff workshop focused on transportation.
- **Scenario #3: CAP 2.0 Advisory Committee (CAC) Meeting** – This scenario summarizes the citywide annual VMT per service population for the most common trends voted on at the April 5, 2018 CAC meeting.
- **Scenario #4: CAP 2.0 (Composite Results)** – This scenario summarizes the citywide annual VMT per service population from the composite of the trends from Scenarios 1, 2 and 3, as noted above.
- **Scenario #5: CAP 2.0 (Alternate Results)** – This scenario summarizes the citywide annual VMT per service population from moderating the composite results of Scenario #4 for TDM strategies, transit corridor enhancements, housing affordability and densification/mixed-use.

For each scenario, service population forecasts and the citywide annual VMT (including clean and non-clean VMT) were estimated using the TrendLab+ tool. The output VMT per service population from these scenarios were used as input into the DNV GL Climate Tool to estimate citywide GHG emissions.

City staff selected a modified version of Scenario #5 that relies more heavily on a clean vehicle fleet and sets ambitious yet attainable VMT targets. Scenario #5 projects a target of reducing VMT per service population by 13% by 2030 and by 11% by 2050, both measured relative to 2016 levels. For 2030, staff adopted the projected target of reducing VMT per service population by 13% from Scenario #5. For 2050, however, staff accelerated the target beyond that projected by the TrendLab+ model to achieve a 25% reduction in VMT per service population to ensure that the City continues on a path of progressively reducing vehicle miles and encouraging mode shift to alternative transportation.

Figure 4. Sunnyvale TrendLab+ VMT Projections for 2030 and 2050 for Scenario #5 with High Clean Fuel Fleet Adoption



The final selected transportation sector targets (modified Scenario #5) reflect:

- A high rate of clean fuel fleet adoption, reaching 20% by 2030 and 75% by 2050;
- Aggressive growth in investment in active transportation and transit projects, given a progressively shrinking driver population;
- A Transportation Demand Management (TDM) program that is mandatory and enforced actively by the City. This attribute is not reflected in the modeled Scenario #5 (Figure 4), but is reflected in the higher target used for 2050 as TDM forms a core component of the City's transportation strategy moving forward.
- Increased reliance on goods and services delivery, telecommuting, social networking and ride hailing; and

- Increased use of ride sharing options and reduced vehicle ownership.

Table 8 summarizes the citywide annual VMT per service population for modified Scenario #5, which is a composite of the meeting scenario trends..

Table 8: Transportation targets with Modified Scenario #5

Metric	2016	2030	2050
Citywide Annual VMT	869,904,400	650,036,200	718,551,600
Percent Change in Annual VMT	0%	4%	16%
Citywide Annual VMT per Service Population	3,705	3,230*	2,775**
Percent Change in Citywide Annual VMT per Service Population (relative to 2016)	0%	-13%	-25%
Clean Fuel Vehicle Fleet Adoption Portion	0.5%	20%	75%
Clean Citywide Annual VMT per Service Population	17	646	2,081
Non-Clean Citywide Annual VMT per Service Population	3,688	2,584	694

Note: All VMT is citywide annual shared VMT per service population. Citywide annual shared VMT per service population: citywide daily shared VMT (100 % internal + 50% internal-external, and 50% external-internal) x 347 days/year.

*VMT per service population for 2030 is equal to that used in Scenario #5 modeled in the TrendLab+ tool and reflected in Figure 4.

**VMT per service population for 2050 is not equal to that used in Scenario #5 modeled in the TrendLab+ tool, as the modeled value of 11% reduction in VMT per capita relative to 2016 allowed the City to relax VMT reduction targets. Instead, City staff increased the 2050 target to achieve a 25% reduction in VMT per capita relative to 2016 to ensure that this target reflects continued emphasis on reducing VMT and shifting to alternative transportation modes.

DNV GL's Climate Tool used the citywide VMT estimates from the TrendLab+ tool to calculate citywide GHG emissions from the transportation sector. The clean vehicle adoption rate and reduction in total VMT work in tandem to impact overall citywide GHG emissions. If other sectors are more effective at reducing GHG emissions, then the clean vehicle adoption rate can be lower. Table 8 summarizes the clean VMT as 20% of Sunnyvale's total VMT by 2030 and 75% of Sunnyvale's total VMT by 2050. If the targeted percent of total VMT accounted for by clean vehicles is reduced, then a greater reduction in VMT per service population will be required to achieve the 2050 emissions reduction target. The opposite is also true. If the targeted percent of total VMT accounted for by clean vehicles is higher, a lower reduction in VMT will be required to achieve the 2050 emissions reduction target.

As of 2016, Sunnyvale's total VMT is 3,705 per service population. The results of Scenario #5 with modifications is a target VMT per service population of 3,230 in 2030 (i.e., 13% reduction in VMT per service population relative to 2016) and a target VMT per service population of 2,775 VMT per service population (i.e., 25% reduction in VMT per service population relative to 2016).

D. Estimating Emissions Reductions Across Sectors

The Playbook strategies are applied to the current emissions by first prioritizing efficiency and conservation measures (e.g., strategies that reduce energy, transportation and waste) and then strategies that shift to cleaner sources are applied to the remaining emissions (e.g., strategies related to solar PV, electric vehicles, etc.). This general approach to climate action planning is in accordance with the CPUC's Energy Efficiency Strategic Plan, which acknowledges the State's "loading order" and identifies energy efficiency as California's top priority resource.⁷

⁷ California Public Utilities Commission, 2008. "Energy Efficiency Strategic Plan."

The Climate Tool considers interactive factors between sectors e.g., increases in electricity consumption from electrification of buildings and transportation are taken into account. Furthermore, “dialing down” targets in one sector (e.g., transportation targets related to VMT) enables the user to see the overall impact on potential emissions reductions for 2030 and 2050 and allows for “dialing up” targets in other sectors (e.g., buildings) to meet State climate goals.

E. Selecting Final Scenario Targets

The DNV GL Climate Scenario Analysis Tool provides a summary output table for each target year (Table 9) that shows the overall GHG reduction target being achieved across sectors by the suite of emissions reduction strategies and targets selected.

Table 9. DNV GL Climate Scenario Analysis Tool Summary Table for 2030

Metric	2030	2050
Remaining emissions in target year	456,023	199,458
1990 baseline emissions	1,004,194	1,004,194
Sunnyvale projected % emissions reduction below 1990 levels by target year	55%	80%
State target % emissions reduction below 1990 levels by target year	40%	80%

F. Metrics to Measure Progress

To ensure the success of implementing the Plays in the Playbook, the City will integrate the Plays and Next Moves into its other local and regional plans, programs and activities. Playbook implementation requires tracking progress to ensure the City is on track to meeting the State’s climate goals.

The City will continue update its GHG communitywide emissions inventory every year with support from regional agencies including SVCE, Metropolitan Transportation Commission (MTC) and Valley Transportation Authority (VTA). In addition, the City will track key metrics as listed in Table 10; these key metrics directly influence community-wide GHG emissions and are, therefore, indicators of progress made towards implementing the Plays and achieving their associated targets.

Table 10. Key Metrics and Data Sources for Tracking Progress Towards CAP 2.0 Play Targets

Play	Target	Metric	Metric Data Source
Strategy 1: Promoting Clean Electricity			
Play 1.1: Promote 100% clean electricity	2030: 100% participation in clean electricity 2050: 100% participation in clean electricity	Remaining direct access electricity consumption	SVCE, PG&E
Play 1.2: Increase solar photovoltaics (PV)	2030: 3% of load from local solar 2050: 5% of load from local solar	Distributed solar photovoltaics (PV) capacity	California Distributed Generation Statistics

Play	Target	Metric	Metric Data Source
Play 1.3: Increase distributed electricity storage	2030 Target: 1% of electricity demand stored in batteries locally 2050 Target: 5% of electricity demand stored in batteries locally	Cumulative communitywide battery storage capacity	CPUC Self-Generation Incentive Program (SGIP) data on battery storage installed capacity
Strategy 2: Decarbonizing Buildings			
Play 2.1: Reduce energy consumption in existing buildings	2030: 5% of existing homes and businesses receive deep energy retrofit 2050: 30% of existing homes and businesses receive deep energy retrofit	Energy efficiency program participation rates	PG&E, BayREN and SVCE
Play 2.2: Support electrification of existing buildings	2030: 20% of homes and businesses completely electrified 2050: 50% of homes and businesses completely electrified	Number of customers on all-electric rates or without associated gas account.	SVCE
Play 2.3: Achieve all-electric new construction	2030: 100% all-electric new buildings 2050: 100% all-electric new buildings	Number of new buildings that are all-electric Total area (sq. ft.) of buildings that are all-electric	City Community Development Department (CDD)
Strategy 3: Decarbonizing Transportation & Sustainable Land Use			
Play 3.1: Balance land use supply and enhance urban form	2030: 13% reduction in vehicle miles per person 2050: 25% reduction in vehicle miles per person	Modeled per service population VMT	Metropolitan Transportation Commission (MTC) or City DPW's Travel Demand Model
Play 3.2: Increase transportation options and support shared mobility			
Play 3.3: Increase zero-emission vehicles	2030: 20% of all vehicles on road are zero-emissions 2050: 75% of all vehicles on road are zero-emissions	Vehicle registrations by fuel type	Department of Motor Vehicles (DMV)
Strategy 4: Managing Resources Sustainably			
Play 4.1: Achieve Zero Waste goals for solid waste	2030: Reduce landfilled garbage to 1 lb per person per day 2050: Reduce landfilled garbage to 1 lb per person per day	Waste diversion rate	California Department of Resources, Recycling and Recovery (CalRecycle)
Play 4.2: Ensure resilience of water supply	Targets will be defined as per state requirement	Annual water consumption per capita relative to 2016 baseline	City of Sunnyvale Environmental Services Department (ESD)
Play 4.3: Enhance natural carbon sequestration capacity	Supports broader net carbon reductions	Net number of new trees added on public lands Acreage of land area treated by green stormwater infrastructure features	City of Sunnyvale Department of Public Works (DPW), CDD, and ESD

Play	Target	Metric	Metric Data Source
Play 4.4: Promote sustainable food choices	Supports broader emissions reductions	No defined metric	Not applicable
Strategy 5: Empowering Our Community			
Play 5.1: Enhance community awareness and engagement	Supports all other Plays	Social media engagement analytics Number of people participating in community engagement programs each year (e.g., CERT, Cool Blocks, etc.) Number of businesses engaged in CAP programs	City of Sunnyvale various departments and Office of City Manager (OCM)
Play 5.2: Track and share data and tools	Supports all other Plays	Annual GHG Inventory Number of people using online or mobile phone community engagement platforms (e.g., IGreenSunnyvale)	City of Sunnyvale ESD

The City can also track additional secondary metrics as listed in Table 11; while these metrics are not directly used to estimate GHG emissions, they indicate the performance of key programs that would be integral to the CAP.

Table 11. Secondary Metrics to Assess Progress

Metric	Data Source
Distributed local solar (kW) on all building types	Center for Sustainable Energy – California Solar Statistics
Number of residential units approved for voluntary Green Building Program incentives	City of Sunnyvale CDD
Total floor area (sqft) of commercial building space approved for voluntary Green Building Program incentives	City of Sunnyvale CDD
Electric vehicle charging infrastructure	DOE Alternative Fuels Data Center + direct communication with large businesses
Public transportation ridership	Caltrain + VTA ridership data
Bike or scooter share ridership	Lime ridership data
Percent of students using non-motorized transportation to school	City of Sunnyvale Department of Public Safety (DPS) – Safe Routes to School Program
Percent of commuters riding bicycles to work	American Community Survey 5-year estimates
Miles of bicycle lanes by class	City of Sunnyvale DPW
Train ridership	Caltrain annual ridership estimates
Percent of local water needs met by recycled water	City of Sunnyvale ESD
Waste disposed per capita	California Disposal Reporting System

At-a-Glance: Pathway to 2050

ATTACHMENT 4



Strategy 1: Promoting Clean Electricity

Play 1.1	Promote 100% clean electricity	2030 Target: 100% participation in clean electricity 2050 Target: 100% participation in clean electricity
Play 1.2	Increase local solar photovoltaics	2030 Target: 3% of load from local solar 2050 Target: 5% of load from local solar
Play 1.3	Increase electricity storage	2030 Target: 1% of electricity demand stored in batteries locally 2050 Target: 5% of electricity demand stored in batteries locally



Strategy 2: Decarbonizing Buildings

Play 2.1	Reduce energy consumption in existing buildings	2030 Target: 5% of existing homes and businesses receive deep energy retrofit 2050 Target: 30% of existing homes and businesses receive deep energy retrofit
Play 2.2	Support electrification of existing buildings	2030 Target: 20% of homes and businesses completely electrified 2050 Target: 50% of homes and businesses completely electrified
Play 2.3	Achieve all-electric new construction	2030 Target: 100% all-electric new buildings 2050 Target: 100% all-electric new buildings



Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Play 3.1	Balance land use supply and enhance urban form	2030 Target: 13% reduction in vehicle miles per person 2050 Target: 25% reduction in vehicle miles per person
Play 3.2	Increase transportation options and support shared mobility	
Play 3.3	Increase zero-emission vehicles	2030 Target: 20% of all vehicles on road are zero-emission vehicles 2050 Target: 75% of all vehicles on road are zero-emission vehicles



Strategy 4: Managing Resources Sustainably

Play 4.1	Achieve Zero Waste goals for solid waste	2030 Target: Reduce landfilled garbage to 1 lb per person per day 2050 Target: Reduce landfilled garbage to 1 lb per person per day
Play 4.2	Ensure resilience of water supply	Targets will be defined as per state requirement
Play 4.3	Enhance natural carbon sequestration capacity	Supports broader net carbon reductions
Play 4.4	Promote sustainable food choices	Supports broader emissions reductions



Strategy 5: Empowering Our Community

Play 5.1	Enhance community awareness and engagement	Supports all other Plays
Play 5.2	Track and share data and tools	Supports all other Plays



Strategy 6: Adapting to a Changing Climate

Play 6.1	Assess climate vulnerabilities for Sunnyvale	
Play 6.2	Protect shoreline area from sea level rise and coastal flooding	
Play 6.3	Strengthen community resiliency	

Game Plan 2022 At-a-Glance



Strategy 1: Promoting Clean Electricity

- 1.A Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing clean power and decarbonization programs.
- 1.B Collaborate with SVCE to target direct access customers to shift to 100% clean electricity.
- 1.C Research a mandatory solar roof ordinance for new commercial developments.
- 1.D Collaborate with SVCE to evaluate opportunities for energy storage to maximize utilization of local solar supply and to enhance resiliency.



Strategy 2: Decarbonizing Buildings

- 2.A Research energy disclosure and energy benchmarking requirements for commercial and multi-family residential buildings to encourage property owners and managers to invest in energy efficiency upgrades and building information systems.
- 2.B Advocate to regional providers of energy efficiency programs (such as Bay Area Regional Energy Network or BayREN, Silicon Valley Energy Watch or SVEW) that their offerings are more aggressively promoted to Sunnyvale residents and businesses.
- 2.C Develop a program to accelerate the adoption of heat pump water heaters and space heaters.
- 2.D Electrify municipal buildings upon rebuild or significant remodel, including the Civic Center.
- 2.E Evaluate code and permitting processes to streamline building electrification.
- 2.F Investigate the potential for implementing a differential Utility Use Tax that is at least revenue neutral, such that local taxes on electricity are lower than on natural gas, to incentivize electrification.
- 2.G Continue to incentivize energy efficient and high performance buildings through the Green Building Program updates.



Strategy 3: Decarbonizing Transportation & Sustainable Land Use

- 3.A Plan for additional housing, with the goal of diverse housing, to reduce long-distance commutes.
- 3.B Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.
- 3.C Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.
- 3.D Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors.
- 3.E Update and implement the Integrated Bicycle, Pedestrian and Safe Routes to School Plan to achieve a connected, safe and active network.
- 3.F Pilot and evaluate shared bicycle and scooter programs.
- 3.G Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.
- 3.H Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate.
- 3.I Monitor autonomous vehicle testing and deployment to inform proactive policy.
- 3.J Develop a Community Electric Vehicle Readiness and Infrastructure Plan.
- 3.K Promote and seek incentives for community adoption of electric vehicles.
- 3.L Electrify Municipal Fleet as vehicles are replaced and continue to seek incentives for electric vehicles and charging infrastructure.

Game Plan 2022 At-a-Glance



Strategy 4: Managing Resources Sustainably

- 4.A Implement and expand food scraps diversion programs to include additional businesses and multi-family residences.
- 4.B Consider solid waste collection and processing improvements to increase waste diversion away from landfills as a part of service provider and facility transition planning.
- 4.C Implement campaign for waste prevention.
- 4.D Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with new statewide requirements.
- 4.E Partner with Valley Water to evaluate opportunities to expand water reuse.
- 4.F Implement the City's Urban Forest Management Plan and continue to protect and expand tree canopy.
- 4.G Implement the City's Green Stormwater Infrastructure Plan.
- 4.H Promote consumer awareness of sustainable food choices.
- 4.I Work with large businesses to identify best practices for implementing local food gardens.



Strategy 5: Empowering Our Community

- 5.A Pilot a targeted grassroots community engagement strategy (e.g., Cool Blocks Program) to create stronger connections between neighbors to advance climate action and emergency preparedness.
- 5.B Evaluate opportunities for the City to provide online resources and tools for community and small business climate action (e.g., resource center for retrofit electrification, online tool or app to track individual carbon emissions).
- 5.C Create a stronger social media and web presence for Sunnyvale climate action.
- 5.D Implement the Sustainability Speaker Series.
- 5.E Pilot and evaluate a program for youth engagement on climate, building on current engagement with school classrooms and green teams.
- 5.F Build relationships with largest employers to collaborate on climate action, such as: (a) engaging employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects.
- 5.G Implement improvements for climate action data performance tracking and reporting progress to the public (e.g., community dashboard).
- 5.H Publish annual greenhouse gas (GHG) inventory.



Strategy 6: Adapting to a Changing Climate

- 6.A Review and summarize assessment products developed by the County's Silicon Valley 2.0 project and by the State.
- 6.B Participate in regional forums on climate vulnerabilities.
- 6.C Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.
- 6.D Identify shoreline protection solutions as part of Moffett Park Specific Plan update.
- 6.E Updating existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.
- 6.F Develop a community resiliency plan.

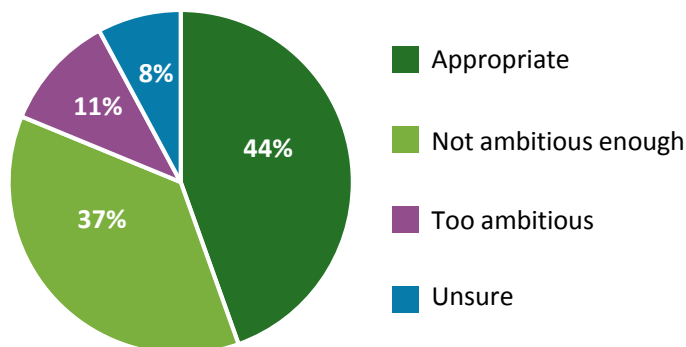
CLIMATE ACTION PLAYBOOK

Summary of Feedback from Public Review

Overview

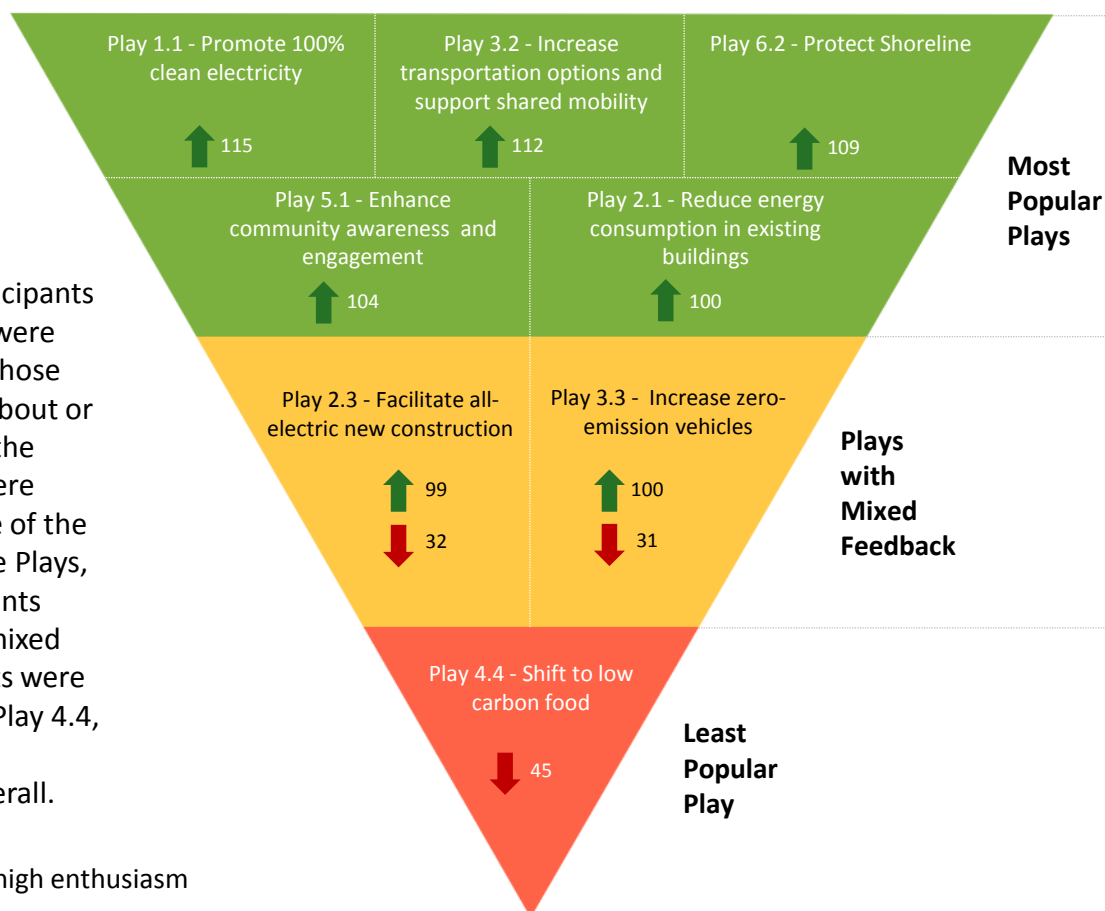
The Draft Climate Action Playbook was released on March 11, 2019, and public feedback was gathered through April 2019. Feedback was gathered online through Open City Hall, paper surveys, and at public meetings. 152 individuals completed surveys and 119 individuals attended seven public meetings, providing feedback on the general framework of the Playbook, the proposed targets, and the "Next Moves" (specific actions) in Game Plan 2022. All feedback was reviewed and changes were made to the Climate Action Playbook to reflect community sentiment.

