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Draft Game Plan 2028 Moves List



Strategy 1: Promoting Clean Electricity

Play 1.1 Promote 100% clean electricity

1.A 	Continue to support and steer Silicon Valley Clean Energy (SVCE) in providing electricity from a mix of carbon-free and eligible renewable sources and decarbonization programs. SVCE generates clean electricity for the Sunnyvale community and is delivered by PG&E on their existing power lines. Since SVCE’s inception, Sunnyvale has maintained a 98% residential enrollment rate in SVCE, with 2% of residents Maintaining an overall rate of 97% enrollment will ensure that Sunnyvale continues to benefit from the majority of the electricity being sourced from carbon-free power and is critical to keeping emissions from the electricity sector through programs, policy and grant funding. As the municipality with the largest SVCE customer base, the City of Sunnyvale will continue to advocate for programs that incentivize high-impact behaviors (such as installing electric he
1.B 	Collaborate with SVCE to target Direct Access (DA) 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 more carbon intense energy sources, which generates greenhouse gas (GHG) emissions. The City has limited opportunities to identify and encourage these companies, called DA customers, to switch to cleaner sources of electricity. With nearly 97% of residential customers opting into clean electricity provided by SVCE, the electricity sourced to DA customers are now a larger 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.
1.C	Implement an Organic Waste-to-Energy program at the Donald M. Somers Water Pollution Control Plant. Emissions from solid waste makes up 6% of Sunnyvale’s inventory. A lot of this comes from organic waste in the landfill stream. Currently, the Food Scrap Recycling Program diverts the food from going to landfill then converts it to liquid mash. The mash is used as fertilizer to enrich soil and as FDA-approved animal feed ingredients. The nearby WPCP facility utilizes anerobic digesters, which processes organic waste in an oxygen-free, sealed tank. This project will utilize the food mash being produced at the SMaRT Station® as fuel for the anaerobic digestors. Those digestors then produce methane that can be captured and used as fuel. Utilizing the WPCP’s anerobic digestors would create a closed-loop system for managing food waste in Sunnyvale and can reduce GHGs by processing food waste locally and feeding it back into our local systems as energy.


Play 1.2 Increase local solar photovoltaics

1.D*	Continue to enforce the solar panel requirements of the new building Reach Codes and Moffett Park Specific Plan policies to increase solar energy generation and storage in Moffett Park and throughout the community. The Moffett Park Specific Plan is an area plan for the development of the Moffett Park region of Sunnyvale. This plan was adopted by the City Council in July 2023 and will transform the Moffett Park region from primarily office use to a mixed-use area. The plan covers 1,156 acres, aims to add 20,000 housing units and will be an innovation and ecological district. The plan sets goals and guiding policies for the development of this area of Sunnyvale, which include policies that require solar and energy storage.
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Play 1.3 Increase distributed electricity storage

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1.E 	Collaborate with SVCE to evaluate opportunities for community-scale 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 is a pooled resource that supports community energy demand compared to individual energy storage. Community-scale energy storage could maximize utilization of local solar supply, smooth out electricity supply and demand discrepancies and provide other benefits.
1.F	Support a shared thermal energy system with energy storage at Moffett Park to serve as a potential model for other areas. Community-scale energy storage maximizes local solar supply and helps support a resilient power grid. In times of high-power demand, thermal energy systems operate as a storage method to reduce the load on the electrical grid. Shared thermal energy systems with energy storage supports balancing energy demand and supply while reducing peak demand energy consumption.




Strategy 2: Decarbonizing Buildings

Play 2.1 Reduce energy consumption in existing buildings

2.A 	Research and develop energy disclosure and energy benchmarking requirements for existing 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) ⁹ , 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 Ordinance ¹⁰ ; City of Berkeley’s Building Energy Saving Ordinance ¹¹) would extend the requirement to smaller buildings. Energy benchmarking provides valuable insights for 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.
2.B 	Update the local Green Building Program by FY 2024/25 to incentivize energy efficiency measures and the achievement of net zero energy in existing buildings. Sunnyvale’s award-winning Green Building Program ¹² 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 City’s Green Building Program with more rigorous pathways to qualify for incentives will drive building developers to further decarbonize to all-electric designs. The program also incentivizes other sustainability design aspects like cool roofs, bicycle infrastructure, water efficiency, etc.
2.C	Conduct a municipal GHG emissions inventory every three to five years and continue tracking measure implementation. The last municipal inventory for Sunnyvale was completed in 2014. Tracking municipal GHGs help Sunnyvale measure the GHG reductions achieved as buildings are made more efficient and energy resilient. By conducting and publicly sharing the inventory, the City is leading by example. Sunnyvale continues to renovate, remodel and build new facilities as infrastructures age. This inventory will help share the progress the City is making in reducing its own carbon footprint.


Play 2.2 Support electrification of existing buildings

2.D [†] 	Develop an engagement and incentive program to accelerate the adoption of all-electric appliances.
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	Heating space and water in buildings is the single largest use of natural gas ¹³ . 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, 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.
2.E 	Eliminate non-electric sources of power in municipal buildings upon rebuild or significant remodel. Natural gas use is the largest source of GHG emissions in the building sector. 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 Lakewood Library and Fire Station 2 are the next buildings up for remodel for City Facilities. Lakewood Library’s will have an all-electric building design and the Library is anticipated to start construction in late 2023. Fire Station 2 is in starting design consultant procurement and the scope requires it to be all-electric.
2.F	Develop and implement an existing residential building electrification strategy (RBES). The strategy should be supported by detailed existing building analysis and an electrification costs analysis to identify potential equity concerns and impacts. The analysis should also consider how to engage low and medium-income residents in electrification. The strategy will consider financing program options to support an equitable transition to all-electric buildings through additional incentives and rebates, no- or low-cost on-bill financing and innovative public-private funding models through partnerships with SVCE, BayREN and PG&E.
2.G*	Adopt an electrification ordinance for existing residential buildings by 2026. To be implemented through the building permit process which limits the expansion of natural gas infrastructure and is informed by the RBES. The ordinance can be implemented through a phased approach and could consider requiring replacement of HVAC systems, water heaters, stovetops and other appliances to be all-electric at time of replacement, upon major renovation or at time of sale. This ordinance is intended to prepare Sunnyvale residents for complying with BAAQMD Regulation 9, Rules 4 and 6.
2.H	Conduct a study to evaluate the feasibility of adopting an end-of-flow ordinance for natural gas by 2045. Work with PG&E to identify opportunities for natural gas infrastructure pruning. It will be critical as the City electrifies to ensure we reduce the chance of stranded natural gas assets. There are methane leaks associated with the infrastructure supporting natural gas appliances. If not addressed, stranded assets will continue to leak methane.
2.I	Develop and implement an existing commercial building electrification strategy (CBES). The CBES will support the development of a commercial building electrification ordinance. The strategy will be supported by a detailed commercial natural gas usage analysis, an analysis of potential impacts to the local commercial sectors via direct engagement to small and minority-owned businesses, and an electrification costs analysis. The strategy will include a financing program to support an equitable transition to all-electric buildings through additional incentives and rebates, no- or low-cost on-bill financing and innovative public-private funding models through partnerships with SVCE, BayREN and PG&E.
2.J*	Adopt an electrification ordinance for existing commercial buildings by 2026. Emissions from natural gas use in commercial buildings has been increasing over time and account for more than 20% of Sunnyvale’s emissions. An electrification ordinance implemented through the building permit process that limits expansion of natural gas infrastructure and requires appliance replacements to be all-electric where technologically feasible (exceptions can be made where all-electric alternatives do not exist or are more than 100% more expensive than the natural gas-powered replacement) can reduce emissions from this sector significantly overtime.