Opinion of Long-Term Climate Targets



Feedback on Plays Summary

Survey and meeting participants indicated the Plays they were most excited about and those they were least excited about or wanted to remove from the Playbook. Participants were generally very supportive of the proposed Plays. For some Plays, like 2.3 and 3.3, participants showed strong support mixed with concern. Participants were least enthusiastic about Play 4.4, although it still had more supportive responses overall.



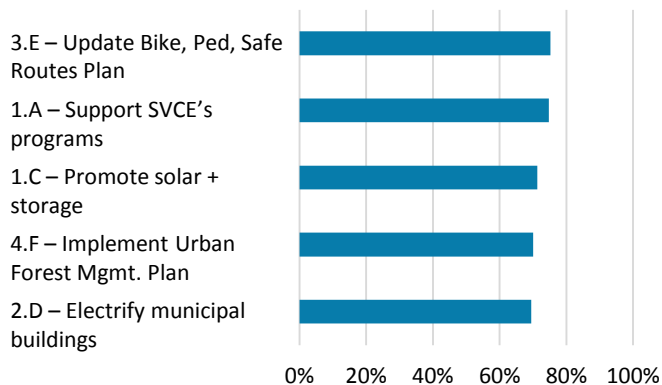
Number of votes with high enthusiasm
 Number of votes with low enthusiasm

Feedback on Moves

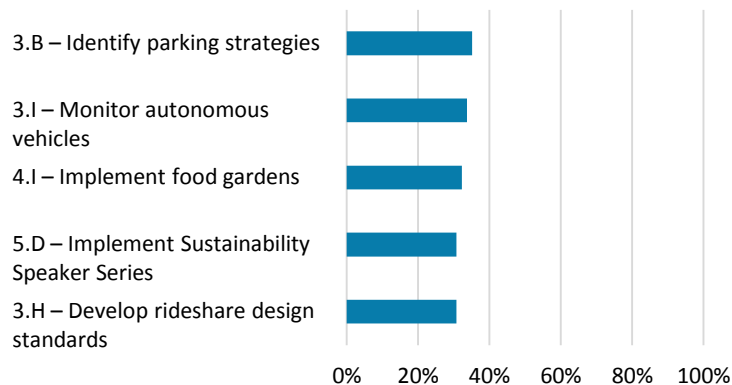
From Surveys

Survey participants ranked their enthusiasm on a High-Medium-Low scale for each Move in Game Plan 2022. Below are the five Moves that participants were most enthusiastic about and least enthusiastic about. Participants also expressed other ideas and concerns via written comments.

Most Enthusiasm



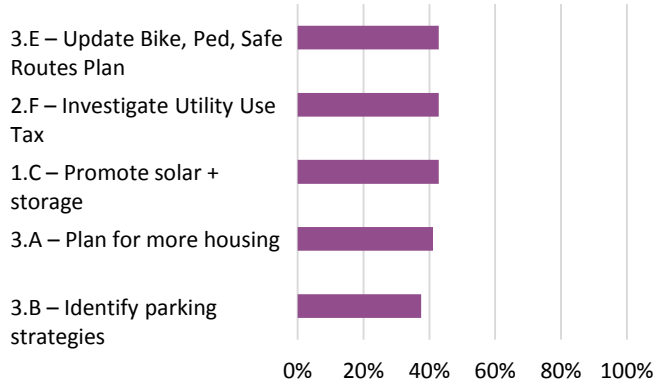
Least Enthusiasm



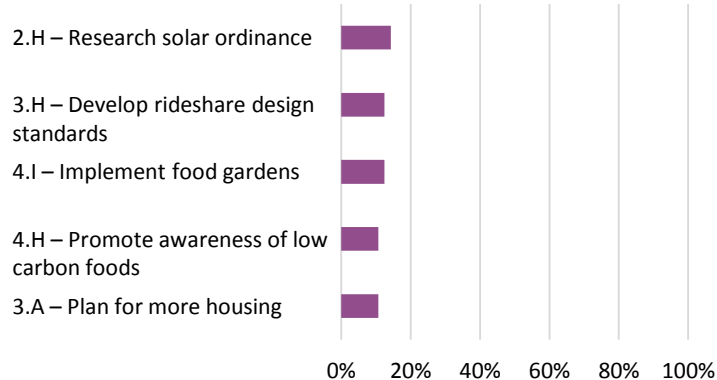
From Meeting Polls

Meeting attendees indicated which Moves in Game Plan 2022 they were most or least excited about by participating in a dot voting exercise. Below are the five Moves that participants were most excited about or least excited about and recommended removing. Note that Move 3.A appears in both lists. Participants also expressed other ideas and concerns via verbal and written comments.

Most Excitement



Most Concern/Remove



Summary of Feedback

Based on the feedback, the following changes were made to the Playbook:



Accelerated the target for Play 2.3 to achieve all-electric buildings sooner.



Adjusted transportation vehicle miles traveled (VMT) targets downward for Plays 3.1 and 3.2 to reflect a target that is challenging and attainable.



Created a new Play 1.3 to emphasize importance of expanding distributed electricity storage.



Simplified language for Zero Waste targets for Play 4.1 to be more meaningful to the community.



Adjusted language for action on sustainable food in Play 4.4 to emphasize consumer choice.

CLIMATE ACTION PLAYBOOK

COMPILATION OF FEEDBACK FROM PUBLIC REVIEW

March-April 2019

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Notes from Meetings	63
<i>Notes from Community Meeting</i>	64
<i>Notes from Focus Group: Developer Outreach Meeting</i>	78
<i>Notes from Focus Group: Business Outreach Meeting</i>	89
<i>Notes from Informal Meeting at the Rotary Club</i>	100
<i>Notes from Informal Meeting at the Unitarian Universalist Fellowship of Sunnyvale</i>	101

SUMMARY OF FEEDBACK FROM PUBLIC REVIEW

The Draft Climate Action Playbook was made available for public review on March 11, 2019 and feedback was collected through April 28, 2019. The document was posted online on the City's website at bit.ly/sunnyvaleplaybook, and hard copies were made available at City locations, including the Library and City Hall. Feedback was collected through these main methods:

1. Survey (administered online, via fillable PDFs, and hard copy)
2. Public Meetings
3. Informal meetings (i.e., presentations at meetings not organized by the City)

Online Survey

The online survey administered was a two part survey, where Part 1 included questions to gather feedback on the pathway to the 2050 target and Part 2 included questions to gather feedback for respondents who wished to delve deeper into the Game Plan 2022 (Next Moves for implementation in the next three years). The paper survey only included questions from Part 1, as it was designed to be shorter and gather feedback from audiences at events where respondents likely did not have the time to respond to both parts.

Public Meetings

During March and April, the following public meetings were held:

- CAP 2.0 Advisory Committee (CAC) Meeting
- General community meeting (open to all members of the public)
- Focus groups:
 - Businesses
 - Developers
- Joint Info Study Session for 3 Commissions (Sustainability, Planning, and Bicycle and Pedestrian)

Informal Meetings

Staff also presented the Playbook in informal meetings (i.e., not organized by the City), namely a service at the Universalist Unitarian Fellowship of Sunnyvale and a meeting of the Rotary Club.

These meetings were designed with the following interactive elements to gather feedback:

- **Live polling** using software that allowed meeting attendees to participate in a real-time poll using their mobile device; live polling was used to gather information on opinions of the overall Playbook, targets, and the Plays. This approach was used at the community meetings except the CAC meeting.
- **Dot voting exercise**, in which meeting participants were provided with two colors of dots that they could place next to "Next Moves" on poster displays to indicate those that they were most excited about or most concerned about (i.e., those Moves they recommend removing from the Playbook). This approach was used at all community meetings.
- **Show of hands poll**, in which meeting participants were asked to raise their hand to vote on multiple choice questions, similar to those asked in the Live Polling. This approach was used at the Informal Meetings where time was limited.

The following pages summarize the findings in charts and graphs. A full compilation of all raw data from the public review process is begins on page 13.

Community Engagement Summary

Table 1. Meeting Participation

Public Meetings	Attendees±	Participants by Poll Type		
		Live Poll	Dots	Informal
CAP 2.0 Advisory Committee (CAC)	18	-	9	-
Community	17	12	17*	-
Joint Info Study Session for 3 Commissions	24	20	24*	-
Focus Group: Developer	3	3	3	-
Focus Group: Business	4	4	3	-
Informal Meeting: Unitarian Universalist Fellowship	27	-	-	27
Informal Meeting: Rotary Club	26	-	-	26
TOTAL	119	39	56	53

**Indicates estimated number of participants, as attendees may have left early or arrived late*

± The total number of attendees represents the number of individuals that attended across all meetings, without distinguishing community members that may have attended more than one meeting.

Table 2. Survey Responses

Surveys	Responses
Online	125
PDF	6
Hard Copy	21
TOTAL	152

Table 3. Outreach Summary

Events	Number of People Reached
Google	205
Juniper	70
Farmer's Market	91
Mobile Farmer's Market	20
Home Buyers	12
Fit N Fun	211
Senior Center	1
TOTAL	610

Public Review Feedback Overview

The following figures and tables summarize the data gathered during the public review process from 152 survey respondents and 119 meeting attendees. For each figure and table, a sample size or n number is provided. Note that this n number reflects the number of individuals responding to that specific question. As not all survey respondents or meeting attendees responded to every question, the n number varies across the figures and tables provided below.

Figure 1. Survey Respondents

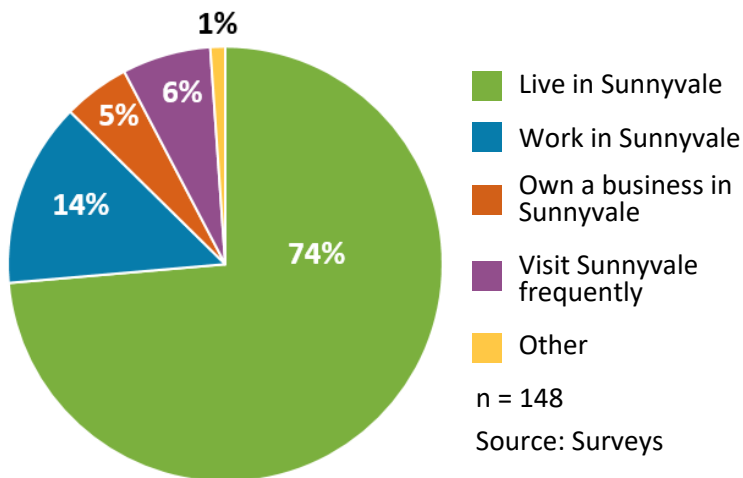


Figure 2. Opinion of Local Climate Action

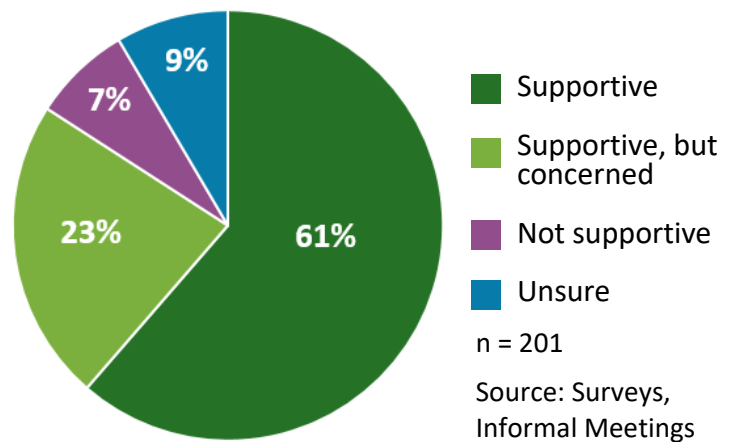


Figure 3. Survey Completion

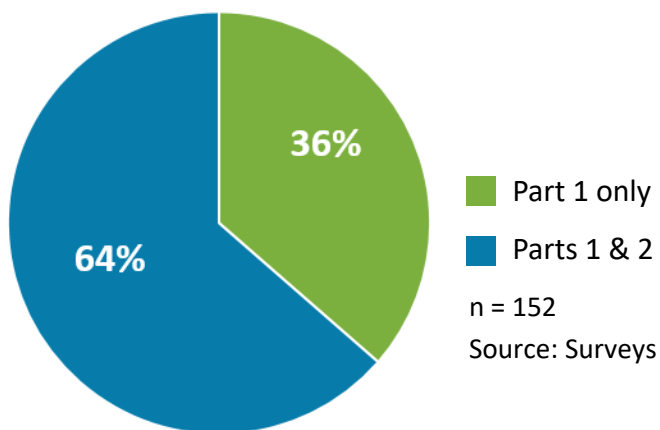
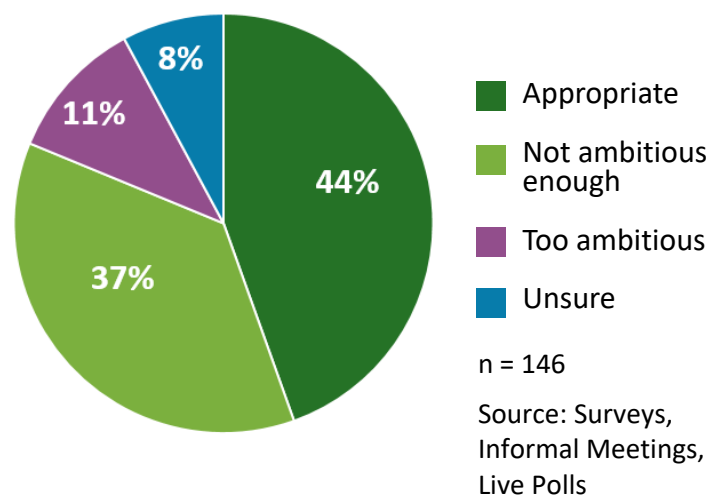


Figure 4. Opinion on Sunnyvale's Proposed 2050 Target



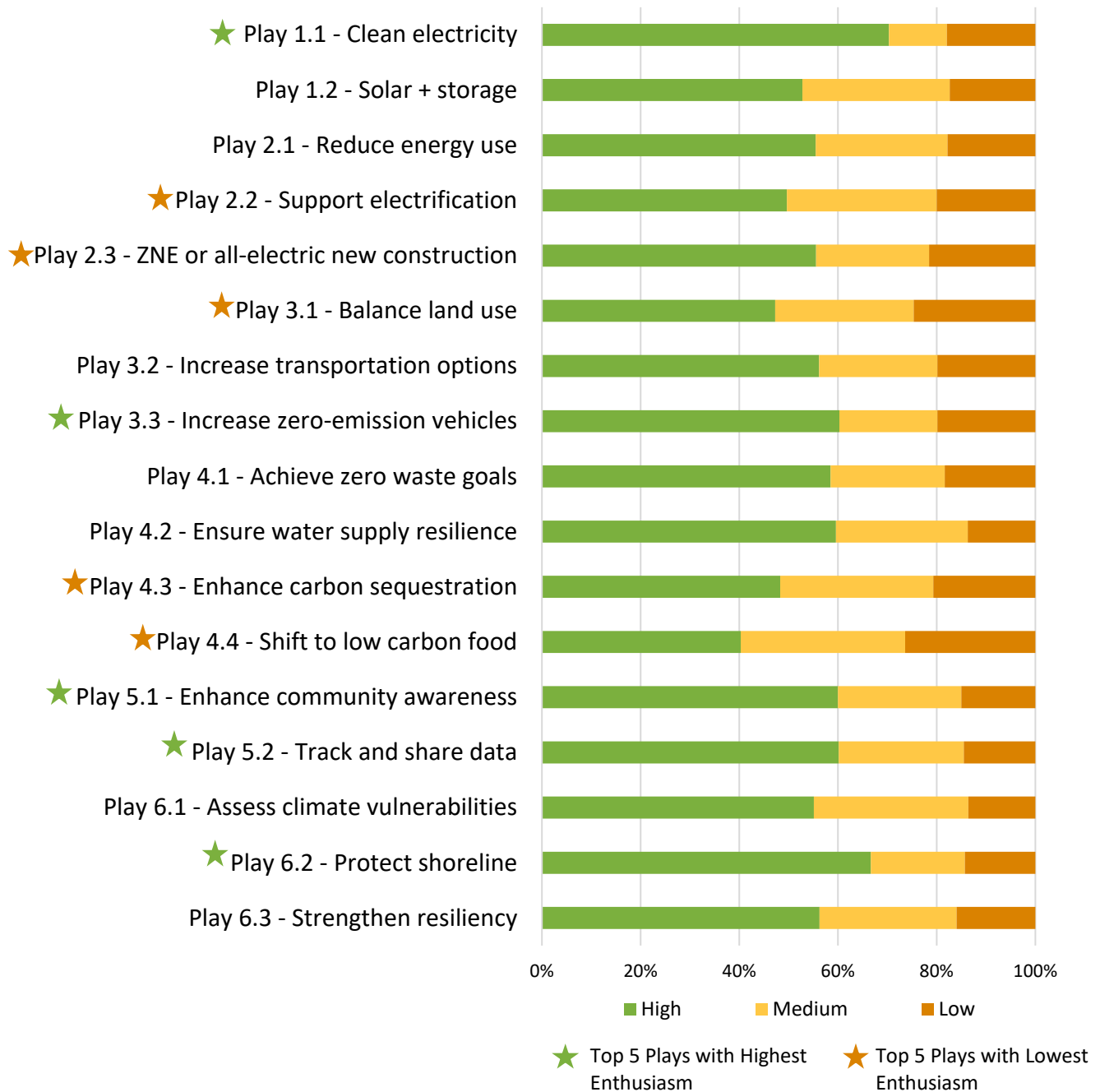
Feedback on Plays

Table 4. Play Ratings Overview

Plays		No. of Votes from Surveys			No. of Votes from Live Polls	
		n = 152			n = 39	
		High	Medium	Low	Excited	Remove
	Play 1.1 - Promote 100% clean electricity	102	17	26	13	0
	Play 1.2 - Increase distributed solar photovoltaics and storage	76	43	25	14	0
	Play 2.1 - Reduce energy consumption in existing buildings	81	39	26	19	0
	Play 2.2 - Support electrification of existing buildings	72	44	29	21	0
↔	Play 2.3 - Zero Net Energy and all-electric new construction	80	33	31	19	1
	Play 3.1 - Balance land use supply and enhance urban form	69	41	36	11	1
	Play 3.2 - Increase transportation options and support shared mobility	82	35	29	30	0
↔	Play 3.3 - Increase zero-emission vehicles	88	29	29	12	2
	Play 4.1 - Achieve zero waste goals	86	34	27	9	0
	Play 4.2 - Ensure resilience of water supply	87	39	20	10	0
	Play 4.3 - Enhance natural carbon sequestration capacity	70	45	30	10	1
↓	Play 4.4 - Shift to low carbon food	58	48	38	9	7
	Play 5.1 - Enhance community awareness and engagement	84	35	21	20	0
	Play 5.2 - Track and share data and tools	83	35	20	13	1
	Play 6.1 - Assess climate vulnerabilities for Sunnyvale	81	46	20	9	0
	Play 6.2 - Protect shoreline area from sea level rise and coastal flooding	98	28	21	11	1
	Play 6.3 - Strengthen community resiliency	81	40	23	7	1

■ Top 5 Highest Enthusiasm
 ■ Top 4 Lowest Enthusiasm
 ■ Top 5 Most Excited About
 ■ Top 2 Least Excited About/ Remove

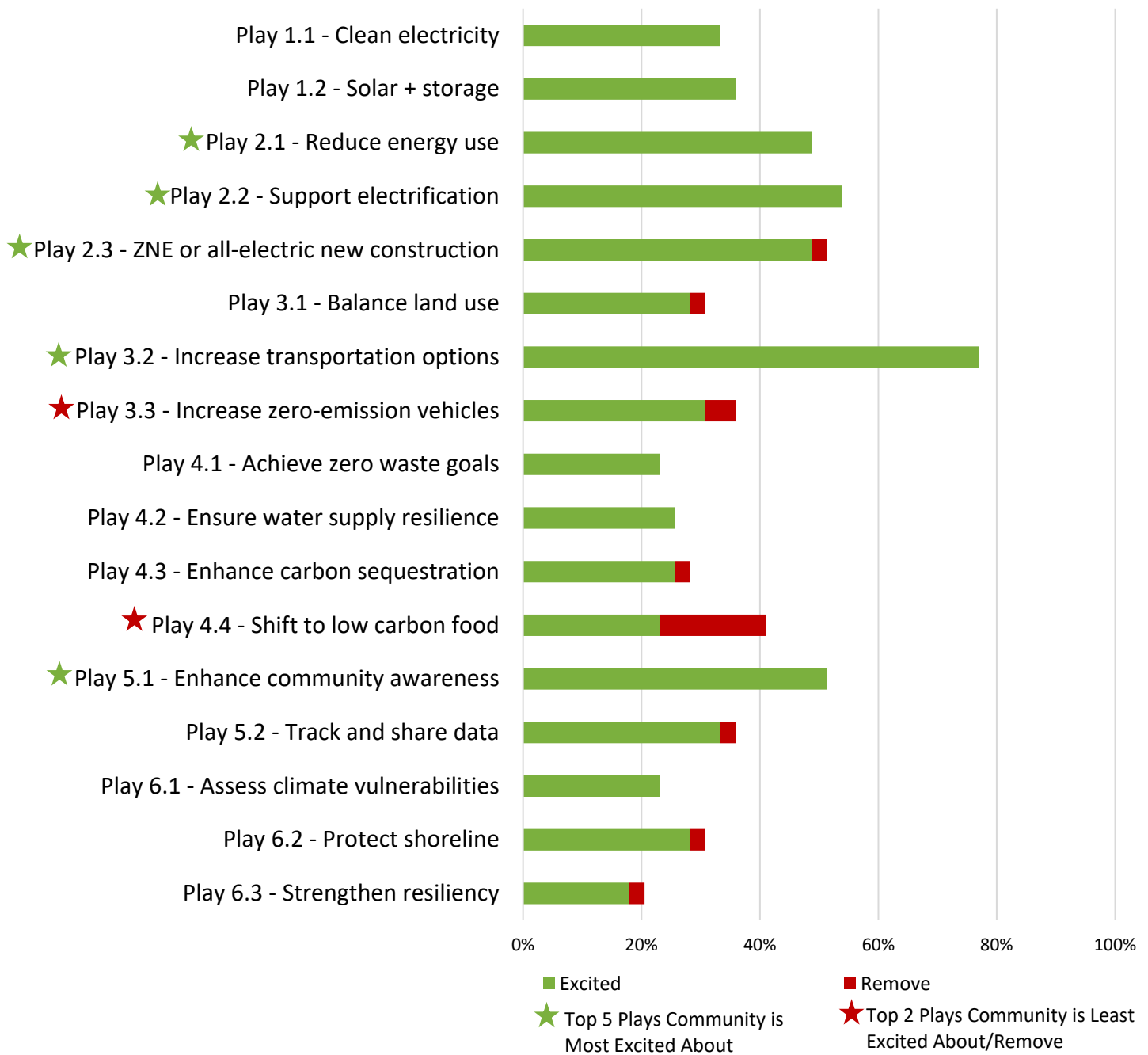
↔ Top Plays with Mixed Feedback
 ↓ Top Plays with Lowest Enthusiasm/Remove

Figure 5. Enthusiasm Ratings of Plays

n = 152

Source: Surveys

Note: The above chart use percentages to rank the Plays. In contrast, Table 4 uses absolute values to rank the Plays. For this reason, the Play rankings in the above chart may not exactly match those presented in Table 4.