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2.K*	Enforce the residential and commercial electrification ordinance compliance by developing and implementing a comprehensive permitting compliance program. Compliance programs may include routine staff trainings, dedicating staff time to building inspections, charging fines for noncompliance, providing compliance checklists online and with permit applications and facilitating permitting online. A permitting compliance program is an enforcement tool to make sure adopted programs are implemented.
2.L [†]	Develop a Building Performance Standard (BPS) for existing buildings that requires electrification by 2030. Electrifying existing buildings is a critical change to transition from direct combustion of fossil fuels in favor of renewably sourced electricity. BPS requires existing buildings to meet energy performance targets. Move 2.A covers the research and groundwork for developing this type of ordinance, as well as setting a program in place. A reporting program should be developed and adopted prior to adoption of the BPS. This will allow for outreach and communication with impacted properties to be complete prior to the adoption of the ordinance.
2.M [†]	Partner with Santa Clara County, Bay Area Regional Energy Network (BayREN) and SVCE to create community-support programs to provide residents the resources and utility rate structures needed to convert to all-electric, energy efficient equipment and appliances. Providing community support programs through concierge services that may include free phone consultants, virtual and in-person assessments, turn-key installation by a city-supervised contractor, low upfront costs, on-bill financing options and labor warranties will strengthen existing partnerships with SVCE and BayREN while providing valuable resources for the community. In addition, partnering with SVCE to develop an equipment loaner program to loan out water heaters to community members while they complete electrical panel upgrades and shipping and installation of all-electric equipment will encourage more rapid conversions to all-electric equipment and appliances. Participation in these community-support programs could signify the initiation of the permit request process. The City is supporting residential electrification transition through SVCE’s utility rate partnership and the community-support programs.
Play 2.3 Achieve all-electric new construction	
2.N* 	Continue implementing and augmenting Reach Codes through a phased approach. Sunnyvale adopted Reach Codes in 2021 ¹⁴ . These codes go beyond the state requirements for green building and require all-electric new construction and increased EV and solar requirements. The Reach Codes program is intended to evolve over time to continue to support the transition from fossil-fuel to carbon free energy. Moves 2.K and 2.J are being considered as part of future iterations of Sunnyvale’s Reach Codes.









Strategy 3: Decarbonizing Transportation & Sustainable Land Use

Play 3.1 Increase opportunities for and encourage development of mixed-use sites to reduce vehicle miles per person	
3.A 	Identify areas that are most appropriate for parking strategies that discourage vehicle use, such as pricing, time limits and supply reductions. 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 that decreases car trips and is important for reducing GHG emissions from vehicle miles traveled (VMT). This Move, when implemented, will limit parking opportunities in appropriate locations while ensuring it does not create unintended disruptions.
Play 3.2 Increase transportation options and support shared mobility	

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3.B 	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. TDM describes the holistic approach by which workplaces encourage their employees to commute via alternative means, reducing employees’ inclination to drive. Existing TDM programs in Sunnyvale have mixed results. Better monitoring is needed to understand the effectiveness of current TDM programs, monitor compliance and enforce TDM requirements and implement regular data collection procedures. This data will be used to develop new TDM programs for residents and businesses.
3.C 	Advocate that regional service providers implement high quality transit service and a robust set of first- and last-mile (FLM) strategies in over two-thirds of the cross-city corridors. First- and last-mile strategies help fill in gaps in public transit networks. They range from improved transit frequency, interconnected route offerings and enhanced quality of local public transportation. FLM strategies are expected to increase ridership and reduce the number of cars on the road. Public transit will seem more attractive and viable in conjunction with FLM options that help residents and employees travel to and from transit stops seamlessly. 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 FLM mobility.
3.D* 	Implement Active Transportation Plan (ATP) 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 FLM and TDM efforts. This Move will be particularly important for creating mode shift away from personal vehicles.
3.E 	Continue to evaluate the potential for the shared bicycle and scooter pilot program as a permanent program. 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 FLM challenges. This pilot will inform the feasibility of a bike or scooter share program in select areas of Sunnyvale.
3.F 	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 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.
3.G 	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, 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 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 ¹⁵ .
3.H	Create a TDM program for City staff to promote alternative transportation modes and carpooling to the greatest extent possible. Many City staff commute to Sunnyvale from surrounding cities in single occupancy vehicles. Providing a transportation incentive program for all regular, benefited City employees that use alternative transportation could motivate staff to prioritize alternative modes of travel. Using these alternative modes reduce transportation emissions. Alternative transportation includes riding the bus, riding a bicycle, walking, ridesharing (vanpools or carpools) or a combination of these modes of transportation.

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3.I [†]	Establish and implement a plan to convert vehicle roadways to bicycle and pedestrian space to increase opportunities for active transportation in the community. Structural change to the vehicle roadways will encourage alternative transportation use. City staff will refer to the Active Transportation Plan ¹⁶ to determine priority roadways to convert to bicycle and pedestrian space. Conversion options may include buffer lanes, protected bikeways, trails, partial road closures and paths that connect to active transportation routes.
3.J [†]	Require employers with 1,000 employees and more to develop Transportation Demand Management Plans. This will likely require an ordinance to implement. The City will support the largest employers in Sunnyvale to develop and implement TDM programs to help reduce the incoming traffic to Sunnyvale. ¹⁷ Currently, only new developments and businesses in Sunnyvale are required to implement TDM programs. TDM plans should include subsidies for employees to bike, walk, or carpool, and consider providing free transit passes for employees.
3.K [†]	Establish tracking metrics to evaluate effectiveness of various Moves' impact on VMT and a monitoring schedule to report progress. The factors driving VMT reduction are parking strategies, transit improvements, TDM targeting commuters, and active transportation build out. Establishing tracking metrics and a monitoring schedule for these strategies will help ensure Sunnyvale stays on track and help inform future Game Plan Moves.
Play 3.3 Increase zero-emission vehicles	
3.L 	Continue implementing the Drive Electric Program and providing resources to assist and encourage community adoption of EVs. EVs charged at residential, office or public locations in Sunnyvale run on carbon-free electricity, which drastically lowers transportation-related emissions. The City will continue to work with community groups and vendors to accelerate EV adoption communitywide and improve EV adoption for renters and low-income communities through resources and incentives. The Drive Electric program ¹⁸ educates the community on EV benefits and incentives by providing educational events to help the community experience the benefits, convenience and incentives available for EVs.
3.M 	Electrify the Municipal Fleet as existing vehicles need replacement and install EV infrastructure (EVI) at municipal properties to support the electric fleet. The City has an opportunity to be a local leader in transportation decarbonization by updating its municipal fleet to EVs. The City is committed to electrifying its vehicle fleet as old fleet vehicles are phased out. The City will partner with SVCE to obtain funding and technical support for enhancing public EVI throughout the city. In addition, the City will leverage resources and information from sustainability networks, such as Climate Mayors EV Purchasing Collaborative, 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. As of 2022, Sunnyvale has replaced 11 fleet vehicles with EVs and installed 10 EVI stations for fleet vehicles.
3.N* 	Support the development of the Community EV Readiness and Infrastructure Plan and facilitate the installation of EVI. To support the development of the plan the City will: 1) Conduct a survey of existing publicly accessible EVI; 2) Identify a prioritized list of new locations for chargers with consideration for equitable distribution to low-income areas and non-single-family residents; 3) Quantify the number of publicly accessible chargers needed to support a fully electric community fleet in 2045; 4) Seek incentives and funding to support the EVI installation and work with SVCE and other partners to expand availability of funding for EVI. Begin implementation to install ~3,300 new publicly accessible chargers by 2030. City will also coordinate with PG&E and SVCE to understand infrastructure needs and challenges to installing EVI.
3.O [†]	Partner with SVCE to strengthen and expand their incentive program for EVI. In order to push Sunnyvale to a 40% adoption of EVs by 2030, the charging infrastructure will need to develop to match the pace of adoption. Incentives, technical assistance and partnerships will be key. SVCE currently is offering assistance to businesses and multifamily properties to install chargers. The City will continue to support and coordinate with SVCE to connect Sunnyvale community members to these and other similar programs.