Figure 6. Excited vs. Remove Ratings of Plays

n = 39

Source: Live Polls

Feedback on Moves

Table 5. Move Ratings Overview

Moves		No. of Votes from Surveys n = 96			No. of Votes from Dot Voting n = 56	
		High	Medium	Low	Excited	Remove
↑	Move 1.A - Support SVCE's programs	69	12	12	16	1
↔	Move 1.B - Target direct access customers	64	15	14	14	4
↑	Move 1.C - Promote solar + storage	67	13	14	23	1
	Move 2.A - Research energy benchmarking	52	24	13	18	0
	Move 2.B - Advocate energy efficiency <u>pgms</u>	37	30	22	1	3
	Move 2.C - Accelerate adoption of heat pumps	50	26	16	21	0
	Move 2.D - Electrify municipal buildings	65	14	15	11	0
↑	Move 2.E - Streamline building electrification	57	20	14	16	1
	Move 2.F - Investigate Utility Use Tax	48	23	22	24	0
	Move 2.G - Implement Green Building Pgm	62	20	9	14	1
	Move 2.H - Research solar ordinance	51	24	18	13	8
↔	Move 3.A - Plan for more housing	47	26	19	23	6
↔	Move 3.B - Identify parking strategies	38	20	32	21	4
	Move 3.C - Enhance TDM Pgm	41	26	23	11	0
↑	Move 3.D - Improve transit service	61	16	14	16	0
↑	Move 3.E - Update Bike, Ped, Safe Routes Plan	69	10	13	24	0
	Move 3.F - Pilot bike/scooter <u>pgms</u>	36	28	26	4	1
	Move 3.G - Pilot Peery Park shuttle	34	31	24	7	2
↓	Move 3.H - Develop rideshare design standards	34	28	28	5	7
	Move 3.I - Monitor autonomous vehicles	27	33	31	7	3
	Move 3.J - Develop community EV plan	55	14	20	15	0
	Move 3.K - Incentivize EV adoption	52	18	21	12	0
	Move 3.L - Electrify municipal fleet	56	18	16	11	0

■ Top 10 Highest Enthusiasm

■ Top 11 Most Excited

↑ Top Moves with Highest
Enthusiasm/Excitement

■ Top 10 Lowest Enthusiasm

■ Top 8 Least Excited About/Remove

↓ Top Moves with Lowest
Enthusiasm/Remove

↔ Top Moves with Mixed
Feedback

Table 5 is continued on next page...

Table 5. Move Ratings Overview (continued)

Moves		No. of Votes from Surveys			No. of Votes from Dot Voting	
		n = 96			n = 56	
		High	Medium	Low	Excited	Remove
	Move 4.A - Expand food scraps program	45	28	18	10	5
	Move 4.B - Improve waste collection/processing	50	29	11	9	0
	Move 4.C - Implement waste prevention campaign	45	32	12	7	2
	Move 4.D - Incentivize water conservation	45	28	16	11	0
	Move 4.E - Expand water reuse	59	23	6	12	1
	Move 4.F - Implement Urban Forest Mgmt. Plan	63	13	13	14	1
	Move 4.G - Implement Green Stormwater Infrastructure Plan	46	27	14	4	2
↓	Move 4.H - Promote awareness of low carbon foods	42	24	24	10	6
↓	Move 4.I - Implement food gardens	38	23	28	5	7
	Move 5.A - Pilot grassroots engagement	35	33	24	11	1
	Move 5.B - Develop online resources	42	31	17	7	1
	Move 5.C - Create social media/web	31	34	26	6	2
	Move 5.D - Implement Sustainability Speaker Series	22	40	28	6	1
	Move 5.E - Develop youth engagement pgm	50	22	19	8	0
	Move 5.F - Engage large employers	55	17	19	16	2
	Move 5.G - Improve data tracking & reporting	48	25	15	6	1
	Move 5.H - Publish annual GHG inventory	49	25	15	5	0
	Move 6.A - Review vulnerability assessments	38	31	18	1	0
	Move 6.B - Participate in regional vulnerability	36	26	23	4	0
	Move 6.C - Advance shoreline protection	55	21	13	8	0
	Move 6.D - MPSP shoreline protection	52	20	15	8	0
	Move 6.E - Incorporate resilience in emergency plans	45	25	16	7	0
	Move 6.F - Develop a community resiliency plan	43	24	20	8	3








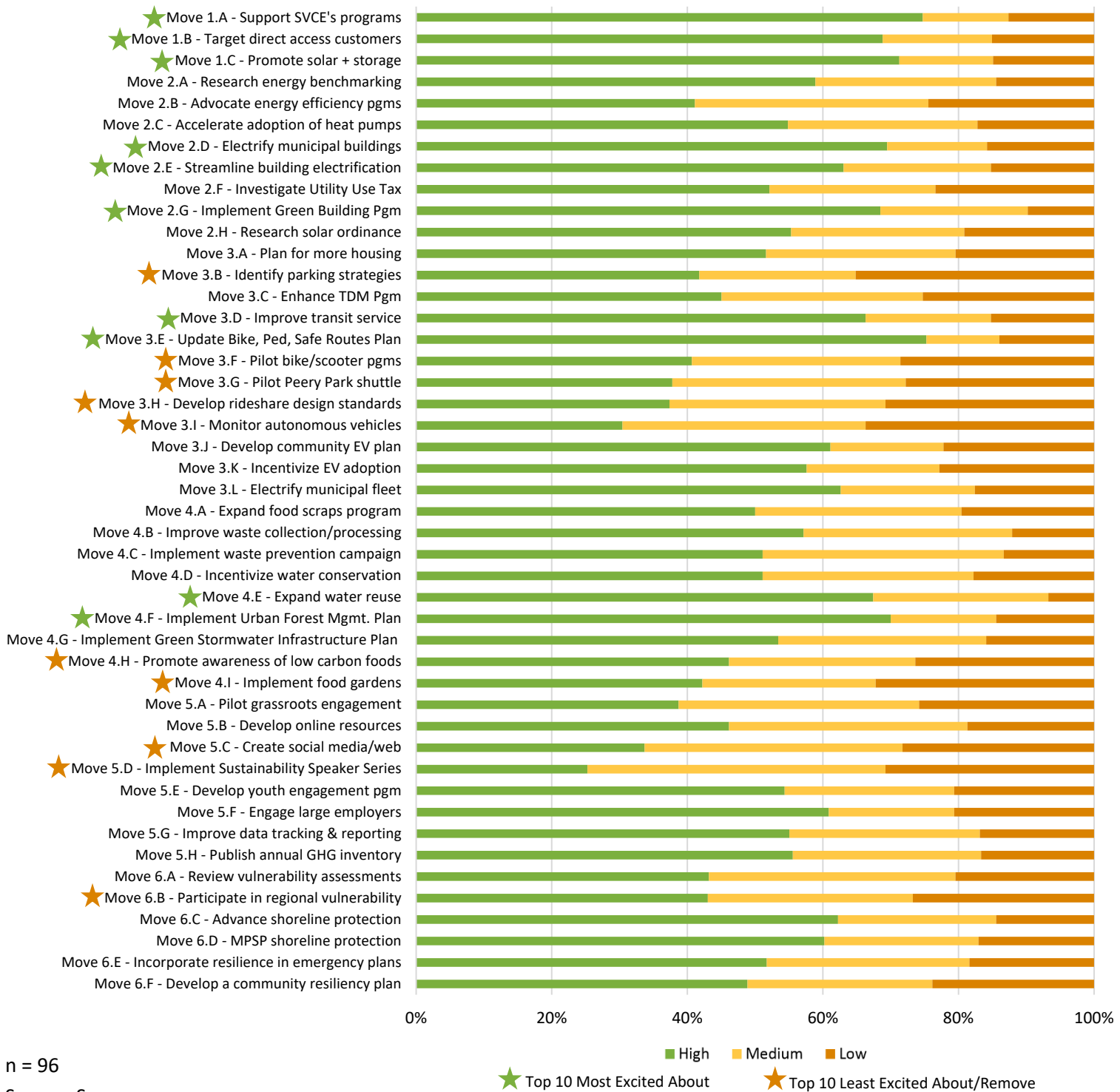
-  Top 10 Highest Enthusiasm  Top 10 Lowest Enthusiasm
 Top 11 Most Excited  Top 8 Least Excited About/Remove
 Top Moves with Highest Enthusiasm/Excitement  Top Moves with Lowest Enthusiasm/Remove
 Top Moves with Mixed Feedback

Figure 7. Enthusiasm Ratings of Moves

n = 96

Source: Surveys

Note: The above chart use percentages to rank the Moves. In contrast, Table 5 uses absolute values to rank the Moves. For this reason, the Move rankings in the above chart may not exactly match those presented in Table 5.

Figure 8. Excited vs. Remove Move Ratings



n = 56

Source: Dot Voting

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Open City Hall Summary of Responses

As of May 22, 2019, 2:06 PM, this forum had:

Attendees: 262
 Responses: 152
 Hours of Public Comment: 7.6

Topic Start

March 11, 2019, 4:30 PM

Topic End

April 28, 2019, 11:59 AM

QUESTION 1

1. Tell us about yourself. (Please check all that apply.)

		%	Count
I live in Sunnyvale.		90.5%	134
I work in Sunnyvale.		16.9%	25
I own a business in Sunnyvale.		6.1%	9
I frequently visit Sunnyvale.		8.1%	12
Other		3.4%	5

QUESTION 2

2. What do you think about the City's current efforts to address climate change locally?

		%	Count
I am supportive		52.7%	78
I am supportive, but have concerns		27.7%	41
I am not supportive		9.5%	14
Unsure		10.1%	15

Climate Action Playbook

Gear up for game day with Sunnyvale's Climate Action Playbook!

QUESTION 3

Any additional comments about the City's efforts to address climate change?

Answered	52
Skipped	100

QUESTION 4

3. What do you think of Sunnyvale's proposal to meet the State's long-term target of reducing emissions 80% below 1990 levels by 2050 (carbon neutrality)?

		%	Count
Target is not ambitious enough		36.3%	53
Target is appropriate		41.8%	61
Target is too ambitious		16.4%	24
Unsure		5.5%	8

QUESTION 5

Any additional comments on the City's proposed long term target?

Answered	42
Skipped	110

QUESTION 6

4a. How would you rate your enthusiasm for the Plays in Strategy 1?**Play 1.1**

		%	Count
High		69.7%	101
Medium		12.4%	18

Climate Action Playbook

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		%	Count
Low		17.9%	26

Play 1.2

		%	Count
High		52.4%	76
Medium		29.7%	43
Low		17.2%	25

QUESTION 7

4b. How would you rate your enthusiasm for the Plays in Strategy 2?**Play 2.1**

		%	Count
High		55.5%	81
Medium		26.7%	39
Low		17.8%	26

Play 2.2

		%	Count
High		49.3%	72
Medium		30.1%	44
Low		19.9%	29

Play 2.3

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		%	Count
High		55.5%	81
Medium		21.9%	32
Low		21.2%	31

QUESTION 8

4c. How would you rate your enthusiasm for the Plays in Strategy 3?**Play 3.1**

		%	Count
High		47.3%	69
Medium		28.1%	41
Low		24.7%	36

Play 3.2

		%	Count
High		55.5%	81
Medium		24.7%	36
Low		19.9%	29

Play 3.3

		%	Count
High		60.3%	88
Medium		19.9%	29
Low		19.9%	29

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QUESTION 9

4d. How would you rate your enthusiasm on the Plays for Strategy 4?**Play 4.1**

		%	Count
High		57.8%	85
Medium		23.8%	35
Low		18.4%	27

Play 4.2

		%	Count
High		59.2%	87
Medium		26.5%	39
Low		13.6%	20

Play 4.3

		%	Count
High		47.6%	70
Medium		30.6%	45
Low		20.4%	30

Play 4.4

		%	Count
High		39.5%	58
Medium		32.7%	48
Low		25.9%	38

Climate Action Playbook

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QUESTION 10

4e. How would you rate your enthusiasm for the Plays in Strategy 5?**Play 5.1**

		%	Count
High		60.0%	84
Medium		25.0%	35
Low		15.0%	21

Play 5.2

		%	Count
High		59.3%	83
Medium		25.0%	35
Low		14.3%	20

QUESTION 11

4f. How would you rate your enthusiasm for the Plays in Strategy 6?**Play 6.1**

		%	Count
High		55.8%	82
Medium		30.6%	45
Low		13.6%	20

Play 6.2

		%	Count
High		66.0%	97

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		%	Count
Medium		19.7%	29
Low		14.3%	21

Play 6.3

		%	Count
High		55.1%	81
Medium		27.2%	40
Low		15.6%	23

QUESTION 12

5. Are there any other Plays that you think are missing from the Draft Playbook?

Answered	45
Skipped	107

QUESTION 13

Any additional comments on the Plays?

Answered	49
Skipped	103

QUESTION 14

6. This concludes Part 1 of the survey. Thank you for your input. Would you like to go to Part 2 to provide more feedback on the Playbook?

		%	Count
Yes. Please take me to Part 2 to provide more feedback.		63.4%	90

Climate Action Playbook

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		%	Count
No thanks. I don't want to provide more feedback.		36.6%	52

QUESTION 15

If you are not continuing the survey, is there anything else you want to add about the Draft Playbook?

Answered	20
Skipped	132

QUESTION 16

7. How would you rate your enthusiasm for the Moves in Strategy 1?**Move 1.A – Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing clean power and decarbonization programs.**

		%	Count
High		74.7%	71
Medium		12.6%	12
Low		12.6%	12

Move 1.B – Collaborate with SVCE to target direct access customers to shift to 100% clean electricity.

		%	Count
High		67.4%	64
Medium		15.8%	15
Low		14.7%	14

Move 1.C – Collaborate with SVCE to evaluate opportunities for energy storage to maximize utilization of local solar supply.

Climate Action Playbook

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		%	Count
High		70.5%	67
Medium		13.7%	13
Low		14.7%	14

QUESTION 17

Any additional comments on the Moves in Strategy 1?

Answered	20
Skipped	132

QUESTION 18

8. How would you rate your enthusiasm for the Moves in Strategy 2?

Move 2.A – Research energy disclosure and energy benchmarking requirements for commercial and multi-family residential buildings to encourage property owners and managers to invest in energy efficiency upgrades and building information systems.

		%	Count
High		55.8%	53
Medium		25.3%	24
Low		13.7%	13

Move 2.B – Advocate to regional providers of energy efficiency programs (such as Bay Area Regional Energy Network or BayREN, Silicon Valley Energy Watch or SVEW) that their offerings are more aggressively promoted to Sunnyvale residents and businesses.

		%	Count
High		37.9%	36
Medium		33.7%	32

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		%	Count
Low		23.2%	22

Move 2.C – Develop a program to accelerate the adoption of heat pump water heaters and space heaters.

		%	Count
High		53.7%	51
Medium		27.4%	26
Low		16.8%	16

Move 2.D – Electrify municipal buildings upon rebuild or significant remodel, including the Civic Center.

		%	Count
High		69.5%	66
Medium		14.7%	14
Low		15.8%	15

Move 2.E – Evaluate code and permitting processes to streamline building electrification.

		%	Count
High		61.1%	58
Medium		21.1%	20
Low		14.7%	14

Move 2.F – Investigate the potential for implementing a differential Utility Use Tax that is at least revenue neutral, such that local taxes on electricity are lower than on natural gas, to incentivize electrification.

		%	Count
High		52.6%	50
Medium		23.2%	22

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		%	Count
Low		23.2%	22

Move 2.G – Continue to incentivize energy efficient and high performance buildings through the Green Building Program updates.

		%	Count
High		66.3%	63
Medium		21.1%	20
Low		9.5%	9

Move 2.H – Research a mandatory solar roof ordinance for new commercial developments.

		%	Count
High		54.7%	52
Medium		25.3%	24
Low		18.9%	18

QUESTION 19

Any additional comments on the Moves in Strategy 2?

Answered	28
Skipped	124

QUESTION 20

9. How would you rate your enthusiasm for the Moves in Strategy 3?**Move 3.A – Plan for additional housing, with the goal of diverse housing, to reduce long-distance commutes.**

		%	Count
High		51.6%	48

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		%	Count
Medium		28.0%	26
Low		20.4%	19

Move 3.B – Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.

		%	Count
High		40.9%	38
Medium		22.6%	21
Low		34.4%	32

Move 3.C – Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.

		%	Count
High		44.1%	41
Medium		29.0%	27
Low		24.7%	23

Move 3.D – Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors.

		%	Count
High		64.5%	60
Medium		19.4%	18
Low		15.1%	14

Move 3.E – Update and implement the Integrated Bicycle, Pedestrian and Safe Routes to School Plan to achieve a connected, safe and active network.

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**Move 3.F – Pilot and evaluate shared bicycle and scooter programs.****Move 3.G – Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.****Move 3.H – Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate.****Move 3.I – Monitor autonomous vehicle testing and deployment to inform proactive policy.**

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**Move 3.J – Develop a Community Electric Vehicle Readiness and Infrastructure Plan.****Move 3.K – Promote and seek incentives for community adoption of electric vehicles.****Move 3.L – Electrify Municipal Fleet as vehicles are replaced and continue to seek incentives for electric vehicles and charging infrastructure.**

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Any additional comments on the Moves in Strategy 3?

Answered	41
Skipped	111

QUESTION 22

10. How would you rate your enthusiasm for the Moves in Strategy 4?**Move 4.A – Implement and expand food scraps diversion programs to include additional businesses and multi-family residents.**

		%	Count
High		49.5%	46
Medium		30.1%	28
Low		19.4%	18

Move 4.B – Consider solid waste collection and processing improvements to increase waste diversion away from landfills as a part of service provider and facility transition planning.

		%	Count
High		55.9%	52
Medium		30.1%	28
Low		11.8%	11

Move 4.C – Implement campaign for waste prevention.

		%	Count
High		49.5%	46
Medium		34.4%	32
Low		12.9%	12

Move 4.D – Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with new statewide requirements.

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**Move 4.E – Partner with Valley Water to evaluate opportunities to expand water reuse.****Move 4.F – Implement the City's Urban Forest Management Plan and continue to protect and expand tree canopy.****Move 4.G – Implement the City's Green Stormwater Infrastructure Plan.****Move 4.H – Promote consumer awareness of low carbon foods.**

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**Move 4.I – Work with large businesses to identify best practices for implementing local food gardens.**

QUESTION 23

Any additional comments on the Moves in Strategy 4?

Answered	36
Skipped	116

QUESTION 24

11. How would you rate your enthusiasm for the Moves in Strategy 5?**Move 5.A - Pilot a targeted grassroots community engagement strategy (e.g., Cool Blocks Program) to create stronger connections between neighbors to advance climate action and emergency preparedness.**

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Move 5.B - Evaluate opportunities for the City to provide online resources and tools for community and small business climate action (e.g., resource center for retrofit electrification, online tool or app to track individual carbon emissions).

		%	Count
High		45.2%	42
Medium		34.4%	32
Low		18.3%	17

Move 5.C - Create a stronger social media and web presence for Sunnyvale climate action.

		%	Count
High		34.4%	32
Medium		36.6%	34
Low		28.0%	26

Move 5.D - Implement the Sustainability Speaker Series.

		%	Count
High		24.7%	23
Medium		43.0%	40
Low		30.1%	28

Move 5.E - Evaluate and pilot a program for youth engagement on climate, building on current engagement with school classrooms and green teams.

		%	Count
High		53.8%	50
Medium		24.7%	23
Low		20.4%	19

Move 5.F - Build relationships with largest employers to collaborate on climate action, such as: (a) engaging

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employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects.

		%	Count
High		60.2%	56
Medium		18.3%	17
Low		20.4%	19

Move 5.G - Implement improvements for climate action data performance tracking and reporting progress to the public (e.g., community dashboard).

		%	Count
High		52.7%	49
Medium		26.9%	25
Low		16.1%	15

Move 5.H - Publish annual greenhouse gas (GHG) inventory.

		%	Count
High		53.8%	50
Medium		26.9%	25
Low		16.1%	15

QUESTION 25

Any additional comments on the Moves in Strategy 5?

Answered	20
Skipped	132

QUESTION 26

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12. How would you rate your enthusiasm for the Moves in Strategy 6?**Move 6.A - Review and summarize assessment products developed by the County's Silicon Valley 2.0 project and by the State.****Move 6.B - Participate in regional forums on climate vulnerability and adaptation.****Move 6.C - Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.****Move 6.D - Identify shoreline protection solutions as part of Moffett Park Specific Plan update.**

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Move 6.E - Update existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.**Move 6.F - Develop a community resiliency plan.**

QUESTION 27

Any additional comments on the Moves in Strategy 6?

Answered	14
Skipped	138

QUESTION 28

13. Would you like to share any final thoughts about the Draft Playbook?

Answered	31
Skipped	121

WRITTEN COMMENTS FROM OPEN CITY HALL SURVEYS

The following written comments were provided by survey respondents via the Open City Hall survey. Only questions that allowed an opportunity for survey respondents to type in their comments are included below.

2. What do you think about the City's current efforts to address climate change locally?

Any additional comments about the City's efforts to address climate change?