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Play 3.4 Decarbonize off-road equipment and vehicles

3.P [†]	<p>Create a phased ordinance by 2026 to ban local operation of gasoline and diesel-powered off-road equipment by type, including banning local operation of gasoline and diesel-powered small off-road equipment (SORE) by 2028.</p> <p>SORE can range from leaf blowers, lawn mowers, construction equipment, etc. Operating a commercial lawn mower for one hour emits as much smog-forming pollution as driving a new light-duty passenger car for about 300 miles. Phasing gas and diesel-powered SORE out with clean, alternative equipment can significantly improve air quality and reduce increased emissions from this sector overtime. The ordinance should include a requirement for renewable diesel (e.g., RD99 which is a drop-in renewable fuel and readily available on West Coast) for equipment that cannot be decarbonized. California Air Resource Board (CARB) requires SORE¹⁹ sold on or after Jan. 1, 2024, to be zero-emission.</p>
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Strategy 4: Managing Resources Sustainably



Play 4.1 Achieve zero waste goals for solid waste

4.A 	<p>Implement campaign for waste reduction.</p> <p>The City’s Zero Waste Strategic Plan aims to reduce waste generated in Sunnyvale. As of 2021, the residential and commercial disposal rate is 3.6 pounds of landfill waste per person per day. 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, particularly petroleum-based 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 disincentives to guide particularly impactful consumer actions.</p>
4.B	<p>Conduct a pilot program with reusable foodware for dine-in and takeout orders.</p> <p>The City will work with Sunnyvale’s food service community to pilot reusable foodware. The pilot program will help inform businesses of options for transitioning away from use of single-use foodware. These items use numerous resources during production and disposal. The pilot will also inform decisions for an ordinance to promote reusables rather than single use articles.</p>
4.C [†]	<p>Comply with SB 1383 requirements to help the state reduce organic waste disposal 75% by 2025.</p> <p>The City offers single-family and multi-family organics collection service. By summer 2024, the entire commercial sector will have this service as well in compliance with SB 1383²⁰.</p>
4.D [†]	<p>Expand the City’s edible food recovery efforts to edible food generators beyond those required by SB 1383.</p> <p>SB1383 requires generators such as grocery stores, large businesses and restaurants to donate excess edible food to those in need. The County has a contract with Joint Venture Silicon Valley (JVSV) to recover edible food for donation, and the City currently is a part of the County’s regional food recovery program. JVSV provides a local Food Recovery Matching Tool²¹ to find services in the area. The City will continue to monitor progress and expand services where feasible.</p>
4.E [†]	<p>Continue to implement the mandatory waste diversion ordinance requiring all residents, visitors and businesses to place their discards in the appropriate container (i.e., recycle, food scraps or garbage).</p>

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	Sunnyvale’s ordinances ²¹ achieve the following goals: 1) Utilizing one hauler for recycling, food scraps, yard trimmings and garbage services; 2) Establishes color-coded and labeled containers in convenient locations for patrons, employees, and residents; 3) Train and educate tenants, residents, contractors and janitors about how to properly sort waste; and 4) Sort waste into proper containers. These requirements were phased in over two years since Jan. 1, 2022, and include monitoring of contamination by the hauler’s drivers.
Play 4.2 Ensure resilience of water supply	
4.F 	<p>Promote and seek incentives for making water conservation a way of life and set a water reduction target consistent with statewide requirements.</p> <p>California policy SB 606 and AB 1668²² establish water use objectives, provide incentives for recycled water and require water budgets. The policies emphasize water conservation as a way of life. These policies will require more reporting and more stringent water conservation targets over time. This Move supports Sunnyvale achieving compliance with these policies and preparing the community for the more frequent and severe droughts expected to occur in the region.</p>
4.G 	<p>Partner with Valley Water to evaluate opportunities to expand water reuse.</p> <p>Expanding the existing use of recycled water 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. Sunnyvale will continue to explore partnership opportunities with Valley Water to expand water reuse as well as look at options for expansion within Sunnyvale.</p>
4.H	<p>Conduct a feasibility study to assess the costs and benefits of implementing Advanced Metering Infrastructure (AMI) citywide and implement if determined feasible.</p> <p>This project will launch in 2023 to hire a consultant to assess the feasibility and cost for implementing AMI citywide. AMI will provide real time data to customers on their water consumption and will identify possible water leaks. By implementing AMI, the utility can detect water leaks, lower energy costs and address our energy distribution. Addressing the City’s vulnerability and reliability concerns need to be prioritized as change in demands occur.</p>
4.I	<p>Implement a policy that prohibits installation of non-functional turf in new commercial construction.</p> <p>As defined by the state, “non-functional turf”²³ is solely ornamental and not regularly used for recreation. It includes areas not in active use but still requiring maintenance, such as street medians and office parking lots. Non-functional turf does not include sports fields or turf regularly used for human recreational purposes or for civic or community events. Replacing turf with drought-tolerant, native plants can reduce landscape water needs by 70 to 80% at commercial sites²⁴.</p>
4.J	<p>Streamline the permitting process for rainwater catchment, dual water piping and graywater systems.</p> <p>Collected rainwater, recycled water and wastewater from your shower, bathtub and washing machine can be used for outdoor landscaping. Outdoor water use can be the highest water use for homes in Sunnyvale. Streamlining the permitting process for water saving techniques will help residents save money and water. The City will conduct outreach to notify property owners of the streamlined processes. City staff will be trained so they are prepared to quickly and accurately assess the quality of installations that may combine aspects of electrical, plumbing, roofing, landscaping and construction.</p>
4.K	<p>Adopt an ordinance requiring new construction to be built with dual plumbing, where allowable, in preparation for the availability of recycled water infrastructure.</p> <p>As the City looks for opportunities to expand recycled water infrastructure, buildings will need to be equipped to utilize the recycled water. In some cases, this might require dual plumbing. The ordinance should specify water efficiency design requirements and landscape design plans as well as irrigation system requirements.</p>

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4.L	Continue to pursue recycled water expansion including advanced recycled water production. Sunnyvale’s Clean Water Program Master Plan update will consider how the Water Pollution Control Plant can improve recycled water quality through additional treatment upgrades. Sunnyvale’s Recycle Water Feasibility study aims to identify new recycled water alignments, expanding the distribution network to reach untapped customers, thereby diminishing dependence on potable water. Furthermore, it will scout funding prospects from both state and federal sources to support the recycled water system's expansion.
Play 4.3 Enhance natural carbon sequestration capacity	
4.M 	Implement the City’s Urban Forest Management Plan and continue to protect and greatly expand tree canopy. Urban trees sequester carbon, provide shade that can lower heating- and cooling-related energy consumption in buildings, reduce stormwater runoff, serve as green features that can reduce flooding and provide an outlet to connect to nature in an urban environment. Continuing to protect and expand the tree canopy by implementing the Urban Forest Management Plan ²⁵ will improve both environmental quality and quality of life.
4.N 	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 stormwater 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 ²⁶ requires the City to develop and implement a 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 awareness of sustainable goods and services	
4.O	Update the City Purchasing Policy to be aligned with Playbook goals and develop an implementation strategy. To ensure that the City’s purchasing policies and products align with the City’s Climate Action Playbook and Zero Waste Plan, updates to the purchasing policy may be required. This would include guidance such as purchasing all-electric appliances, reducing packaging, reducing single-use plastic purchases, purchasing zero-emission vehicles, etc.
Strategy 5: Empowering Our Community	
Play 5.1 Enhance community awareness and engagement	
5.A 	Pilot a targeted grassroots community engagement strategy 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. This initiative strengthens community, advances climate action and forms resilience for natural disasters. Participants in other Bay Area communities with this type of program cut their household carbon emissions by 30% on average ²⁷ . Neighbors learn about climate action behaviors together and collectively shape a local ethic of environmental conscientiousness and preparedness.
5.B 	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. Accessibility to information plays a large role in behavioral change. Sunnyvale’s social media sparks discussions on climate action and frequently reminds followers in an approachable way about pro-environmental behaviors. Continually updating Sunnyvale’s webpages and social media accounts makes the City a dependable