- I'm not convinced you are concerned about issues I have raised for years like more pedestrian zones, shuttle service for us, a gazillion Apple and Google shuttles and buses running amock.
- The metaphorical use of "Playbook" may suggest that climate change isn't a serious problem. I'd like to see the City's publications state the seriousness of the challenges face by city government, residents and the Earth.
- There is NOTHING the City can do against the..... Sun
- I'm concerned that perhaps not all easy ways to address climate change have been thought about. For example reducing the use of paper: We get pounds and pounds of unsolicited mail that go directly without reading to recycling.
- To imagine that we will have 25% gas driven cars in 2050 seems quite bizarre.
- charge pollution tax on users of devided that burn fossil fuel and contributes to pollution. Place air pollutoin tax on Caltrain (diesel engines)
- Gone too far and doing things couner to like increased housing that causes incerased traffic, noise, polition, waste.
- I do not want to ballon the climate change action to be another bureaucratic forum that spends precious tax dollars in the wring priority
- I really appreciate your focus on this critical issue
- limit population
- Security as a means to address climate change. Example: I bought my first new commuter bike to drive less, and on my first experience riding/parking it at a local business (ironically right in front where many people can see it) someone tried to steal it. Thieves got some components, went through bags. Looked like they did not have enough time for more. Had the bike been in a less visible place while I was inside studying, it most likely would have been gone when I returned. My roommate a couple years ago had the same thing happen when parking her brand new bike at Sunnyvale Caltrain. It was stolen on the first day. People will be less apt to bike if they think their bike will be stolen shortly after they buy it. I reported to police and that business. Now I in some cases I drive when I should bike because I don't feel my bike will be safe. Else I park my bike where I can see it at all times or only for a short duration. I suggest more bike racks where cyclists can see their bikes, especially in dark (such as in front of local coffee shops in morning), more security cameras, patrols.
- I think the goal is to avoid inconvenience to and sacrifice by people. We'll never get there that way, in my opinion.

- Given the magnitude of the climate problem, it will be important to focus additional resources in this area.
- I am pleased that Sunnyvale is taking an active role in addressing climate change
- I believe we should be more aggressive about the goals.
- BOTH Climate Action 1.0 AND 2.0 have essentially ignored the huge role that the City's urban forest can play here by just saying "increase the urban forest" without establishing any quantitative goals like "plant 1000 trees" yearly for ten years starting October 1, 2019. Without specific goals, the City's Urban Forest has LOST hundreds of street trees and commercial zoned trees such that the City now has LESS coverage than noted in the last survey in 2008.
- I don't want to live in a city that is going to take these draconian measures. This whole thing is a poor idea and a waste of time.
- I applaud efforts to move aggressively! Leadership on climate action must come from cities and states, given the political realities of our country.
- The city does not address much easier issues such as traffic safety, speeding, etc, which makes me question the feasibility of harder goals.
- Science has shown that climate change is not a real issue. Pollution causes problems, but to claim globally warming, cooling or climate change, there is no scientific proof that stands up. The things we are seeing are things that we have seen over time before.
- I am not aware of the city's initiatives to address climate change.
- Not doing enough in these area: 1 Recycling of all types of recyclable plastic. 2 To encourage products come in low cost recyclable containers by making producers bear the cost not Sunnyvale residents. 3 To make the roads more bicycle/pedestrian friendly.
- I applaud efforts to move aggressively! Leadership on climate action must come from cities and states, given the political realities of our country.
- Seems like the City undershot with the original plan since it was achieved so quickly. Glad to see this was revisited and and updated very quickly.
- This is a great update to the original CAP 1.0. I hope to see all departments participating in the "Next Moves" and strong accountability to ensure the Next Moves are completed within the next three years.
- Transportation is too weak.

3. What do you think of Sunnyvale's proposal to meet the State's long-term target of reducing emissions 80% below 1990 levels by 2050 (carbon neutrality)?

Any additional comments on the City's proposed long term target?

- If we're ahead of schedule it shows the people want to achieve faster/steeper reductions than currently planned.
- California's Climate Change plans are ridiculous. Moving away from carbon based fuels towards electricity without developing electrical supply safely and adequately, is ridiculous and dangerous. Just heating houses with electricity will put an incredible load on our power supplies.

Electrical vehicles will do likewise. WHERE IS ALL THIS ELECTRICITY GOING TO COME FROM? We can SUPPLEMENT our energy supplies with renewable energy but it is not adequate to power the state. California's plan to combat climate change will destroy the state and do nothing to affect climate change.

- Nobody's target is ambitious enough! North Bayshore will be underwater by 2150, 2200 at the latest.
- My fears are that the devastating effects of climate change are accelerating, can we be nimble enough to update the CAP if we only approach the evaluation every 5 years? Will we be able to incorporate any breakthrough tech quickly? In addition, this edition of the CAP does not meet the Governor's directive (?) to achieve the outcome in 2045 that we have for 2050. Most of the scientific reporting I see says we have 11 years to reduce emissions to avoid tipping point, are we being aggressive enough??
- Reach 80% by 2045 to be in line with newest State standards
- Totally unscientific and based on economically unsound principles. This may make the environmental zealots feel good, but will cost residents and businesses dearly with limited global impact.
- Only chose 'unsure' because "Some targets, not all, are misguided" was not an option
- Weather related events around the globe keep pointing to climate change effects are happening now, and we are already way behind where we need to be to address the problem. It feels like the City does not want to make the tough decisions now and keeps kicking the can down the road.
- You will no impact on what happens in 2050. Zero.
- I appreciate that staff has looked down the road to our mid-century target and put us on the track to get there by adopting a more ambitious 2030 target than the State. However, we already have too much carbon in the atmosphere and are already suffering the consequences. We need to make up for lost time. What is really needed is to get to carbon neutrality asap, so we can start taking more carbon out of the atmosphere than we emit. These targets could work, if they were regarded by staff and the community as an absolute floor that we need to increasingly exceed. We need to use the targets and trajectory as a challenge to surpass. Also, the Playbook should be updated to include the current State target-carbon neutrality by 2045- for the sake of accuracy. Ideally the curve toward mid-century would also be modified to reflect this recent change in target. If doing so would delay the adoption of the CAP, we could note the change in the Playbook now and change the graph at the next CAP update.
- I am enthusiastic about CAP 2.0, but I feel we can--and must--be even bolder as we move to address climate change.
- Align with Governor Brown's executive order for climate neutrality by 2045:
<https://www.vox.com/energy-and-environment/2018/9/11/17844896/california-jerry-brown-carbon-neutral-2045-climate-change>
- Good goal
- Explore opportunities to engage surrounding communities in common short-range public transportation solutions with high capital requirements (specifically outside of VTA)

- Why bother? AOC says the world will end in 12 years.
- Try harder
- Stupid
- We should aspire to zero net carbon by 2050, if not sooner.
- 3% and 5% from local solar is ridiculously low.
- Why do we have so many buuildings now that come right up to the walk and have no green space? We need plants and trees for our health.
- Do the plan authors have a vision of how folks in Sunnyvale will be living if the target is attained? If it is seriously missed?
- The target should be to INCREASE CO2 in order to Green Up the Planet (via Photo Synthesis)
- I was thinking about "not ambitious enough" option, but let's start with this plan and make it more ambitious based on progress (our own and the rest of the world's).
- This seems very much too little too late. Change can be more radical.
- Lots of rezoning and pedestrian friendly changes needed to discourage use of cars. Not a safe place to walk, bike, et
- Must plan with surrounding cities and the state to make it worthwhile
- Too little too late.
- San Luis Obispo is targeting carbon neutrality by 2035.
- CLIMATE is changing faster than scientists have predicted. Change long term target date to 2035.
- It's a joke. Solar only makes sense when you spend someone else's money.
- I'm no expert. I really need others to sort out the science & info and tell me what goal we must achieve.
- Full electrification of buildings should be a must now, not in 50 years. Fossil fuel vehicles need to be taxed now, not some decades later.
- I think there are other issues the city should focus on. Forcing people to follow these restrictions is starting to look more and more like a socialist state.
- Target for 2030 needs to be much more aggressive to ensure realistic chance to meet 2050 goals. % reduction vs effort required will not be linear. Last 5-10% will be the hardest so needs to make additional reduction by 2030.
- Target for 2030 needs to be much more aggressive to ensure realistic chance to meet 2050 goals. % reduction vs effort required will not be linear. Last 5-10% will be the hardest so needs to make additional reduction by 2030.
- Target for 2030 needs to be much more aggressive to ensure realistic chance to meet 2050 goals
- I'm no expert. I really need others to sort out the science & info and tell me what goal we must achieve.
- Think we should be targeting lower, which might be the only way to get to the actual target. That said, I believe the playbook is flexible enough to adapt and we can course-correct as time goes on.
- Target of Carbon Neutrality (80% reduction compared to 1990 levels) should be pulled in to 2045 in line with Governor Brown's Executive Order from September 2018: B-55-18.

- The city may not achieve its intended targets for all of the individual "plays" so it should aim to overperform where possible so as to make up for areas where we miss the mark.
- I think the target is appropriate but also believe there will be technical advances that may help improve the numbers.
- Again transportation. We need action not just more study.

5. Are there any other Plays that you think are missing from the Draft Playbook?

- Reduced carbon footprint from air travel (lower carbon fuels, or electrification); reduction in disposable plastic (switch to bio/compostable alternatives); more thought on consequences of these plays (e.g. sustainable water from increased housing/local population growth, fire hazards from electricity storage, safer roads for coexistence of increased bicyclers and pedestrians); etc
- Is nuclear power an option? Can it meet green energy prices? It is carbon free.
- Building housing.
- Our food consumption is a critical piece of emissions. We need to look at ways to move to and incentivize shifts in our behaviors in meat and plant-based foods.
- Reducing consumption in general (resisting capitalism) to have less in landfill, disincentivizing air travel and SOV car travel
- Yes, take the money and send to China India or other developing nations to reduce emissions from coal-fired plants. This is far more cost-effective solution.
- Powerful role ruminants play in sequestering carbon in, and growing, the topsoil. Goats on our landfills is a start, but SVL can do much more.
- There is no direct item about increasing bicycle infrastructure. This is a good alternative for many people, but city staff and council do not support truly safe bicycling, as seen in lack of action in new infrastructure. Meanwhile, San Jose has been creating separated bike lanes downtown.
- It may be worth considering initiatives to eventually move away from gas appliances as electricity gets cleaner.
- Burn the Draft Playbook.
- I would add a play under strategy 4 to develop programs to encourage sharing and repair.
- Accelerate planning and approval processes for transportation improvements and new housing.
- Transportation should include a network of protected bicycle lanes on streets with higher speeds (30+mph) higher traffic or both.
- I read the pdf file it is very comprehensive --- I'm impressed.
- Sunnyvale should also examine whether there are local industrial facilities that could decarbonize their industrial processes.
- Electric cars and buses still have a bad carbon footprint when inching through miles of stuck red lights.
- More specific strategies including increasing density, developing a low-stress bicycle network, designing and delivering transit priority corridors (in coordination with transit providers).
- Increase multi family housing

- Need an enhanced focus on electrical storage (i.e., not just for solar); need regional efforts for a stable supply grid; call explicitly for natural gas exclusion/conversion in commercial and industrial; stronger connections between new development requirements and CAP goals, need to make it as measures explicitly called out as conditions of approval; not enough quantifiable measures for success with insufficient granularity;
- Play 1.1: Determine cost. Play 1.2: Determine who pays it (%homeowners, %small businesses, %big tech businesses). Play 1.3: Share 1.1 and 1.2 city-wide at downtown events like Summer Wednesday music nights and get responses.
- Cars are a form of personal freedom, so reducing their carbon footprint without reducing usage is key.
- Accurate, unbiased assessments
- Strategy 3 omits mention of "Active Transportation" which is low Carbon and improves health but would require modest investments in protected bicycle/pedestrian infrastructure, which would require the (controversial) removal of travel lanes or parking.
- I thought the plan was to switch to 'green' pavement already but they are still using blacktop at the schoolyards and other impervious materials for drives and walks.
- Fuel Cell vehicles are much greener than battery. We need a filling station.
- none
- Nature's diversity. Climate change will bring new species and kill/move existing ones, but in all the diversity is decreasing around the world. I know no one wants new scary spiders in their garages, but how do we grow plants in our new yard gardens if we don't have bees or other polluters?
- community zero emission transportation
- Gone too far and doing things counter to like increased housing that causes increased traffic, noise, pollution, waste.
- Locate aquifers before building to avoid flooding of subterranean parking lots.
- As mentioned above, better security plays a part in this.
- Traffic signal update to include AI driven traffic control.
- Improve retail to encourage shopping locally, supporting small businesses. Eliminate pesticides.
- Advocate for better strategies at the state and federal level. Work with other Bay Area governments to coordinate remediation for common issues (sea level rise)
- timed traffic lights to SPEED UP traffic and keep idling cars to a minimum. Sunnyvale needs to move MORE people by cars.
- Play 4.2 specifies "Implementing the Urban Forest Management Plan". The UFMP has been in existence for five years yet the City has seemingly done little to follow through on its guidelines. If the City is serious about natural carbon sequestration then I would suggest it puts more money into its tree division which is currently understaffed and underfunded. I would also like to see strengthening of the current municipal code to protect trees during development and require homeowners to have street trees. In addition to carbon sequestration, more trees mean less heat and less use of air conditioning. More people are likely to walk and bike on tree-shaded streets as well.

- Restore buy back price for solar energy to what it was previously before PG&E wiped out incentive to add rooftop solar.
- Again, no expert. Seems there is lots of room for more definition to various plays, which I will look to others to provide. I'm willing to endeavor to change what I do once others have sorted out what will have impact.
- Quickly phase in carbon neutral fuels for cars, trucks, construction machinery. Carbon neutral example: oil made from atmospheric Co2 + solar or wind, or biofuels. They can use existing infrastructure and equipment.
- Ensure that owners of all existing and new structures built in areas endangered by sea level rise bear the full cost for adaptive measures and not the Sunnyvale residents who were prudent enough to not take advantage of others.
- Again, I'm no expert. Seems there is lots of room for more definition to various plays, which I will look to others to provide. I'm willing to endeavor to change what I do once others have sorted out what will have impact.
- Could have greater emphasis on energy efficiency. Better explanation of 1990 baseline. An explicit target for the remaining 3% of electricity customers NOT on SVCE is a good idea.
- Inclusion of 4.4 is good, but also need to raise awareness of other consumption based emissions (airline travel, goods, and services produced outside the city's boundaries). Provide tools and education to help households reduce their consumption footprints.
- More emphasis on looking for ways to shift consumption in climate-friendly directions including reducing or offsetting air travel
- I rated 3.1 and 3.2 low because there is no clue as to how they will be done. I think aggressive paid parking in all noted areas would be a start to give meat to 3.2. 3.1 is already done with the new LUTE. How do you incentivize developers

Any additional comments on the Plays?

- prioritize traffic lights for bikers; make left turns for bikers/pedestrians more efficient and safer; better policing of drivers encroaching in bike lanes; educating public on driving safely for bicyclists and pedestrians.
- California's Climate Change plans are ridiculous. Moving away from carbon based fuels towards electricity without developing electrical supply safely and adequately, is ridiculous and dangerous. Just heating houses with electricity will put an incredible load on our power supplies. Electrical vehicles will do likewise. WHERE IS ALL THIS ELECTRICITY GOING TO COME FROM? We can SUPPLEMENT our energy supplies with renewable energy but it is not adequate to power the state. California's plan to combat climate change will destroy the state and do nothing to affect climate change.
- I don't think replacing big gas autos with big hybrid/electric autos will improve the quality of life, as long as the primary use is single-occupancy. SOV Automobiles have an inherent 93% inefficiency in energy and space effectiveness.
- 4c is only possible by building housing

- This is a clever way to present and review our CAP, it is easily understood, links outcomes to actions, and leads us to possible behavior change.
- Every Play should have a quantifiable target
- The report contains no cost benefit analysis. For example, Table 7 should include at least relative costs of the various actions. This makes the plan not credible. The stated cost of \$1.39M and \$500K per year is absolute waste of resources.'
- Great to ask for electrical vehicles but few can afford to buy or have access to charging stations. Will SVL subsidize households to buy/charge their EVs?
- For Play 2.3 "Zero Net Energy and all-electric new construction", an incentive for developers such as increased square footage to go all electric "now" could be beneficial, supporting this Play, and could help prepare for the goal to be all electric by 2030.
- I am not sure how you will use this data, because I rate everything "high" but that does not mean I am satisfied with the choices. I rate them "high" because those options are better than nothing. What does "high" mean to the writers and interpreters of this survey??
- Have the author do something more useful.
- There are no goals for the plays for within plan timeframe of three years.
- Play 5.2 target: Put GHG reduction graph, with future targets and link to more info on city home page by end of 2019. Play 5.1: Adopt less time-consuming, more informative online platform.
- 3.1 and 3.2 are in my opinion the most important of the plays. However I am concerned about the time-frame for implementing these changes. The process to change land use and street forms can take years of study, and we don't have that kind of time. We need to be considering how we can accelerate these processes.
- re: food - industrial agriculture practices for dairy/meat are bad for climate, but regenerative agriculture practices may be less harmful or climate-positive. Also, local gardens are delightful, but would it be a better overall climate strategy to decarbonize freight transport of food from rural to urbanized areas?
- In order to increase solar useage we need more flexibe zoning and allow residents to increase the size of their installations. Additiona panels are more cost effective than brand new installations.
- I recently replaced my HVAC system, and found that heat pumps were much more expensive than a gas heater, so I question whether installing heat pumps is an achievable building decarbonization strategy due to financial considerations.
- Looks like a student's research project. Lots of great ideas that won't be implemented properly.
- The categories "enhancing transportation options" and "supporting shared mobility" combine several disparate strategies. For example, if shared mobility refers to TNCs, please be aware that recent research shows that these are associated with more trips and reduced transit viability, which would result in increased GHG emissions.
- Permitting more housing options so that people can live closer to their jobs, and implementing transportation demand management to reduce Vehicle Miles Travelled, are the most impactful things we can do.

- Dense apartment buildings are the most environmentally friendly type of housing, while detached single family houses are the worst for the environment. If we want all new construction to align with our sustainability goals, that means only dense multifamily construction for residential.
- I would like to see Sunnyvale initiate plans for a regional electricity-producing waste incineration plant similar to what is done in Germany: would help achieving waste and methane reduction goals while at the same time allowing for carbon capture of residual waste and energy generation. Could be coupled with regional electrical storage backup for emergencies/catastrophes.
- We need to seriously look at our housing density strategies using actual data from large high-density projects already in place. Most residents are still using cars as the primary mode of transport for commuting and daily errands regardless of "transit oriented" and "mixed use" development, so in the end we just wind up with more congestion and cars operating at their worst efficiency, negatively impacting both carbon emissions and local air quality. Congestion leads to aggressive driving (red light running, driving in bike lanes) and discourages cycling and other non-auto modes of personal transport due to safety concerns. If people are going to drive regardless of their proximity to transit, we are just adding to our landfills and overall energy use by continuing to build at the highest possible densities and only developing housing for the high-income demographic, with all other workers enduring extended commutes from outlying areas.
- Play 4.1 is important, but I don't think we're set to achieving it with the current food scrap recycling program. Given the recent changes in the recycling marketplace, it would be preferable to have a program that accepted compostable containers. Then, if the city mandated that local businesses provided compostable plastics instead of non-recyclable plastics, we'd really be on our way to zero waste.
- Several seem to be on the unambitious side. E.G. we should be at 50% zero-emission vehicles by 2030 and 95% by 2050.
- Environmental damage from non-traditional energy sources not even looked at
- What's the cost?
- The targets are not ambitious.
- Right now Apple and Google bombard us with busses and shuttles everyday which cannot be good for the environment nor traffic. When will we take control and get some power???
- none
- Plays dates are too conservative- "kicking the can down the road" is a copout, adopt more aggressive date goals!
- I would strongly support ideas 134, 65, and 124.
- This is a very complex plan. I would like to see small projects carved out and started now. For instance, why is the city not installing solar on all city owned buildings? Most local schools have done this. What is holding you the city?
- Play 3.2 doesn't should call out bike/clean bus infrastructure focus.
- Create free or low cost chargers for electric cars!
- Don't lose sight on the REALITIES!

- I feel that Strategies 1 through 3 are all too weak and should be strengthened.
- My answers are influenced by the need to change the long term goals to 2035 and the essential need to establish specific quantitative goals wherever possible.
- You need more parking. Especially at apartment complexes so the surrounding streets don't become a blight.
- Is Strat #3 aggressive enough? For ex, seems like higher goals for zero-emission cars would not be so tough around here; not sure about other vehicles.
- What is the plan to encourage people to get rid of their gas/diesel vehicles as quickly as possible?
- Is Strat #3 aggressive enough? For ex, seems like higher goals for zero-emission cars would not be so tough around here; not sure about other vehicles.
- Strategy 3 is entitled "Sustainable Land Use", but all of the plays are focused on transportation. None of them are focused on measurable items that help us get better planning that will result in the "complete communities" discussed. I realize this is more qualitative and hard to specify, but it seems like a major gap in the report right.
- 1.2: I think there should be a 'storage' target added in line with the amount of storage that will be needed to support the grid as additional renewables come online to meet state 100% renewable energy goal by 2045. 3.1: Weak compared to the scale of change needed to impact VMT. Levers: rezoning, procuring open space, reduced parking requirements, march housing affordability with salary distribution of jobs...
- Strategy 2.3: Can you explain zero net energy vs. all electric? Strategy 3: Is it possible to express the VMT goal in a more accessible way? At minimum, the document should explain what VMT means.
- I am concerned that the VMT reduction targets (Plays 3.1/3.2) will be difficult to achieve so we should hedge our bets by being more aggressive on building decarb (Plays 2.2/2.3) and zero-emission vehicles (Play 3.3). Play 2.3 in particular needs to be MUCH more ambitious: new buildings should be all electric ASAP, not in 2050.
- Strategy 6 in general is a regional responsibility. Sunnyvale should participate in regional efforts and do its fair share.
- 3.3 could succeed if a charging station addition plan were being implemented and incentives to buy electric were put in place. But electric cars are coming, so this play should get some success

6. This concludes Part 1 of the survey. Thank you for your input. Would you like to go to Part 2 to provide more feedback on the Playbook?

If you are not continuing the survey, is there anything else you want to add about the Draft Playbook?

- To make a big difference will require lifestyle changes, not just replacing a car or a stove, but rethinking how and where we live, and how we move around, and how residences are connected to businesses, activities, and jobs.