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	source of information. By expanding existing efforts and creating messages in multiple languages, 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.
5.C 	Continue implementing the Sustainability Speaker Series. Since 2017, the Sustainability Speaker Series ²⁸ 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.
5.D 	Cultivate relationship between City and youth groups to engage students 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. The City could begin with engaging the Library & Recreation Teen Advisory Board and Teen Advisory Committee as well as consider partnering with and supporting the Silicon Valley Youth Climate Action group.
5.E 	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. The business sector is a large source of the City’s carbon emissions. The City 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. Emissions from this sector can be reduced by providing incentives to replace gas-powered appliances, engaging with employees through training programs and changing employee behaviors, such as turning off lights and computers at night to commuting to work via alternative modes.
5.F	Create demonstration projects within City operations to educate the community on ways to reduce emissions by leading by example. The new Lakewood branch Library will be a demonstration site for electrification. The City Hall building will also have community engagement/education aspects. The City should consider this in publicly accessible buildings.
5.G	Continue to develop and implement educational programs at the Sunnyvale Public Library that focus on environmental and sustainability topics. The Sunnyvale Public Library is a significant learning hub for residents and visitors. Expanding its existing services to include environmental education, speakers, community workshops, and energy efficient loaner programs are instrumental in reaching Sunnyvale’s carbon neutrality goals.
Play 5.2 Track and share data and tools	
5.H 	Continue reporting climate action data for the public. The City publishes emissions reduction progress on the Sunnyvale Climate Action Scoreboard ³⁰ . The City will continue to build on the functionality and storytelling components of the Scoreboard. To reflect Sunnyvale’s progress towards our climate action targets, metrics and data will be updated on the Scoreboard annually.
5.I 	Publish annual 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.

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Strategy 6: Adapting to a Changing Climate



Play 6.1 Assess climate vulnerabilities for Sunnyvale

6.A 	<p>Participate in regional forums on climate vulnerability and adaptation.</p> <p>Climate adaptation efforts necessitate regional discussion to ensure actions effectively and efficiently address risks and don’t place adjacent communities in greater harm during climate disasters. Organized regional conversations on climate adaptation are emerging, such as Bay Area Climate Adaptation Network (BayCAN), Bay Conservation & Development Commission (BCDC) 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 and legislation.</p>
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Play 6.2 Protect shoreline areas from sea level rise and coastal flooding

6.B 	<p>Collaborate with Valley Water to advance a shoreline protection project with the US Army Corps of Engineers or other partners.</p> <p>Valley Water (formerly Santa Clara Valley Water District) began its 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 Project³¹, 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.</p>
6.C	<p>Develop strategies and projects to restore, protect and expand our tidal/salt marshes and natural water ways to the Bay using as much of the existing dredged materials from the Bay as possible.</p> <p>Sea level rise leaves the bay shoreline vulnerable to impacts on our infrastructure, environment and community. To expand the City’s resilience to the threat of sea level rise, strategies should be implemented to focus on maintaining and increasing the depth of our water ways. Strategies include using the existing dredged materials and nature-based solutions to restore our tidal zones and salt marshes that are natural barriers to sea level rise³².</p>

Play 6.3 Strengthen community resilience

6.D 	<p>Update existing emergency preparedness and response plans to address climate-related impacts such as heat events, air quality issues and flooding.</p> <p>While the City has emergency response plans for some events like fire or earthquake, there are no community specific plans to address responses to extreme weather events, which may increase in frequency and severity due to climate change. These include heat waves, intense rainstorms, and flooding. This Move calls for cross-departmental collaboration to expand current community-oriented emergency preparedness plans. This will aid response to such events, with particular attention to vulnerable populations living in identified climate risk zones during natural disasters.</p>
6.E 	<p>Develop and implement a community resiliency plan.</p> <p>Climate resiliency means that residents and businesses have proactively prepared for extreme weather events such that they can withstand the duration and aftereffects 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 using an equity lens to develop strategies to help the most vulnerable populations be prepared to weather the storms of climate change.</p>

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6.F	<p>Implement a Resilience Hub Initiative.</p> <p>Collaborate with the community to create a network of community centers, neighborhoods, schools, businesses, places of worship and other trusted community sites that are models for resilience and are “ready for anything” (meaning better prepared for natural disasters, climate change and other stresses in our community as described by the USDN and NorCal Resilience Network)³³. Climate resiliency boosts local capacity to recover and rebuild from natural disasters and other emergencies. Resilience Hubs are community-serving facilities that provide infrastructure, resources and supportive programming.</p>
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