- Prop 13 property tax rules highly discourage moving. so when a job moves, the commute can adjust, but few will move to be a lot closer to a job once they are locked in to a location through home ownership. Removing this barrier could make a big difference in encouraging non-renters to move closer to jobs. Of course this is beyond the scale of this work.
- Fixing the jobs/housing imbalance of Silicon Valley is needed to make the transportation piece work. That is not just Sunnyvale.
- Redo the plan. Include the cost effectiveness of the various actions. Consider global actions that will be far more effective in reducing emissions for the same cost. I am confident that you will find that virtually no government funded action will be justified by carbon reduction alone.
- I can't conceive of a bigger waste of time, resources, and tax dollars.
- Transportation should include support for regional transportation initiatives that help Sunnyvale.
- not at this time
- I don't have confidence in this. Sunnyvale's traffic jams have become extreme due to placing high density housing and high density office space in separate areas. Every attempt to improve traffic flow actually cripples it with increased stops, increased gridlock, and defective traffic lights. Large trees that created barriers between buildings and roads have been replaced with lots of dwarf trees on the sidewalk that block views of the bike lane and look like they'll be dead soon. It's such an epic display of incompetence that I cringe every time I hear about Sunnyvale starting a new project.
- Until we look at balancing ALL kinds of development, we cannot hope to achieve most of these goals. Traffic is a No. 1 concern for reduction of pollution. It is not mentioned per se. We drive an EV, we have solar electric, and we have tons of insulation. Where are they in your survey?
- This is a liberal environmentalist boondoggle.
- none
- Thank you for making this information available!
- There is NO need for any of that!!!
- I would strongly support ideas 134, 65, and 124 from the Ideas Roster.
- For The Climate Action Playbook to promote "100% renewable electricity" is a mistake. Doing so motivates utilities to shut down nuclear plants and replace them with wind and solar farms, which would raise the cost of electricity due to the intermittency and vast land requirements of renewable energy farms. The only reason renewables are cost effective is due to the constellation of tax incentives and other subsidies showered upon them, which greatly exceed the per kW-hr subsidies that nuclear power receives. A better plan is to confine solar panels to rooftops and parking lots, and demand that utilities provide whatever backup power the city needs from nuclear plants, which take up far less land than wind and solar farms.
- References:
- Cost of renewables:
- <https://www.forbes.com/sites/michaelshellenberger/2019/04/22/unreliable-nature-of-solar-and-wind-makes-electricity-much-more-expensive-major-new-study-finds/#681974474f59>
- Threat to biodiversity:

- <http://bravenewclimate.com/2014/12/15/an-open-letter-to-environmentalists-on-nuclear-energy>
- Necessity of nuclear power to stop climate change:
- <http://www.cnn.com/2013/11/03/world/nuclear-energy-climate-change-scientists-letter/>
- Reduce the cost of government fees to residents, trash, water, sewer. The annually increasing fees do not improve the quality of the service. More work is shifted to the consumer by automation.
- How much is this survey costing residents?
- One way to immediately reduce air and noise pollution would be to outlaw gas-powered blowers for outdoor area cleanup. I'd like to see us gradually move away from gas-powered lawn mowers as well.
- The city is hypocritical. This city has eliminated the ability to make right turns at intersections, thus forcing vehicles to sit idling, producing excess pollution. The city has also changed signal light timing to force vehicles to sit idle for as many as three minutes, wasting gasoline, and producing unnecessary carbon pollution.
- We need people to consume less electricity, food, gas, etc.
- There should be additional discussion of the need to sequester or offset the remaining emissions to achieve "carbon neutrality" (by 2045). At least say that we need to figure this out even if we don't know yet how it will be done or how it will be measured. Increased carbon sequestration within our city boundaries (adding tree canopy and green infrastructure) will most likely be highly insufficient to balance 20% of 1990 emissions. As measurement standards and methods emerge, the city will need to select and adopt plans to sequester, offset, and/or reduce "consumption" related emissions.
- I understand that the targets are intended to be long-term, but you should set an expectation that they will be reviewed for appropriateness as part of every 5-year planning exercise for determining the next "moves". Look at how much progress has been made on building electrification in the last 6 months, and the way that has made some targets seem outdated already. Over longer timeframes this also seems likely to affect other targets.

7. How would you rate your enthusiasm for the Moves in Strategy 1?

Any additional comments on the Moves in Strategy 1?

- Incentivize the directions you need to move us all toward decarb. Storage is certainly one, 100% electric in new developments with PVs, wired for EVs, etc.
- Storage seems to be particularly important, regardless of where it comes from. Part of energy/emergency resilience. May warrant its own move/designation.
- My PGE bill has tripled since SVCE service was added. Was this the city's intention to overcharge residents??
- We should also be encouraging microgrids, powered by clean energy.

- I do not know about SVCE, but when I consulted with BayREN I found them very knowledgeable and helpful, but the contractors that they required one to use to qualify for their incentives were greatly more expensive than contractors that did not participate
- storage should not be limited to solar; residential solar storage needs emphasis, subsidies, and technical support
- 1.C Collaborate not just with SVCE but with local companies who are in this exact business.
- Since the long-term goal is directed at 2050, an action to address the challenge of providing electricity at night and during calm weather needs to be specifically addressed.
- I don't know much about SVCE, but... I think people should have some choice over their energy provider, but I agree with the city that 100% clean electricity is a must. If there would be selection of energy providers, they all need to be 100% clean.
- Photovoltaics require rare earth metals that take significant resources to acquire, and burden the environment in terms of used chemicals and energy for example. Hydropower is also clean electricity, and if available should be considered. Also direct solar
- Eliminate electric and gas dryers and garbage disposals. Line dry laundry and compost wasted food.
- We should also collaborate with SVCE on Reach Building Codes.
- If you want clean energy, support nuclear.
- Promote through education and incentives both roof top solar adoption, rooftop solar water heaters
- How is SVCE providing 100% renewables all the time?
- Can excess energy be used to make hydrogen fuel?
- You need to notify participants in writing before doing community outreach.
- Get those remaining 3% of customers into SVCE, since they are still responsible for massive amounts of emissions (about 22% of the original electrical emissions per the graphic on page 21).
- Although only 6.6% of remaining emissions these moves seem relatively easy and we should definitely leverage the expertise and funding of SVCE.
- Move 1.C certainly couldn't hurt in and of itself, but if it distracts from other moves that more directly result in GHG reduction then it should be de-prioritized, especially because this is more SVCE's area of focus than the City's.

8. How would you rate your enthusiasm for the Moves in Strategy 2?

Any additional comments on the Moves in Strategy 2?

- Conservation should be a high priority too. We can run into a scalability problem otherwise, because when people feel energy is free and/or clean, they may be inclined to use much more of it.
- Electrification is key. (Renewable) energy independence is also important for resilience. Data is always important to know and track progress.

- Do NOT market to residents in apartments...only the landlords and homeowners have authority to make building / appliance changes, if cost-effective.
- For solar roof requirements, as part of the evaluation process, keep in mind that properties and buildings are different sizes, so where solar may work well on a large roof of a single story building, it may be much more difficult (if not impossible) to w
- It is important that any requirements regarding solar or natural gas taxes be affordable to those who are unable to fully electrify their property. The term "electrify" needs to be clearly explained that it means "no natural gas" and not simply electrici
- Don't "encourage", instead "require"!! Require solar, don't "research". Require heat pumps. Require all electric. Now. Not in 2030 or 2050.
- Since it is illegal to forbid new natural gas connections, make the fees very high.
- 2.H solar roof ordinance should include storage€"solar roof with storage ordinance
- I like solar but the panels are not easily recyclable either. I would like the option of cooling green roofs which are also valuable and lower cost.
- Buiding and zoning codes are not that solar friendly
- I recently installed a new HVAC system in my house, and when I looked at heat pumps I found that they were much more expensive than gas heaters. If Sunnyvale wants to accelerate the adoption of heat pump water heaters and space heaters, it also needs to
- Please accelerate requirements for net-zero buildings! These technologies exist NOW.
- Passive solar for buildings is key. Active solar for generation is nice but not always available to us.
- Many of these proposals would in themselves cause environmental problems -- pollution causes in building these materials? Disposal of solar panels, etc when past their life span?
- Emphasize dynamic windows, such as those made by View Glass in Milpitas, as a key part of reducing both heating and air conditioning needs in buildings. Visit the Delta Americas building in Fremont, a zero energy building. Take the Sustainability Commis
- Solar panel production does not reduce energy consumption
- City must commit to changing building codes and related regulations that will incentivize carbon reduction.
- 2.F We have a lot of renters in the area. The renter pays the utility use tax while the landlord pays the electrification. Therefore the tax does not make any difference in the landlord's mind and they won't be incentivized to electrification.
- Bay Area climate is very good for heat pumps (heating or cooling), and using heat pumps to heat houses should be incentivized for example when old A/C units are replaced. But also bear in mind that building energy usage can be lowered with proper insulati
- Electricity is TOO expensive - our electricity costs are 2x to 3x more than other areas - you want us to heat buildings with expensive electricity? Between that and our high minimum wage will drive people from Sunnyvale. Is that what the city wants? Ma
- Limit population. No new taxes, please.
- The actions in Move 2.A should not be solely the responsibility of the City of Sunnyvale. Are there other governmentagencies who are already doing this,and could share their information?

- The key is to make gas not economical.
- 2.G Add: 'all-electric'. 2.H Seems too prescriptive unless also requiring 'storage' AND local solar + storage is needed to support grid resilience.
- Great. Optimistic about 2.F.
- Move 2.H couldn't hurt but shouldn't distract from moves with more direct GHG reduction impact.
- 2 H could be difficult to implement as roofs are generally used for HVAC equipment. May target parking structures and open parking lots for solar programs.
- A solar roof doesn't always make sense. And when it does, it must include local storage to offset the worsening duck curve problem. An alternative choice would be for the developer to invest the equivalent wattage rating into a commercial solar farm.

9. How would you rate your enthusiasm for the Moves in Strategy 3?

Any additional comments on the Moves in Strategy 3?

- Consider ways to encourage carbon neutrality with air travel. Also consider transportation solutions for traveling to and from SFO/SJC with luggage. Safer/protected bike lanes.
- California's Climate Change plans are ridiculous. Moving away from carbon based fuels towards electricity without developing electrical supply safely and adequately, is ridiculous and dangerous. Just heating houses with electricity will put an incredible load on our power supplies. Electrical vehicles will do likewise. WHERE IS ALL THIS ELECTRICITY GOING TO COME FROM? We can SUPPLEMENT our energy supplies with renewable energy but it is not adequate to power the state. California's plan to combat climate change will destroy the state and do nothing to affect climate change.
- All non-residential parking should be PAID. Driving cars should be a privilege, not a right. While it is good to incentivize zero-emission vehicles, they are still cars and biking, walking, or transit would be better. So they should be incentivized over conventionally-fueled vehicles, but incentivized less than biking, walking, and transit. That also means that public transportation options need to be real and significant, enabling all people to have real options. And this needs to be applied regionally. What is your committed plan to collaboration on a regional scale, and how is this going to be better than what already exists in a dysfunctional way? All major employers (including the City of Sunnyvale staff) need an employee commuter program comparable to Stanford University or Facebook, which have proven impressive and significant results. There is no reason why that could not also happen here in Sunnyvale -- PAID parking at work, locker rooms with showers, bike racks, transit passes, etc. Land use and housing is also a key component of the challenge of transportation. It is good to see something relating to land use on here, but much more is needed in the way of mixed-use, medium- to high-density development to reduce commutes and VMT per resident. In many ways we have built and zoned ourselves into this trap so making sure that it can't continue is vital.

- Some of these strategies can make a difference today, while others need to wait for technology to catch up before incurring additional cost to residents.
- Reducing parking without appropriate transit is not an answer to congestion. Limited parking will probably not reduce the number of cars, people will just spend more time looking for parking. Increased parking fees unfairly hurt those who have no alternatives.
- Perry Park shuttle has been waiting for implementation.... get it going! I do not see actionable support for separated bicycle lanes from city staff nor council. The council appears to support bicycling as a general principle, but the rubber is not hitting the road. There are many moderate level bicyclists who would bicycle a lot more if it was truly safe.
- Reduced parking (ex: limited spaces in multifamily dwellings) and similar options are generally bad ideas that create frustration and strife between neighbors. Don't punish people who have to drive until the options for them are good enough. Make sure there are carrots available before using the stick.
- Set a high tax on internal combustion engine vehicles after 2025.
- Develop robust messaging with the rationale for housing, parking limitations, and rationale for moving away from auto dependence.
- Adding housing (3.A) is the single most important change we can make so far, followed closely by 3.E, which should also include Safe Routes to Work.
- More protected bike lanes!
- We are already on a path to make Sunnyvale too crowded. Need to stop encouraging companies to increase the number of jobs
- It is important to realize that many residents are not going to bike or use a scooter if it is raining or extremely cold. If there was decent public transportation options (not Uber, etc.) then more would not feel a need to drive.
- "Rideshare" is a misnomer. TNC trips are almost always single occupant trips and should be treated as such. They may be useful for emergency ride home, but should not be considered as a strategy that will result in lower transportation trips or emissions for commute or other trip types. In addition to the above strategies, there is a need for organizational and cultural change and training to support the above moves.
- 3.A is the most important thing we can do. Regarding electric vehicles, let's move away from cars and single occupancy vehicles all together.
- Strongly enhance and accelerate 3G; make such public transit free; not optimistic on 3D: if not successful, achieve it with 3G; accelerate/enhance city-wide EV charging infrastructure
- 3.A) "Diverse" housing should include at least *some* single family homes - lots of transplants from other states want this option locally (and can afford it), but end up buying homes in the south county and tri-valley area because nothing is available locally. Their extended commutes in large, gas-only vehicles has a huge carbon footprint, and their homes are in more energy-intensive areas due to higher summer and lower winter temperatures. By not allowing *any* local single-family home development while continuing to build the offices that employ these people, we are driving this unfortunate trend. 3.B&C) Efforts to simply make parking and driving more expensive is basically a *regressive tax* on those who can least afford it! Local real estate

is extremely expensive - those who live locally already pay the least in transportation costs while having at least **some** viable transit options, while those who **must** drive are often the people who can least afford it. This strategy will not work to reduce driving trips no matter how you look at it: high-income tech workers will have no qualms about paying the fees and just continue to drive, while the low-income, long-commute service workers, will still have no choice but to drive and just endure more economic hardship. PLEASE do not consider these fee options - not a "solution"! 3.F) I haven't seen any real research that shows that these programs actually **reduce vehicle trips** - which should be the goal. They do get some use in areas where they are available, people seem to just use them as a fun novelty, while anyone serious about cycling or other human powered transport just buys their own bike or scooter and is already doing it. 3.H) Please do NOT go to any effort to accommodate more ride "share" activity in the city - no one is "sharing" rides - these are CABS, plain and simple. They do NOT reduce, but rather INCREASE traffic, as high-income residents simply employ these services as a private car, rather than use public transit options. They also DO NOT belong in our local commuter lanes - the driver isn't **going** anywhere, and they impact our carbon footprint and local air quality by circling constantly, creating MORE traffic congestion, which causes all other vehicles on the road to operate at lower efficiency. It is also a scam business model that excessively utilizes public resources for private gain while shirking the responsibility to even **pay** for proper use of those public resources. Drivers don't even need a local business license - this actually IMPACTS local government's ability to implement everything else in this plan. Require business parks to have off-street drop-off/pickup facilities for any type of vehicle (carpool, shuttle, ride"share", or otherwise) and implement STEEP FINES for anyone stopping on a thoroughfare! 3.I) Definitely **monitor** autonomous vehicle testing (hint, they are already causing local traffic problems due to their inability to negotiate simple 4-way stops, etc.), but please DO NOT encourage their on-street commute hours testing or adoption. Autonomous vehicles are PERSONAL TRANSPORT with all of the same negatives as single-driver vehicles. Some projections have already shown that they are likely to **INCREASE** traffic (as they drive to and from fares - completely empty!) and exacerbate parking problems. They are not some "magic solution" as local tech companies who are heavily invested in them would have you believe. At some point, perhaps we'll have a nice onboard technology in our vehicles so that we can put them in a sort of "boxcar mode" allowing greater throughput at intersections and traffic segments etc., and perhaps at that point we have designated lanes, but that seems to be a long way off. For now, there is NO BENEFIT to our city in endeavoring to accommodate this private business venture.

- It is hard to get people to give up freedom and convenience for personal vehicles, so making alternatives better is important.
- Electrical vehicles may be charged via fossil fuels? Unrealistic to expand buses, trains, etc when using them is unsafe due to criminal activity on them
- Strategy 3 is the place where the city can make the biggest difference, and there are several areas here that need improvement. 3B needs to be stronger. Read Donald Shoup's "The High Cost of Free Parking," and implement dynamic parking meters in downtown (price changes based on number of open spots). Replace minimum parking requirements citywide with parking

caps. Explain to citizens that in order to have a truly walkable downtown, buildings need to be closer together, which means elimination of big parking lots between them. Carry out the city's policy on streetscape allocation, recently undermined by the staff-driven initiative to replace car lanes on Mary Avenue with bike lanes, while leaving street parking. Staff may not like to listen to citizens gripe about losing their ability to use the public right of way for their own personal vehicle storage, rather than using the two covered and two uncovered spots that their homes are required to provide, but that's too bad. That policy, which prioritizes mobility uses (cars, bikes, sidewalks) over stationary uses (parking, landscaping) is critical for minimizing trip times and reducing carbon footprint. Staff and council need to have the spine to tell some citizens something that they don't want to hear, like the fact that our city policy says park on your own property. 3D also needs to be stronger. Instead of "high quality transit service," which could mean anything, say "carbon-free, dedicated right-of-way, mass transit that is faster than driving." That means either electric BRT or light rail. Buses in regular traffic will not do the trick, because they are slower than driving. VTA's research has shown, unsurprisingly, that a mode shift to mass transit occurs only when mass transit is faster than driving. Sunnyvale should work to help prioritize the Stevens Creek-Alum Rock light rail line, which for 30 years has shown the highest potential ridership in the entire system, but whose funding keeps getting diverted by the many San Jose members on the VTA Board to the BART project. Given the huge number of daily trips to Apple and DeAnza, Sunnyvale would benefit from getting those cars off the road. The city should also push to restore its equal representation on the VTA Board, cut back a few years ago in favor of South County cities. Another Move should be added to this section, consistent with Move 5H, which could be called Move 3M. The city MUST keep track of its number of jobs, houses, slots in schools, office space, etc. After a community visioning event in 2005, the city started tracking these indicators, with the idea that when council made decisions on land use, it would understand the effects of those decisions on the cumulative balance between jobs and housing and intensity of development, so that we would not keep putting straws on the camel's back. After the CDD who devised this retired, staff started to undermine this approach passive-aggressively, to the point where a councilmember had to ask to see those data every time a land use decision was made. As soon as that councilmember was termed out, staff came running to council to ask to scrap the tracking of these indicators, and the newly elected rubber stamps complied. Staff needs to commit sincerely to helping the citizens achieve their goal of sustainable rather than uncontrolled development; backlash against excessive development got two councilmembers defeated for reelection in 2016. Move 3A says "build more housing." That is half of the equation; "build less commercial" is the other half. Sunnyvale is completely built out, so more housing can be added only by changing the nature of the city, which citizens oppose. But saying "no" to an office project is much easier, and matches public desire. Staff really needs to decide to carry out public desire rather than just paying lip service on this issue.

- Does Rideshare actually reduce VMT and CO2 emissions? How about PROTECTED INFRASTRUCTURE so that people can ride bicycles safely, and provide "incentives for adoption of bicycles and e-bikse"?
- A shuttle down Sunnyvale/Saratoga route to the Caltrain station would solve the needs of a significant percent of both workers, restaurant goers and shoppers

- You could also incentivise home owners to be able to reduce/remove the planning requirements for garages and driveways if they meet certain requirements (max number of cars registered per address for eg).
- Adoption of EVs is the single most valuable change individuals and households can make in the near term to reduce carbon. Implementation of a infrastructure plan--not just development of a plan--should be the highest priority action of all. And publish how GHG from transportation is estimated.
- 3.E: It requires a real effort to implement this. I am a bike commuter, but I cannot bike even half of the places I would like to. There are no safe routes through the city (El Camino with a bike, no thanks), and biking around downtown is basically impossible. There is no bicycle infra in Sunnyvale. Also safe routes to school... Look at Peterson Middle, there are no bike lanes, no safe crossings over larger roads, no real routes to anywhere. The kids bike on narrow streets surrounded by cars. I would say that there has been zero effort to create safe routes. 3.G: Pilot a shuttle? How is a shuttle different than public transportation bus? I hope we are not trying to invent a wheel again. Though, I am all for public local transportation. 3.H: You mean like a bus stop? We wouldn't need that much ride shares if we had functional and affordable public transportation.
- New (and retrofitting existing) office building parking lots should have shady parking spaces for majority of vehicles. When the vehicles are cool in the afternoon, when people leave the office, the A/C unit of the car don't need to work so hard, and will use less energy (thus less vehicle emissions). Parking restrictions (time, pricing) will only make people angry; the cars will be still there, because people in general can afford to pay. Better strategy is to make finding (shady) parking very easy and concentrated centrally so that it's easy to reach the destination by foot. Easy parking and joining traffic will reduce vehicle idle times.
- With transportation being our significantly largest emission driver, this seems overly cautious. We need much more aggressive standards. No one able to bike, walk or access transit should need to drive for a trip under 3 miles. Free parking needs to go in most areas, especially on El Camino, which is in desperate need of safe bike access. Bike parking should be a requirement..
- People in the valley switch jobs ever few years - you will make it so people have to move every 2-3 years. Public transportation is too slow and expensive on personal time. Face it, we need to drive or spend 1/2 of our day on busses and at work. I did this for 6 months and it was NOT worth it! 3.5 hours on Train and bus - not worth it. Drive took 90 min each day.
- Stop punishing longterm residents with the destruction of peace and quiet. Our quality of life is destroyed by the unbridled growth in population. Too much traffic, brownouts, not enough water, etc. And we are charged more for using less.
- Ridesharing (Uber...) only increases the number of cars on the streets as people move from busses to Uber. Ridesharing does decrease the number of parking spaces needed. Not EVERY road needs a bicycle lane. El Camino is a major car artery and bicycles should not be encouraged. Bike can use a side street.
- Don't sideline hydrogen fuel cell as a viable alternative

- Rationale for ones I rated medium... 3D: We MUST do ALL we can and not expect regional entities will fix transportation. 3K: Just don't think this will be a hard sell around here, although that may be a reason to be sure to cover it well.
- There will be no development of bikes, scooters, etc without maximum safety on the road, or dedicated roads.
- 3.B Reducing parking spaces / increasing time restrictions penalizes large families where ride-sharing does not make sense. 3.E We need better bike paths across the city. Not just to/from schools. For example, it is impossible to get from West Sunnyvale to the Steven's creek trail using bike paths. Bernardo does not have any bike lanes South of Knickerbocker.
- 3.B Reducing parking spaces / increasing time restrictions penalizes large families where ride-sharing does not make sense. 3.E We need better bike paths across the city. Not just to/from schools. For example, it is impossible to get from West Sunnyvale to the Steven's creek trail using bike paths. Bernardo does not have any bike lanes South of Knickerbocker.
- Rationale for ones I rated medium... 3D: WE MUST DO ALL WE CAN and not expect regional entities will fix transportation. 3K: Just don't think this will be a hard sell around here, although that may be a reason to be sure to cover it well.
- Again, there is nothing in here that measurably speaks to how we are creating complete communities. Transportation is important, but these moves could risk optimizing around a single factor and not resulting in the community we want. I'm very disappointed with this section.
- 3.C Also adopt TDM plan for city employees. 3.E So important. Would probably be done anyway regardless of Playbook, right? 3.H Incentivize 'shared / pooled' Uber & Lyft - not just dropping off one person. Require Uber/Lyft to park and turn off engine when awaiting next riders
- Elevated/protected bike lanes? I'm not convinced that 3H is necessary in a city as suburban as Sunnyvale. 3G: why are redeveloped areas more in need of shuttle service than others?
- Develop a citywide program for free VTA transportation or at least free for students/seniors.
- None of these have any meat. They are mostly study which means in three years we will have hardly any improvement. I suggest the city immediately implement a paid parking tax where the proceeds fund city wide shuttles. All public parking is paid by the hour'. Business could

10. How would you rate your enthusiasm for the Moves in Strategy 4?

Any additional comments on the Moves in Strategy 4?

- We should target reduction of plastic use in products, and especially single-use/disposable plastics, encouraging compostable alternatives instead.
- California's Climate Change plans are ridiculous. Moving away from carbon based fuels towards electricity without developing electrical supply safely and adequately, is ridiculous and dangerous. Just heating houses with electricity will put an incredible load on our power supplies. Electrical vehicles will do likewise. WHERE IS ALL THIS ELECTRICITY GOING TO COME FROM? We

can SUPPLEMENT our energy supplies with renewable energy but it is not adequate to power the state. California's plan to combat climate change will destroy the state and do nothing to affect climate change.

- When I look at my waste--the non-recyclables mostly relate to packaging issues. We need to look at the supply chain packaging and possible regulation of plastics and possible incentives.
- There is no good reason why food scraps aren't available to all residents and businesses. Do that ASAP. The UFMP has little substance and needs to be rewritten. There are many opportunities for afforestation and it doesn't look like Sunnyvale takes that seriously or is concerned about increasing its urban forest. I don't really understand how the City can promote low carbon foods, but I agree it is important. How do you measure this impact?
- 4F Beetle infestations destroying mature trees; plant more native trees. 4H Local ruminants are the lowest carbon healthy food source, restore soil, heal bodies which lowers medical costs. See www.savory.global for more.
- Increasing the tree canopy and reducing water use will make a huge impact. The trees help will all elements of the CAP (carbon sequestration, temperature control, storm water runoff) and provide an environment for walkers and bikers, thus reducing the need for cars. Trees are also a very tangible item that everyone can help with or at least appreciate. It is one of the few items in the CAP that will have a direct, visible impact on every resident. More green space is critical.
- Work with school districts and senior housing to identify best practices for implementing local food gardens.
- I think Move 4.H should actually be the Play. I don't think making the actual switch is something government can do.
- Yes, plant more trees!
- Here is what we can do right now in 2019 -- urge big box stores like Lucky's, Safeway and Smart&Final to transition away from plastic clamshell food containers. City of Sunnyvale needs to partner with TERRACYCLE to divert hard to recycle products from the landfill the cost is \$0 check it out!
- What is the Green Stormwater Infrastructure Plan? We would like to see some workshops to teach us how to install recirculation systems in our homes so that we don't waste so much water waiting for the cold water to arrive in the sink. We have tried to research this ourselves but there is a lot of conflicting info out there and we would hate to install something that didn't work correctly.
- Residential water reduction is barely a drop in the bucket compared to commercial and agricultural water use.
- 4.A) Good to have a food scraps program, particularly for restaurants, but I find myself with an empty bin every week. Also, contributing to HOG FARMING (severely environmentally destructive) is at cross purposes with other goals here! Food itself (other than production energy) is carbon neutral, whether eaten or thrown away - it can only release the carbon it absorbed from the atmosphere in the first place. Basic science.
- Invest in a way to process recycling that China won't take any more

- 4F is by far the most important one here, since trees sequester CO₂. Staff must implement the utility undergrounding policies passed by Council about ten years ago, and use Sunnyvale's Rule 20 funds to the maximum. The city must explore mechanisms to fight PG&E's plans to eradicate street trees in order to make it easier for themselves to monitor their subterranean pipelines. Get those wires and pipes out of the way of our trees, and find places to plant more of them. Incentivize citizens to do so. Make the city's tree removal permit process more fair by subsidizing the maintenance of large trees on private property whose owners have been denied tree removal permits. If the city tells a property owner that his tree is essentially owned by the neighborhood, then the neighborhood should kick in to help maintain it, since the basis for the city policy is the argument that large trees benefit all nearby properties. Have a Come to Jesus meeting with planning commissioners to explain to them that the three criteria for a tree removal permit are the only allowable basis for their votes, not personal opinions about trees (one former Commissioner voted for every single tree removal permit that came before him; another voted against every single tree removal permit that came before her, and a third has always voted against every single tree removal permit unless it is a palm tree, which he unilaterally declares to be a species not allowed in Sunnyvale). Tell these people to follow the code or get off the Commission (or allow appeal up to Council). With regard to the food issue, a lot of vegans have been arguing that everyone should have to be vegan to eliminate livestock, which has a large carbon footprint. But since we all have canine teeth, we evolved to eat meat as well as plants, and it is wrongheaded to order people to deny their own biology for someone else's agenda. If the mass extinction event proceeds, all the animals will die off and people will have to become vegan, but that shift should not be enforced by policy.
- How can I repair appliances instead of trashing them? I hear some places will have a "repair fair" and you can bring something in and handy folk can help you fix them.
- When in Silicon Valley it's hard to get people not to 'need' the latest smartphone or computer. If you can get these providers - both manufacturers and network providers to co-operate on slowing down it would be a miracle.
- 4.C: We need more than that. Maybe some regulation just like the plastic bag ban. It is hard to make a good choice if the store offers 10 different brands of non-ecologically packaged items. This applies to all the items: if stores don't offer sustainable options, it is hard to buy them.
- Effective way to promote low carbon (and healthy) foods is through children. Making high quality food a daily standard (that is, so it's a way of life) with children will have deep reach through them to their parents. Another way to lower resource usage is ban unsolicited mail altogether. We weekly get pounds and pounds of unsolicited credit card offers and other advertising via mail, that goes directly to the recycle bin without reading. A step forward and thought leadership would be to start seeking ways to replace single use cardboard boxes for deliveries with multi-use alternatives. Many small items that are delivered to homes would fit very well in 3-4 different (standard) size containers. People could then return the containers to centralized location, or there could be a scheduled weekly/bi-weekly/monthly collection (like garbage) by the delivery companies since they drive around the neighborhoods anyway.

- Currently recycling program does not take most recyclable items; ex[and recycling to include all items
- When it does not rain, our water rates go up to pay for reduce revenue for water company. It rains and usage goes up -> rates stay high. Drought->rates go up. Rains come-Rates stay high, never go down. Garbage rates go up and up. My rates are ridiculous compared to the service/value I receive. Sunnyvale is getting too expensive. My kids have stated they will not live here when they graduate as it is too expensive and no longer a nice place to live - their friends all say the same thing.
- Has Sunnyvale become Berkley? "Promote consumer awareness of low carbon foods" ?? Really ? We're the FDA or Dept. of Ag. now?
- 4D. I think we should aim to beat not just meet state standards.
- Limit population growth. How much income does the waste diversion program generate for the City? Who receives a benefit? That money should be used to reduce our garbage collection fees.
- While one saves water, bills are still going up as we are told we saved too much!
- It is time to implement the Urban Forest Plan!
- 4.I -in addition to large businesses, add schools as sites for implementing local food gardens.
- Planting more trees is the only plan I can get behind. But also make it easier to chop down (an replace somewhere else) problem trees. The city goes overboard in "protecting" the urban canopy.
- Provide incentives and templates for mid and low income apartment complex owner to build raised beds for residents to develop their own community vegetable gardens.
- 4D: Seems we've done lots here already. 4F: Good we have others who focus on trees. 4I: Maybe I'm wrong, but this seems like something for a bit down the road; maybe we have larger asks of businesses.
- 4.1 General comment - With China no longer importing recyclables from the US, how does this plan address the growing pile of cardboard and plastic accumulating and not getting recycled?
4.A - The current food scrap program is completely untenable for residents. Make it easier to use before expanding the program. 4.H Education at the city-level on low-carbon food does not sound like a good investment of resources. This should be a state-level initiative. If not a state-level initiative, look to an organization like Seafood Watch (<https://www.seafoodwatch.org/about-us>) that operates well beyond the boundaries of Monterey.
- 4.1 General comment - With China no longer importing recyclables from the US, how does this plan address the growing pile of cardboard and plastic accumulating and not getting recycled?
4.A - The current food scrap program is completely untenable for residents. Make it easier to use before expanding the program. 4.H Education at the city-level on low-carbon food does not sound like a good investment of resources. This should be a state-level initiative. If not a state-level initiative, look to an organization like Seafood Watch (<https://www.seafoodwatch.org/about-us>) that operates well beyond the boundaries of Monterey.

- Reduce waste. reduce packaging on new products. Could delivery services be reduced? Our neighbors have packages delivered multiple times a day from different carriers; this is crazy.
- 4D: Seems we've done lots here already. 4F: Good we have others who focus on trees. 4I: Maybe I'm wrong, but this seems like something for a bit down the road; maybe we have larger asks of businesses.
- 4.B, D & G would be done anyway without Playbook.. More focus on waste reduction overall.& reducing per capita waste. Define a 'plastics strategy'. For example, only allow sales of plastics in the city that can be recycled (preferably locally)..
- Work with master gardeners to promote sustainable backyard gardening and environmentally friendly landscaping without the use of leaf blowers and synthetic fertilizer. Most of the other moves are already in progress and well studied. How will these moves make the programs better?

11. How would you rate your enthusiasm for the Moves in Strategy 5?

Any additional comments on the Moves in Strategy 5?

- Brainstorm consequences of above plays and develop new initiatives to mitigate risks.
- California's Climate Change plans are ridiculous. Moving away from carbon based fuels towards electricity without developing electrical supply safely and adequately, is ridiculous and dangerous. Just heating houses with electricity will put an incredible load on our power supplies. Electrical vehicles will do likewise. WHERE IS ALL THIS ELECTRICITY GOING TO COME FROM? We can SUPPLEMENT our energy supplies with renewable energy but it is not adequate to power the state. California's plan to combat climate change will destroy the state and do nothing to affect climate change.
- I'm pretty sure that there are more effective and less costly programs than 'cool blocks,' but the idea is one I like a lot--community action can help a lot!
- I'm not confident social media and SSS are worth their effort to promote proenvironmental behavior. Does this work prevent Staff from reaching beyond the eco-choir? Annual GHG inventory is great if it doesn't prevent other important work from being done. Employer action is important here. Cool Block has potential to drive residents to significant actions, but the people who join the program are probably more environmental than average anyway.
- I understand the need for additional staff, including an expert in sustainable transportation and outreach
- Speaker series is a waste of \$ unless you plan to upload YouTube videos and expand the reach. Currently the City's social media game is weak. Who is doing a good job? Sunnyvale Public Library's social media person gets it.
- I know most schools' curriculums are packed just trying to teach the basic requirements. You would have more success with this if you could get it included in the state standards.

- Social media presence should include notifying people each time an issue related to any of the items on the climate action plan comes to a committee or Council. The Legistar noticing is cumbersome and makes it difficult for residents to follow topics that are of interest.
- 5.A sounds designed to empower self-promoters and possible kickbacks and other corruption
- 5H is critically important and highly appreciated. Make sure that the numbers are correct and then base policies on them (for example, the number of jobs in 2016 is 13% higher on page 14 than it is on page 92. As mentioned above, a key mechanism for accomplishing Move 5H is to create Move 3M and go back to tracking all the metrics on the city's land use, in particular the gap between jobs (demand for housing) and houses (supply), which is the cause of the Silicon Valley housing crisis. It's not the jobs-housing ratio that is meaningful, it's the jobs-housing difference. Sunnyvale should set a target of a number of jobs equal to the number of adult residents, and measure every year where we are with regard to that target. It is no longer acceptable to say, "our population goes up during the day, so that's great for our budget, so everything is OK." When we do that, we are saying "Let some other city house our workers and pay for all those residential city services, and let them all commute to Sunnyvale and burn gas." That's immoral, when you get down to it. And make sure that the amount of CO2 emitted by excess commuters into Sunnyvale (above our nighttime population) counts as part of our GHG inventory, since that amount is directly caused by city actions.
- Our local schools should compete to get the most kids in and out of school with alternate transportation. Every kid who rides to school in a car is a failure of our community to prepare the next generation for the challenges they face.
- "What gets measured, gets done." Metrics and analysis are crucial to CAP success. I would like to see more measurement built into the plan.
- 5.A and 5.D: These are nice to have, but I don't think they are the key steps. Only people who are already interested and active will join. Instead, put more effort to 5.E and 5.F. When people adopt good habits at school or at work those habits become "the way of life".
- Allow residents to maintain their privacy.
- 5F: Maybe this would be big, but would it work to expand communications beyond Sunnyvale residents? (Many workers live elsewhere.) Mus
- 5.D - I don't see a sponsored speaker series as an effective investment by the city unless there is a commitment to stream / record the sessions and then promote access to these speaker sessions through online resources. It is incredibly difficult to get people out of their homes. 5.E - I'm a big fan of this. I don't think our goals are achievable without educating our next generation of citizens.
- 5.D - Sounds great in principle, but I don't see how this helps spread a message to everyone in the city. Speaking sessions are typically only attended by people who already care about the topic. It takes real effort to get people out of their homes to come to a speaking session. 5.E. I'm a big fan of this. I don't think our goals are achievable without educating our next generation of citizens.
- 5F: Maybe this would be big, but would it work to expand communications beyond Sunnyvale residents? (Many workers live elsewhere.)

- 5.A & 5.B together are really important and can also help bring 'consumption' of goods and services into the conversation. Involve Library and Community Services more in Strategy 5 Moves. There is a lot of outreach and programs potential there. Get their buy-in and ownership.
- 5C and 5G: it could be more effective and have broader reach to publish updates in the Norizons newsletter or as part of the utility bill. Another move could be providing resources to assist other cities in achieving their goals.

12. How would you rate your enthusiasm for the Moves in Strategy 6?

Any additional comments on the Moves in Strategy 6?

- Work with the state to identify more water reservoir opportunities, work with the state to identify better wildfire prevention/protection.
- These are all essential to long-term sustainability if not survival...
- Regional collaboration on climate action is crucially important. I am not confident in the quality of work done by the Army Corps of Engineers--they seem to be behind in the best practices and latest science by 20 years minimum.
- If there isn't enough city staff to deal with all the Moves, then this section can wait. We need to address energy use and transportation first.
- This strategy in particular seems to require a level of nimbleness that is currently lacking in the City. Change management and fostering a culture of engagement, innovation and sustainability is a prerequisite to many of the moves in this and previous st
- Seems highly theoretical as opposed to mitigating threats clearly, historically known
- Shoreline protection as in levees or shoreline protection as in wetlands?
- No real actions. Just review, participate, collaborate, identify, ... It is nice to have plans and projects and discuss with others, but we need real actions.
- Don't waste my tax dollars on this.
- Adaptations is a different matter, not unimportant but not my focus here.
- I just want to stress that this section will not be achieved unless moves B, C, and D are prioritized and intentionally pursued.
- In addition for being prepared for disasters, part of the adaptation plan should be to find ways to avoid the expected riverine flooding through more robust green infrastructure and/or to change land use protocols/zoning in areas of highest risk.
- Another move should be in there: Identify areas of the city which all will be most impacted by sea level rise. That can be done by extracting from regional and state data which neighbors are impacted and how severely they are impacted. Make the data easily accessible by citizen

13. Would you like to share any final thoughts about the Draft Playbook?

- Great job so far! Let's make it happen!

- The whole concept of calling the future of Sunnyvale a "Draft Playbook" sounds like an advertising scheme. There is no mention of the economic strain the plans designed above will put on the average Sunnyvale citizen. This plan is too aggressive and tries to move too fast.
- Thank you very much for the CAP citizen's advisory group, the development, the outreach and the actions taken. Sunnyvale is SUCH a well-run City!
- I want to see sustainability in everything the City does. City staff in all departments should have some required sustainability training (environmental purchasing policy, zero waste, transportation, etc.) to be more sustainability-minded in their daily work. Same with students, and businesses, but with multiple firms it is harder to wrangle. The City could be the first place to start!
- I rated all the actions as low based on carbon emission reduction. Some of the actions are viable and cost effective based on energy reduction. But these will occur without any government intervention and do not require public funding.
- Time to step away from old business-driven choices, and focus on resident health / wellbeing sustainability. Businesses need healthy employees to thrive.
- Please be really clear about what "high" means. Again, I don't think the city is doing enough fast enough.
- I appreciate that this plan is easy to understand and well-written, with the appropriate sense of urgency. That it contains an implementation plan as well as cost estimates is also an improvement over the first plan. I worry that strategies and plays are considered rather static when technologies and climate are moving so quickly. I wish for a method to revise at least the moves between updates for this reason. Also, the next GhG inventory needs to include a consumption audit so that we are aware of the magnitude of this source and its sources.
- This is a bold plan, but we may need to be even bolder. We have 11 years left if we're going to hold temperature increases to 1.5C. Let's get to work.
- Impressive Playbook it is something to be proud of. Bottom line is the chain grocery stores are still the exact opposite by still selling food in non-biodegradable plastic clamshell containers. Sunnyvale should elevate restaurants which use biodegradable take-out containers and let the restaurants market themselves as "green certified" at their door.
- Thanks to everyone who helped put this together!
- Glad you're doing this work. Thank you for the opportunity to comment!
- Need granularity and specificity in quantifiable measures of what we have now (baseline) and how we are progressing
- We need to seriously look at our housing density strategies using actual data from large high-density projects already in place. Most residents are still using cars as the primary mode of transport for commuting and daily errands regardless of "transit oriented" and "mixed use" development, so in the end we just wind up with more congestion and cars operating at their worst efficiency, negatively impacting both carbon emissions and local air quality. Congestion leads to aggressive driving (red light running, driving in bike lanes) and discourages cycling and other non-auto modes of personal transport due to safety concerns. If people are going to drive regardless of their proximity to transit, we are just adding to our landfills and overall energy use

by continuing to build at the highest possible densities. Some solutions would be to ensure that any new office development has VERY little parking, ON-SITE shuttle parking with enforced idling restrictions (on-street and illegal bus parking has become a HUGE problem in Sunnyvale and they frequently illegally block bike lanes!), and require all new housing developments (of *any* density) to have off-street shuttle accommodations as well. Small local-loop (electric) shuttles serving last-mile needs between neighborhoods and transit stops are desperately needed. Please utilize ACTUAL DATA in the decision making process! High density development in and of itself is NOT necessarily "green" - we need to take ALL IMPACTS into consideration.

- It's a good document and very necessary.
- I hope it fails
- The IPCC indicates that in order to avoid the worst climate change scenarios, we will need to reduce CO2 emissions to 45% by 2030, and achieve net zero by 2050. Unfortunately, the goals specified in the draft Climate Action Plan fall considerably short of IPCC recommendations. How do we account for the discrepancy? Shouldn't those of us who live in a wealthy community with access to advanced technology be, if anything, ahead of IPCC recommendations? I believe that lagging on these recommendations is morally reprehensible and is an awful way to provide for our children. The lack of ambition on the part of my own community fills me with a deep shame.
- First order on the Agenda should be to insure all members on the Governing Council are willing and able to conduct business without the prospect of personal gain. And to have a plan installed to initiate removal of any Official upon notice of such actions without hesitation.
- End the collection of so-called recyclables. The program is a failure. It is tax, collect, transport and store. What is the carbon footprint of the ship that take it away to China? Unless a US based program is developed, it is an expensive joke.
- I am very thankful that the City HAS a Playbook, but have concerns about lack of urgency and quantitative details. Words alone will not provide meaningful results.
- Don't waste time on money on your utopia. I don't want to live in a city that does this. Reading this playbook made me sick.
- Identify which Sunnyvale Farmers Market vendors practice regenerative agriculture. (Beyond organic, this is fixing the soil and covering it year round, per this clip on NPR this week. https://www.npr.org/2019/04/27/717756929/california-farmers-try-new-strategy-to-cut-carbon?utm_campaign=storyshare&utm_source=facebook.com&utm_medium=social&fbclid=IwAR1gYVP1Po9mvBEeEiYXE5PQ1ZH7jjPVJa9qkEPBNp1-wf4WGcGiShEPZk
- What a tremendous effort. Thanks so much for all the hard work!! It is great to have all this organized into something we can start using now and will be able to build upon over time.
- How are the 1990 baseline and current emissions measured?
- Great job in putting an overall strategy together!
- First order on the Agenda should be to insure all members on the Governing Council are willing and able to conduct business without the prospect of personal gain. And to have a plan installed to initiate removal of any Official upon notice of such actions without hesitation.
- What a tremendous effort. Thanks so much for all the hard work!! It is great to have all this organized into something we can start using now and will be able to build upon over time.

- All in all, I'm very happy with the final product. I do hope some of my stronger critiques above make it in, but I believe this is a thorough, accessible, and adaptable document that will serve Sunnyvale well as it pursues its 80 by 50 goals.
- Yes. The Playbook is a great improvement from CAP 1.0 and I recommend that it get adopted in June and fully funded for the next three years to support the "Next Moves". // See my full detailed annotated comments on the draft with suggestions for improvement, and a summary of main concerns which were sent to Nupur Hiremath on April 8, 2019. // Each 'Next Move' should have a target so it is clear when it is completed and so the moves can be project managed more closely (than for example the CAP 1.0 actions were). // It will be challenging to complete the 43 'Next Moves' in three years. Let's get started!
- This looks excellent. It is comprehensive and has a nice mix of a few out of the box ideas worth trying. In the final document it would be great to provide full context around timeframes for completing each move as well as explaining any non obvious acronyms (such as VMT). Lastly I would like to know more about what Sunnyvale can do to impact climate initiatives outside our borders, whether by reducing consumption or helping other cities with their climate plans.
- I think the plan is well thought out but we need to focus on the moves that will move the ball ASAP.
- A wonderful piece of work. But transportation needs more work. It is the bull in the china closet but is being treated like a puppy. Thanks for providing the opportunity for comment

NOTES FROM MEETINGS

Public Meetings

Climate Action Plan (CAP 2.0) Advisory Committee Meeting Notes, March 20, 2019 [to be published]

City Council Study Session for Climate Action Plan 2.0, March 26, 2019
File ID: 19-0652

Joint Info Study Session for the Sustainability, Planning, and Bicycle and Pedestrian Advisory Commissions
File ID19-0622

Community Meeting, March 23, 2019
See page 53 of this Attachment

Focus Group: Developer Outreach Meeting, April 8, 2019
See page 67 of this Attachment

Focus Group: Business Outreach Meeting, April 11, 2019
See page 78 of this Attachment

Informal Meetings

Rotary Club Meeting, April 2, 2019
See page 89 of this Attachment

Unitarian Universalist Fellowship of Sunnyvale, April 14, 2019
See page 90 of this Attachment

Notes from Community Meeting

March 23, 2019

Title

Climate Action Playbook Community Outreach Meeting – March 21, 2019, 10 a.m. to noon

City Staff Present:

Ramana Chinnakotla

Melody Tovar

Nupur Hiremath

Elizabeth Greenfield

Attendees Present:

Seventeen (17) community members were present.

Meeting Summary:

Ramana Chinnakotla, Director of Environmental Services, in collaboration with Melody Tovar, Regulatory Programs Division Manager, and Nupur Hiremath, Environmental Programs Manager, of the City of Sunnyvale Environmental Services Department, delivered a presentation describing the structure and content of the Draft Climate Action Playbook.

The presentation covered an overview of the history of climate action in Sunnyvale and progress to date; the targets of the new Climate Action Playbook; and the proposed Strategies, Plays, targets, and Moves to reduce greenhouse gas emissions by 2050. Attendees participated in live polling and an interactive dot voting activity to indicate the Plays and Moves they were excited and concerned about (see following pages).

Attendees asked questions and made comments on the information presented, which included:

- Questions regarding the meaning and implication of terms, such as Zero Net Energy, Utility Use Tax, and electric vehicles.
- Questions about State targets, proposed Plays, and their targets.
- Requests for improved documentation of the methodology used to assess greenhouse gas emissions.
- Encouragement to engage with community groups and volunteers more effectively to enhance interest and participation in climate action.

Staff provided clarifications that no carbon offsets were included in the plan to achieve the 2050 target. Staff also explained that the Game Plan 2022, included in the Draft Playbook, is the implementation plan for the initial cycle. In addition, staff noted that the Utility Use Tax UUT would need additional study, outreach with affected stakeholders, and City Council approval before implementation.

Dot Voting Exercise Results

Meeting attendees were invited to share feedback on the Next Moves in the Game Plan 2022 of the Playbook. Each attendee was given 10 blue dot stickers to place next to Moves they were excited about and 10 red dots to place next to Moves they wanted to remove. Attendees could also provide more general comments on specific moves via post-its. The results of the Dot Voting Exercise and comments provided by attendees are summarized by Strategy below.

Strategy 1: Promoting Clean Electricity		
Play 1.1: Promote 100% clean electricity		
Next Moves		Count of Blue Dots (Excited)
1.A	Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing clean power and decarbonization programs.	6
1.B	Collaborate with SVCE to target direct access customers to shift to 100% clean electricity.	2
Play 1.2: Increase distributed solar photovoltaics and storage		
Next Moves		
1.C	Collaborate with SVCE to evaluate opportunities for energy storage and to maximize utilization of local solar supply.	11

Comments:

- Use EV Batteries for Storage – is EV friendly
- What are the outreach initiatives planned?
- Again, help renters be able to advocate for increased efficiency in residences we don't own.

**Strategy 2:
Decarbonizing Buildings**
Play 2.1: Reduce energy consumption in existing buildings

Next Moves		Count of Blue Dots (Excited)	Count of Red Dots (Remove)
2.A	Research energy disclosure and energy benchmarking requirements for commercial and multi-family residential buildings to encourage property owners and managers to invest in energy efficiency upgrades and building information systems.	4	
2.B	Advocate to regional providers of energy efficiency programs (such as Bay Area Regional Energy Network or BayREN, Silicon Valley Energy Watch or SVEW) that their offerings are more aggressively promoted to Sunnyvale residents and businesses.		

Play 2.2: Support electrification of existing buildings

Next Moves			
2.C	Develop a program to accelerate the adoption of heat pump water heaters and space heaters.	7	
2.D	Electrify municipal buildings upon rebuild or significant remodel, including the Civic Center.	1	

Play 2.3: Zero Net Energy and all-electric new construction

Next Moves			
2.E	Evaluate code and permitting processes to streamline building electrification.	4	1
2.F	Investigate the potential for implementing a differential Utility Use Tax that is at least revenue neutral, such that local taxes on electricity are lower than on natural gas, to incentivize electrification.	4	
2.G	Continue to incentivize energy efficient and high performance buildings through the Green Building Program updates.	5	1
2.H	Research a mandatory solar roof ordinance for new commercial developments.	5	

Comments:

- Benchmark! Yes!
- I just got a heat-pump water heater last October with mixed results. I am not seeing the bill savings I thought I would see, and there were additional costs to implementation than I anticipated. The lack of savings may be because my price-point comparisons are only during the winter months so far.
- Move 2.H: I'm concerned about the "cradle to grave" emissions of solar and electrical vehicles aren't included in the analysis. Can this be added in the next update?
- Move 2.G: All for incentivizing energy efficient upgrades for homeowners. Billion dollar corporations do not need rebates to implement climate action initiatives.

- I don't see this talking about e.g. weatherization upgrades of old buildings—also important for efficiency, need to incentivize

Strategy 3:**Decarbonizing Transportation & Sustainable Land Use****Play 3.1: Balance land use supply and enhance urban form**

	Next Moves	Count of Blue Dots (Excited)	Count of Red Dots (Remove)
3.A	Plan for additional housing, with the goal of diverse housing, to reduce long-distance commutes.	9	4
3.B	Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.	2	2

Play 3.2: Increase transportation options and support shared mobility

	Next Moves		
3.C	Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.	4	
3.D	Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors.	2	
3.E	Update and implement the Integrated Bicycle, Pedestrian and Safe Routes to School Plan to achieve a connected, safe and active network.	10	
3.F	Pilot and evaluate shared bicycle and scooter programs.	2	
3.G	Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.	4	
3.H	Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate.	1	
3.I	Monitor autonomous vehicle testing and deployment to inform proactive policy	1	1

Play 3.3: Increase zero-emission vehicles

	Next Moves		
3.J	Develop a Community Electric Vehicle Readiness and Infrastructure Plan.	4	
3.K	Promote and seek incentives for community adoption of electric vehicles.	2	
3.L	Electrify Municipal Fleet as vehicles are replaced and continue to seek incentives for electric vehicles and charging infrastructure.	2	

Comments:

- Balance development of new “mixed use buildings.” Do we need more retail facilities when online services are popular? For example 1) the latest redevelopment in Sunnyvale DT. 2) Kyli project in Santa Clara. Do we need these?
- Include helmets in bike/scooter rental. This would remove some hesitation of some people to use them

- Require all new housing developments to provide safe routes for bikes and pedestrians
- How is legislation around scooters going to be managed?
- Move 3.J needs more detail. How it gets us to target.
- Need a citywide shuttle
- MORE BIKE LANES offset from car lanes!!!
- It takes me 15 min to drive to work, but 1.5 hours to go via bus. Can the light rail be made faster?
- Need a people mover from Caltrain to Peery & Moffett Park
- Add bike infrastructure (separated bike lanes & bike parking locations)

Strategy 4: Managing Resources Sustainably		
Play 4.1: Achieve Zero Waste goals		
Next Moves	Count of Blue Dots (Excited)	Count of Red Dots (Remove)
4.A Implement and expand food scraps diversion programs to include additional businesses and multi-family residents.	5	
4.B Consider solid waste collection and processing improvements to increase waste diversion away from landfills as a part of service provider and facility transition planning.	2	
4.C Implement campaigns for waste prevention.	3	
Play 4.2: Ensure resilience of water supply		
Next Moves		
4.D Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with new statewide requirements.	6	
4.E Partner with Valley Water to evaluate opportunities to expand water reuse.	4	
Play 4.3: Enhance natural carbon sequestration capacity		
Next Moves		
4.F Implement the City's Urban Forest Management Plan and continue to protect and expand tree canopy.	7	
4.G Implement the City's Green Stormwater Infrastructure Plan.	3	1
Play 4.4: Shift to low carbon food		
Next Moves		
4.H Promote consumer awareness of low carbon foods.	2	1
4.I Work with large businesses to identify best practices for implementing local food gardens.	3	1

Comments:

- Can we consider tabulating and informing citizens about airline travel?
- Very important category. Gets at consumption emissions.
- Consider consumption inventory.
- Rainwater harvesting?
- Groundwater recharge initiatives?
- Encourage residents to calculate individual carbon footprint
- 4.I Identifying best practices is good, work with large businesses to subsidize locally grown food for low income families
- Need standard Food Cycle for apartments

- Reduce single-use plastics in businesses (& homes I guess too)
- Carbon capture through composting and sustainable landscaping
- Need action on building a sharing ethic
- Category needs strengthening
- Expand 4.F and 4.I to include effective carbon capture and carbon sequestration in the soil of residences and even businesses

Strategy 5:**Empowering Our Community****Play 5.1: Enhance community awareness and engagement**

Next Moves		Count of Blue Dots (Excited)	Count of Red Dots (Remove)
5.A	Pilot a targeted grassroots community engagement strategy (e.g., Cool Blocks Program) to create stronger connections between neighbors to advance climate action and emergency preparedness.	6	
5.B	Evaluate opportunities for the City to provide online resources and tools for community and small business climate action (e.g., resource center for retrofit electrification, online tool or app to track individual carbon emissions).	3	1
5.C	Create a stronger social media and web presence for Sunnyvale climate action.	2	
5.D	Implement the Sustainability Speaker Series.	2	
5.E	Evaluate and pilot a program for youth engagement on climate, building on current engagement with school classrooms and green teams.	1	
5.F	Build relationships with largest employers to collaborate on climate action, such as: (a) engaging employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects.	7	1

Play 5.2: Track and share data and tools

Next Moves			
5.G	Implement improvements for climate action data performance tracking and reporting progress to the public (e.g., community dashboard).	1	1
5.H	Publish annual greenhouse gas (GHG) inventory.	1	

Comments:

- How are residents going to access events?
- Key category
- GHG reporting belongs on city homepage
- How about public art that encourages sustainability – Chris Jorden
- Sustainable gardening and landscaping: No leaf blowers; No chemicals
- Probably need new online tool that emphasizes acting and greatest impact
- Empowering renters to get engaged. Not all of us get a say as to how our residences use energy. Help!
- Build on MYN emergency preparedness program with community engagement process
- GHG performance data needs to be prominently displayed at all city facilities
- Want to make sure that online services are accessible to all
- Not all residents have access to stable WiFi

Strategy 6: Adapting to a Changing Climate			
Play 6.1: Assess climate vulnerabilities for Sunnyvale			
Next Moves		Count of Blue Dots (Excited)	Count of Red Dots (Remove)
6.A	Review and summarize assessment products developed by the County's Silicon Valley 2.0 project and by the State.		
6.B	Participate in regional forums on climate vulnerability and adaptation.	2	
Play 6.2: Protect shoreline area from sea level rise and coastal flooding			
Next Moves			
6.C	Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.	4	
6.D	Identify shoreline protection solutions as part of Moffett Park Specific Plan update.	2	
Play 6.3: Strengthen community resiliency			
Next Moves			
6.E	Update existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.	3	
6.F	Develop a community resiliency plan.	5	2

Comments:

- Clearly identify areas at risk from sea level rise
- Basic function of government
- Need to clarify what 6D means
- Will the resiliency plan be separate from CAP
- Valley water should expedite Bike/Ped on East and West Channels
- Great to see regional collaboration listed here

Live Polling Results from Community Meeting*March 23, 2019*

Number of Meeting Attendees: 17

Number of Poll Participants: 12

Source: Zeetings Live Polling Software

Number	Question	Answer	Responses	Type	Status
1	1. How did you get to today's meeting?	I drove	6	Multiple Choice	Active
1	1. How did you get to today's meeting?	I rode a bike/scooter	3	Multiple Choice	Active
1	1. How did you get to today's meeting?	I walked	0	Multiple Choice	Active
1	1. How did you get to today's meeting?	I used my ruby slippers	0	Multiple Choice	Active
1	1. How did you get to today's meeting?	I flew on my zero emissions broomstick	1	Multiple Choice	Active
2	2. Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is not ambitious enough.	5	Multiple Choice	Active
2	2. Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is appropriate.	3	Multiple Choice	Active
2	2. Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is too ambitious.	0	Multiple Choice	Active
2	2. Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Unsure	2	Multiple Choice	Active
3	3. Which Plays are you most excited about?	Play 1.1: Promote 100% clean electricity	5	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 1.2: Increase distributed solar photovoltaics and storage	3	Multiple Selection	Active

Number	Question	Answer	Responses	Type	Status
3	3. Which Plays are you most excited about?	Play 2.1: Reduce energy consumption in existing buildings	4	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 2.2: Support electrification of existing buildings	5	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 2.3: Zero Net Energy and all-electric new construction	4	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 3.1: Balance land use supply and enhance urban form	2	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 3.2: Increase transportation options and support shared mobility	8	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 3.3: Increase zero-emission vehicles	4	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 4.1: Achieve zero waste goals	3	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 4.2: Ensure resilience of water supply	2	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 4.3: Enhance natural carbon sequestration capacity	3	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 4.4: Shift to low carbon food	3	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 5.1: Enhance community awareness and engagement	6	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 5.2: Track and share data and tools	3	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 6.1: Assess climate vulnerabilities for Sunnyvale	4	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 6.2: Protect shoreline area from sea level rise and coastal flooding	2	Multiple Selection	Active
3	3. Which Plays are you most excited about?	Play 6.3: Strengthen community resiliency	2	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 1.1: Promote 100% clean electricity	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 1.2: Increase distributed solar ☐ photovoltaics and storage	0	Multiple Selection	Active

Number	Question	Answer	Responses	Type	Status
4	4. Which Plays are you most concerned about?	Play 2.1: Reduce energy consumption in existing buildings	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 2.2: Support electrification of existing buildings	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 2.3: Zero Net Energy and all-electric new construction	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 3.1: Balance land use supply and enhance urban form	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 3.2: Increase transportation options and support shared mobility	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 3.3: Increase zero-emission vehicles	1	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 4.1: Achieve zero waste goals	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 4.2: Ensure resilience of water supply	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 4.3: Enhance natural carbon sequestration capacity	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 4.4: Shift to low carbon food	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 5.1: Enhance community awareness and engagement	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 5.2: Track and share data and tools	1	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 6.1: Assess climate vulnerabilities for Sunnyvale	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 6.2: Protect shoreline area from sea level rise and coastal flooding	0	Multiple Selection	Active
4	4. Which Plays are you most concerned about?	Play 6.3: Strengthen community resiliency	0	Multiple Selection	Active
5	5. Given what you have now learned about the Strategies and Plays, what do you think of Sunnyvale's targets of reducing emissions by 80% by 2050 (carbon neutrality)?	Target is not ambitious enough.	6	Multiple Choice	Active

Number	Question	Answer	Responses	Type	Status
5	5. Given what you have now learned about the Strategies and Plays, what do you think of Sunnyvale's targets of reducing emissions by 80% by 2050 (carbon neutrality)?	Target is appropriate.	4	Multiple Choice	Active
5	5. Given what you have now learned about the Strategies and Plays, what do you think of Sunnyvale's targets of reducing emissions by 80% by 2050 (carbon neutrality)?	Target is too ambitious.	0	Multiple Choice	Active
5	5. Given what you have now learned about the Strategies and Plays, what do you think of Sunnyvale's targets of reducing emissions by 80% by 2050 (carbon neutrality)?	Unsure	2	Multiple Choice	Active
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is too ambitious.	0	Multiple Choice	5
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Unsure.	1	Multiple Choice	5

Notes from Focus Group: Developer Outreach Meeting
April 8, 2019

Title

Climate Action Playbook Developer Outreach Meeting – April 8, 2019, 10 a.m. to noon

City Staff Present:

Ramana Chinnakotla

Trudi Ryan

Melody Tovar

Nupur Hiremath

Elizabeth Greenfield

Attendees Present:

Patty Rhodes, Juniper

Peter Larko, JP DiNapoli Companies Inc.

Dan Deibel, Olympic Residential

Meeting Summary:

Ramana Chinnakotla, Director of Environmental Services, in collaboration with Melody Tovar, Regulatory Programs Division Manager, and Nupur Hiremath, Environmental Programs Manager, of the City of Sunnyvale Environmental Services Department, delivered a presentation describing the structure and content of the Draft Climate Action Playbook.

The presentation covered an overview of the history of climate action in Sunnyvale and progress to date; the targets of the new Climate Action Playbook; and the proposed Strategies, Plays, targets, and Moves to reduce greenhouse gas emissions by 2050. Attendees participated in live polling and an interactive dot voting activity to indicate the Plays and Moves they were excited and concerned about (see following pages).

Attendees asked questions and made comments on the information presented, which included:

- Questions about the renewable energy portfolio difference between Silicon Valley Clean Energy (SVCE) and Pacific Gas & Electric (PG&E).
- Clarification of the meaning of Play 3.1 - Balance land use supply and enhance urban form.
- Clarification of the definition of Zero Net Energy and the feasibility of achieving it for high-rise buildings with high load but limited area for installing onsite rooftop solar.
- Clarification on whether onsite electricity generation from natural gas would be exempt from efforts to discourage natural gas use.
- Clarification on the meaning of Play 4.4 - Shift to low carbon food.
- Question about the process for adopting a mandatory solar ordinance.
- Comments about the challenges facing decarbonizing transportation, including shrinking bus service, the regional scope of the issue, and limited public transportation options available in Sunnyvale.
- Clarifications about potential funding sources for the Playbook, including carbon impact fees.
- Question about whether the Climate Action Playbook would apply to projects already approved but not yet built.

Dot Voting Exercise Results

Meeting attendees were invited to share feedback on the Next Moves in the Game Plan 2022 of the Playbook. Each attendee was given 10 blue dot stickers to place next to Moves they were excited about and 10 red dots to place next to Moves they wanted to remove. Attendees could also provide more general comments on specific moves via post-its. The results of the Dot Voting Exercise and comments provided by attendees are summarized by Strategy below.

Strategy 1: Promoting Clean Electricity		
Play 1.1: Promote 100% clean electricity		
Next Moves		Count of Blue Dots (Excited)
		Count of Red Dots (Remove)
1.A	Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing clean power and decarbonization programs.	
1.B	Collaborate with SVCE to target direct access customers to shift to 100% clean electricity.	
Play 1.2: Increase distributed solar photovoltaics and storage		
Next Moves		
1.C	Collaborate with SVCE to evaluate opportunities for energy storage and to maximize utilization of local solar supply.	1

Comments:

None.

Strategy 2:
Decarbonizing Buildings
Play 2.1: Reduce energy consumption in existing buildings

Next Moves		Count of Blue Dots (Excited)	Count of Red Dots (Remove)
2.A	Research energy disclosure and energy benchmarking requirements for commercial and multi-family residential buildings to encourage property owners and managers to invest in energy efficiency upgrades and building information systems.	2	
2.B	Advocate to regional providers of energy efficiency programs (such as Bay Area Regional Energy Network or BayREN, Silicon Valley Energy Watch or SVEW) that their offerings are more aggressively promoted to Sunnyvale residents and businesses.		

Play 2.2: Support electrification of existing buildings

Next Moves			
2.C	Develop a program to accelerate the adoption of heat pump water heaters and space heaters.	1	
2.D	Electrify municipal buildings upon rebuild or significant remodel, including the Civic Center.	1	

Play 2.3: Zero Net Energy and all-electric new construction

Next Moves			
2.E	Evaluate code and permitting processes to streamline building electrification.		
2.F	Investigate the potential for implementing a differential Utility Use Tax that is at least revenue neutral, such that local taxes on electricity are lower than on natural gas, to incentivize electrification.	2	
2.G	Continue to incentivize energy efficient and high performance buildings through the Green Building Program updates.	3	
2.H	Research a mandatory solar roof ordinance for new commercial developments.		1

Comments:

None.

Strategy 3:**Decarbonizing Transportation & Sustainable Land Use****Play 3.1: Balance land use supply and enhance urban form**

	Next Moves	Count of Blue Dots (Excited)	Count of Red Dots (Remove)
3.A	Plan for additional housing, with the goal of diverse housing, to reduce long-distance commutes.	2	
3.B	Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.		

Play 3.2: Increase transportation options and support shared mobility

	Next Moves		
3.C	Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.		
3.D	Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors.	3	
3.E	Update and implement the Integrated Bicycle, Pedestrian and Safe Routes to School Plan to achieve a connected, safe and active network.		
3.F	Pilot and evaluate shared bicycle and scooter programs.		
3.G	Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.	1	
3.H	Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate.	2	
3.I	Monitor autonomous vehicle testing and deployment to inform proactive policy		

Play 3.3: Increase zero-emission vehicles

	Next Moves		
3.J	Develop a Community Electric Vehicle Readiness and Infrastructure Plan.	1	
3.K	Promote and seek incentives for community adoption of electric vehicles.		
3.L	Electrify Municipal Fleet as vehicles are replaced and continue to seek incentives for electric vehicles and charging infrastructure.		

Comments:

None.

**Strategy 4:
Managing Resources Sustainably**
Play 4.1: Achieve Zero Waste goals

	Next Moves	Count of Blue Dots (Excited)	Count of Red Dots (Remove)
4.A	Implement and expand food scraps diversion programs to include additional businesses and multi-family residents.		
4.B	Consider solid waste collection and processing improvements to increase waste diversion away from landfills as a part of service provider and facility transition planning.		
4.C	Implement campaigns for waste prevention.		

Play 4.2: Ensure resilience of water supply

	Next Moves		
4.D	Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with new statewide requirements.		
4.E	Partner with Valley Water to evaluate opportunities to expand water reuse.		

Play 4.3: Enhance natural carbon sequestration capacity

	Next Moves		
4.F	Implement the City's Urban Forest Management Plan and continue to protect and expand tree canopy.		
4.G	Implement the City's Green Stormwater Infrastructure Plan.		

Play 4.4: Shift to low carbon food

	Next Moves		
4.H	Promote consumer awareness of low carbon foods.		
4.I	Work with large businesses to identify best practices for implementing local food gardens.		

Comments:

None.

Strategy 5: Empowering Our Community		
Play 5.1: Enhance community awareness and engagement		
Next Moves	Count of Blue Dots (Excited)	Count of Red Dots (Remove)
5.A Pilot a targeted grassroots community engagement strategy (e.g., Cool Blocks Program) to create stronger connections between neighbors to advance climate action and emergency preparedness.		
5.B Evaluate opportunities for the City to provide online resources and tools for community and small business climate action (e.g., resource center for retrofit electrification, online tool or app to track individual carbon emissions).		
5.C Create a stronger social media and web presence for Sunnyvale climate action.		
5.D Implement the Sustainability Speaker Series.	1	
5.E Evaluate and pilot a program for youth engagement on climate, building on current engagement with school classrooms and green teams.	2	
5.F Build relationships with largest employers to collaborate on climate action, such as: (a) engaging employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects.		
Play 5.2: Track and share data and tools		
Next Moves		
5.G Implement improvements for climate action data performance tracking and reporting progress to the public (e.g., community dashboard).		
5.H Publish annual greenhouse gas (GHG) inventory.		

Comments:

None.

Strategy 6: Adapting to a Changing Climate		
Play 6.1: Assess climate vulnerabilities for Sunnyvale		
Next Moves		Count of Blue Dots (Excited)
		Count of Red Dots (Remove)
6.A	Review and summarize assessment products developed by the County's Silicon Valley 2.0 project and by the State.	
6.B	Participate in regional forums on climate vulnerability and adaptation.	
Play 6.2: Protect shoreline area from sea level rise and coastal flooding		
Next Moves		
6.C	Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.	
6.D	Identify shoreline protection solutions as part of Moffett Park Specific Plan update.	
Play 6.3: Strengthen community resiliency		
Next Moves		
6.E	Update existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.	
6.F	Develop a community resiliency plan.	

Comments:

None.

Live Polling Results from Developer Meeting*April 15, 2019*

Number of Meeting Attendees: 3

Number of Poll Participants: 3

Source: Zeetings Live Polling Software

Number	Question	Answer	Responses	Type	Status
1	Test question: How did you get here today?	I drove my car	1	Multiple Choice	Active
1	Test question: How did you get here today?	I drove in my electric/zero emissions car	1	Multiple Choice	Active
1	Test question: How did you get here today?	I biked	0	Multiple Choice	Active
1	Test question: How did you get here today?	I walked	0	Multiple Choice	Active
1	Test question: How did you get here today?	I used my ruby slippers	0	Multiple Choice	Active
1	Test question: How did you get here today?	I flew on my zero emissions broomstick	0	Multiple Choice	Active
2	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is not ambitious enough.	0	Multiple Choice	Active
2	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is appropriate.	0	Multiple Choice	Active
2	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is too ambitious.	0	Multiple Choice	Active
2	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Unsure.	2	Multiple Choice	Active
3	Which Plays are you excited about?	Play 1.1: Promote 100% clean electricity	1	Multiple Selection	Active

Number	Question	Answer	Responses	Type	Status
3	Which Plays are you excited about?	Play 1.2: Increase distributed solar ☑ photovoltaics and storage	1	Multiple Selection	Active
3	Which Plays are you excited about?	Play 2.1: Reduce energy consumption in existing buildings	3	Multiple Selection	Active
3	Which Plays are you excited about?	Play 2.2: Support electrification of existing buildings	2	Multiple Selection	Active
3	Which Plays are you excited about?	Play 2.3: Zero Net Energy and all-electric new construction	1	Multiple Selection	Active
3	Which Plays are you excited about?	Play 3.1: Balance land use supply and enhance urban form	2	Multiple Selection	Active
3	Which Plays are you excited about?	Play 3.2: Increase transportation options and support shared mobility	3	Multiple Selection	Active
3	Which Plays are you excited about?	Play 3.3: Increase zero-emission vehicles	2	Multiple Selection	Active
3	Which Plays are you excited about?	Play 4.1: Achieve zero waste goals	0	Multiple Selection	Active
3	Which Plays are you excited about?	Play 4.2: Ensure resilience of water supply	0	Multiple Selection	Active
3	Which Plays are you excited about?	Play 4.3: Enhance natural carbon sequestration capacity	0	Multiple Selection	Active
3	Which Plays are you excited about?	Play 4.4: Shift to low carbon food	0	Multiple Selection	Active
3	Which Plays are you excited about?	Play 5.1: Enhance community awareness and engagement	2	Multiple Selection	Active
3	Which Plays are you excited about?	Play 5.2: Track and share data and tools	2	Multiple Selection	Active
3	Which Plays are you excited about?	Play 6.1: Assess climate vulnerabilities for Sunnyvale	0	Multiple Selection	Active
3	Which Plays are you excited about?	Play 6.2: Protect shoreline area from sea level rise and coastal flooding	1	Multiple Selection	Active
3	Which Plays are you excited about?	Play 6.3: Strengthen community resiliency	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 1.1: Promote 100% clean electricity	0	Multiple Selection	Active

Number	Question	Answer	Responses	Type	Status
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 1.2: Increase distributed solar ☒ photovoltaics and storage	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 2.1: Reduce energy consumption in existing buildings	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 2.2: Support electrification of existing buildings	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 2.3: Zero Net Energy and all-electric new construction	1	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 3.1: Balance land use supply and enhance urban form	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 3.2: Increase transportation options and support shared mobility	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 3.3: Increase zero-emission vehicles	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 4.1: Achieve zero waste goals	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 4.2: Ensure resilience of water supply	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 4.3: Enhance natural carbon sequestration capacity	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 4.4: Shift to low carbon food	3	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 5.1: Enhance community awareness and engagement	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 5.2: Track and share data and tools	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 6.1: Assess climate vulnerabilities for Sunnyvale	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 6.2: Protect shoreline area from sea level rise and coastal flooding	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 6.3: Strengthen community resiliency	0	Multiple Selection	Active

Number	Question	Answer	Responses	Type	Status
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is not ambitious enough.	0	Multiple Choice	Active
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is appropriate.	3	Multiple Choice	Active
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is too ambitious.	0	Multiple Choice	Active
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Unsure.	0	Multiple Choice	Active
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Unsure.	1	Multiple Choice	Active

Notes from Focus Group: Business Outreach Meeting

April 11, 2019

Title

Climate Action Playbook Business Outreach Meeting – April 11, 2019, 8:30 a.m. to 10:30 a.m.

Staff Present:

Nupur Hiremath
Elizabeth Greenfield
Olivia Thomas
Maria Rodriguez
Connie Verceles

Attendees Present:

Cindy O'Leary, XP Power
Lauren Sparandara, Google
Layla Monajemi, Juniper Networks
Angela Rausch, resident

Meeting Summary:

Nupur Hiremath, Environmental Programs Manager at the City of Sunnyvale Environmental Services Department, delivered a presentation describing the structure and content of the Draft Climate Action Playbook.

The presentation covered an overview of the history of climate action in Sunnyvale and progress to date; the targets of the new Climate Action Playbook; and the proposed Strategies, Plays, targets, and Moves to reduce greenhouse gas emissions by 2050. Attendees participated in live polling and an interactive dot voting activity to indicate the Plays and Moves they were excited and concerned about (see following pages).

- Attendees asked questions and made comments on the information presented, which included: Concern about discouraging all natural gas use, specifically on-site natural gas used for electricity generation.
- Questions about the timeline of implementation of the Utility Use Tax (UUT).
- Questions about how the ambitious vehicle miles traveled (VMT) reduction goals will be met, and how emissions reductions are measured.
- Comment about California Public Utility Commission (CPUC)-mandated exit fees that make participation in Silicon Valley Clean Energy (SVCE) less attractive for businesses.
- Question about whether carbon impact fees would include embodied carbon.
- Question about where to access information about the FoodCycle program.

Dot Voting Exercise Results

Meeting attendees were invited to share feedback on the Next Moves in the Game Plan 2022 of the Playbook. Each attendee was given 10 blue dot stickers to place next to Moves they were excited about and 10 red dots to place next to Moves they wanted to remove. Attendees could also provide more general comments on specific moves via post-its. The results of the Dot Voting Exercise and comments provided by attendees are summarized by Strategy below.

Strategy 1: Promoting Clean Electricity		
Play 1.1: Promote 100% clean electricity		
Next Moves		Count of Blue Dots (Excited)
		Count of Red Dots (Remove)
1.A	Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing clean power and decarbonization programs.	1
1.B	Collaborate with SVCE to target direct access customers to shift to 100% clean electricity.	1
Play 1.2: Increase distributed solar photovoltaics and storage		
Next Moves		
1.C	Collaborate with SVCE to evaluate opportunities for energy storage and to maximize utilization of local solar supply.	1

Comments:

- Collaboration with SVCE without CPUC's engagement might result in significant business impact. The exist [sic] fee that SVCE's customers are charged is mandated by CPUC.

Strategy 2: Decarbonizing Buildings		
Play 2.1: Reduce energy consumption in existing buildings		
Next Moves		Count of Blue Dots (Excited)
		Count of Red Dots (Remove)
2.A	Research energy disclosure and energy benchmarking requirements for commercial and multi-family residential buildings to encourage property owners and managers to invest in energy efficiency upgrades and building information systems.	1
2.B	Advocate to regional providers of energy efficiency programs (such as Bay Area Regional Energy Network or BayREN, Silicon Valley Energy Watch or SVEW) that their offerings are more aggressively promoted to Sunnyvale residents and businesses.	1
Play 2.2: Support electrification of existing buildings		
Next Moves		
2.C	Develop a program to accelerate the adoption of heat pump water heaters and space heaters.	
2.D	Electrify municipal buildings upon rebuild or significant remodel, including the Civic Center.	
Play 2.3: Zero Net Energy and all-electric new construction		
Next Moves		
2.E	Evaluate code and permitting processes to streamline building electrification.	2
2.F	Investigate the potential for implementing a differential Utility Use Tax that is at least revenue neutral, such that local taxes on electricity are lower than on natural gas, to incentivize electrification.	2
2.G	Continue to incentivize energy efficient and high performance buildings through the Green Building Program updates.	3
2.H	Research a mandatory solar roof ordinance for new commercial developments.	1

Comments:

- Local tax on natural gas used for onsite power generation technologies should be treated differently than NG used for core purposes.

Strategy 3:**Decarbonizing Transportation & Sustainable Land Use****Play 3.1: Balance land use supply and enhance urban form**

Next Moves		Count of Blue Dots (Excited)	Count of Red Dots (Remove)
3.A	Plan for additional housing, with the goal of diverse housing, to reduce long-distance commutes.		
3.B	Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions.	1	1

Play 3.2: Increase transportation options and support shared mobility

Next Moves			
3.C	Enhance City Transportation Demand Management (TDM) program implementation and monitoring to facilitate further reductions in single-occupant automobile trips, citywide.		
3.D	Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile strategies in over two-thirds of the cross-city corridors.		
3.E	Update and implement the Integrated Bicycle, Pedestrian and Safe Routes to School Plan to achieve a connected, safe and active network.		
3.F	Pilot and evaluate shared bicycle and scooter programs.		
3.G	Pilot shuttle service in Peery Park and consider options for expansion of a similar service in other areas undergoing redevelopment.		
3.H	Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers and apply as appropriate.		
3.I	Monitor autonomous vehicle testing and deployment to inform proactive policy		

Play 3.3: Increase zero-emission vehicles

Next Moves			
3.J	Develop a Community Electric Vehicle Readiness and Infrastructure Plan.		
3.K	Promote and seek incentives for community adoption of electric vehicles.		
3.L	Electrify Municipal Fleet as vehicles are replaced and continue to seek incentives for electric vehicles and charging infrastructure.		

Comments:

None.

**Strategy 4:
Managing Resources Sustainably**
Play 4.1: Achieve Zero Waste goals

	Next Moves	Count of Blue Dots (Excited)	Count of Red Dots (Remove)
4.A	Implement and expand food scraps diversion programs to include additional businesses and multi-family residents.	2	
4.B	Consider solid waste collection and processing improvements to increase waste diversion away from landfills as a part of service provider and facility transition planning.	1	
4.C	Implement campaigns for waste prevention.	1	

Play 4.2: Ensure resilience of water supply

	Next Moves		
4.D	Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with new statewide requirements.		
4.E	Partner with Valley Water to evaluate opportunities to expand water reuse.	1	

Play 4.3: Enhance natural carbon sequestration capacity

	Next Moves		
4.F	Implement the City's Urban Forest Management Plan and continue to protect and expand tree canopy.	2	
4.G	Implement the City's Green Stormwater Infrastructure Plan.		

Play 4.4: Shift to low carbon food

	Next Moves		
4.H	Promote consumer awareness of low carbon foods.	1	
4.I	Work with large businesses to identify best practices for implementing local food gardens.		

Comments:

- Consider deconstruction requirement

Strategy 5: Empowering Our Community		
Play 5.1: Enhance community awareness and engagement		
Next Moves	Count of Blue Dots (Excited)	Count of Red Dots (Remove)
5.A Pilot a targeted grassroots community engagement strategy (e.g., Cool Blocks Program) to create stronger connections between neighbors to advance climate action and emergency preparedness.		
5.B Evaluate opportunities for the City to provide online resources and tools for community and small business climate action (e.g., resource center for retrofit electrification, online tool or app to track individual carbon emissions).	1	
5.C Create a stronger social media and web presence for Sunnyvale climate action.		
5.D Implement the Sustainability Speaker Series.	2	
5.E Evaluate and pilot a program for youth engagement on climate, building on current engagement with school classrooms and green teams.	1	
5.F Build relationships with largest employers to collaborate on climate action, such as: (a) engaging employees to participate in sustainability initiatives; (b) encouraging and facilitating investment in climate action programs or projects.	1	
Play 5.2: Track and share data and tools		
Next Moves		
5.G Implement improvements for climate action data performance tracking and reporting progress to the public (e.g., community dashboard).		
5.H Publish annual greenhouse gas (GHG) inventory.		

Comments:

None.

Strategy 6: Adapting to a Changing Climate			
Play 6.1: Assess climate vulnerabilities for Sunnyvale			
Next Moves		Count of Blue Dots (Excited)	Count of Red Dots (Remove)
6.A	Review and summarize assessment products developed by the County's Silicon Valley 2.0 project and by the State.		
6.B	Participate in regional forums on climate vulnerability and adaptation.		
Play 6.2: Protect shoreline area from sea level rise and coastal flooding			
Next Moves			
6.C	Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.		
6.D	Identify shoreline protection solutions as part of Moffett Park Specific Plan update.		
Play 6.3: Strengthen community resiliency			
Next Moves			
6.E	Update existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.		
6.F	Develop a community resiliency plan.		

Comments:

None.

Live Polling Results from Business Meeting*April 11, 2019*

Number of Meeting Attendees: 4

Number of Poll Participants:

Source: Zeetings Live Polling Software

Number	Question	Answer	Responses	Type	Status
1	Test: How did you get here today?	I drove	6	Multiple Choice	Active
1	Test: How did you get here today?	I drove in my zero emissions car	6	Multiple Choice	Active
1	Test: How did you get here today?	I biked	2	Multiple Choice	Active
1	Test: How did you get here today?	I used my ruby slippers	1	Multiple Choice	Active
1	Test: How did you get here today?	I flew on my zero emissions broomstick	1	Multiple Choice	Active
2	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is not ambitious enough.	10	Multiple Choice	Active
2	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is appropriate.	4	Multiple Choice	Active
2	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is too ambitious.	0	Multiple Choice	Active
2	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Unsure.	0	Multiple Choice	Active
3	Which Plays are you excited about?	Play 1.1: Promote 100% clean electricity	7	Multiple Selection	Active
3	Which Plays are you excited about?	Play 1.2: Increase distributed solar photovoltaics and storage	9	Multiple Selection	Active

ATTACHMENT 7

Number	Question	Answer	Responses	Type	Status
3	Which Plays are you excited about?	Play 2.1: Reduce energy consumption in existing buildings	11	Multiple Selection	Active
3	Which Plays are you excited about?	Play 2.2: Support electrification of existing buildings	12	Multiple Selection	Active
3	Which Plays are you excited about?	Play 2.3: Zero Net Energy and all-electric new construction	13	Multiple Selection	Active
3	Which Plays are you excited about?	Play 3.1: Balance land use supply and enhance urban form	7	Multiple Selection	Active
3	Which Plays are you excited about?	Play 3.2: Increase transportation options and support shared mobility	17	Multiple Selection	Active
3	Which Plays are you excited about?	Play 3.3: Increase zero-emission vehicles	6	Multiple Selection	Active
3	Which Plays are you excited about?	Play 4.1: Achieve zero waste goals	5	Multiple Selection	Active
3	Which Plays are you excited about?	Play 4.2: Ensure resilience of water supply	7	Multiple Selection	Active
3	Which Plays are you excited about?	Play 4.3: Enhance natural carbon sequestration capacity	7	Multiple Selection	Active
3	Which Plays are you excited about?	Play 4.4: Shift to low carbon food	6	Multiple Selection	Active
3	Which Plays are you excited about?	Play 5.1: Enhance community awareness and engagement	11	Multiple Selection	Active
3	Which Plays are you excited about?	Play 5.2: Track and share data and tools	8	Multiple Selection	Active
3	Which Plays are you excited about?	Play 6.1: Assess climate vulnerabilities for Sunnyvale	4	Multiple Selection	Active
3	Which Plays are you excited about?	Play 6.2: Protect shoreline area from sea level rise and coastal flooding	8	Multiple Selection	Active
3	Which Plays are you excited about?	Play 6.3: Strengthen community resiliency	5	Multiple Selection	Active
3	Which Plays are you excited about?	None of the above	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 1.1: Promote 100% clean electricity	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 1.2: Increase distributed solar photovoltaics and storage	0	Multiple Selection	Active

Number	Question	Answer	Responses	Type	Status
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 2.1: Reduce energy consumption in existing buildings	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 2.2: Support electrification of existing buildings	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 2.3: Zero Net Energy and all-electric new construction	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 3.1: Balance land use supply and enhance urban form	1	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 3.2: Increase transportation options and support shared mobility	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 3.3: Increase zero-emission vehicles	1	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 4.1: Achieve zero waste goals	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 4.2: Ensure resilience of water supply	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 4.3: Enhance natural carbon sequestration capacity	1	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 4.4: Shift to low carbon food	3	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 5.1: Enhance community awareness and engagement	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 5.2: Track and share data and tools	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 6.1: Assess climate vulnerabilities for Sunnyvale	0	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 6.2: Protect shoreline area from sea level rise and coastal flooding	1	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	Play 6.3: Strengthen community resiliency	1	Multiple Selection	Active
4	Which Plays do you think the City should not pursue (i.e., remove from the Playbook)?	None of the above	13	Multiple Selection	Active

Number	Question	Answer	Responses	Type	Status
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is not ambitious enough.	12	Multiple Choice	Active
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is appropriate.	7	Multiple Choice	Active
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Target is too ambitious.	0	Multiple Choice	Active
5	Sunnyvale's community-wide emissions are currently at 28% below 1990 levels. With the Climate Action Playbook, the City is proposing to achieve an 80% reduction by 2050. What do you think about the City's proposed target?	Unsure.	1	Multiple Choice	Active

Notes from Informal Meeting at the Rotary Club

April 2, 2019

Title

Climate Action Playbook Informal Outreach Meeting with Rotary Club – April 8, 2019, 12:30 p.m. to 1 p.m.

City Staff Present:

Melody Tovar
Nupur Hiremath

Attendees Present:

Twenty-six (26) Rotary members were present.

Meeting Summary:

Melody Tovar, Regulatory Programs Division Manager, and Nupur Hiremath, Environmental Programs Manager, delivered a presentation to the Sunnyvale Rotary Club at the Elks Lodge on April 2, 2019 from 12:30 p.m. to 1 p.m. describing the structure and content of the Draft Climate Action Playbook.

The presentation covered an overview of the history of climate action in Sunnyvale and progress to date; the targets of the new Climate Action Playbook; and the proposed Strategies, Plays, targets, and Moves to reduce greenhouse gas emissions by 2050. Attendees participated in live polling with a show of hands to indicate their position on climate action in Sunnyvale.

Show of Hands Poll Results

Meeting attendees were asked to participate in live polling with a show of hands for the following questions:

1. What do you think about the City's current efforts to address climate change locally?

Responses (multiple choice)	Count of Hands
I am supportive	19
I am supportive, but have concerns	0
I am not supportive	0
Unsure	0

2. What do you think of Sunnyvale's proposal to meet the State's long-term target of reducing emissions 80% below 1990 levels by 2050 (carbon neutrality)?

Responses (multiple choice)	Count of Hands
Target is appropriate	17
Target is too ambitious	0
Target is not ambitious enough	1
Unsure	3

**Notes from Informal Meeting at the Unitarian Universalist Fellowship of
Sunnyvale
April 14, 2019**

Title

Climate Action Playbook Informal Outreach Meeting with Unitarian Universalist Fellowship of Sunnyvale
– April 14, 2019, 10:45 a.m. to noon.

City Staff Present:

Nupur Hiremath
Elizabeth Greenfield

Attendees Present:

Twenty-seven (27) individuals were present.

Meeting Summary:

Nupur Hiremath, Environmental Programs Manager, and Elizabeth Greenfield, Sustainability Fellow, delivered a presentation to the Unitarian Universalist Fellowship of Sunnyvale congregation at their church on April 14, 2019 from 10:45 a.m. to noon describing the structure and content of the Draft Climate Action Playbook.

The presentation covered an overview of the history of climate action in Sunnyvale and progress to date; the targets of the new Climate Action Playbook; and the proposed Strategies, Plays, targets, and Moves to reduce greenhouse gas emissions by 2050. Attendees participated in live polling with a show of hands to indicate their position on climate action in Sunnyvale.

Show of Hands Poll Results

Meeting attendees were asked to participate in live polling with a show of hands for the following questions:

1. What do you think about the City's current efforts to address climate change locally?

Responses (multiple choice)	Count of Hands
I am supportive	19
I am supportive, but have concerns	2
I am not supportive	0
Unsure	1

2. What do you think of Sunnyvale's proposal to meet the State's long-term target of reducing emissions 80% below 1990 levels by 2050 (carbon neutrality)?

Responses (multiple choice)	Count of Hands
Target is appropriate	7
Target is too ambitious	0
Target is not ambitious enough	12
Unsure	4