

Mayors' Commission on Climate Change  
**Community Health & Resiliency TAC Recommendations**



Community Health & Resiliency Recommendation #1 | Urban Greening & Forestry

**Expand green infrastructure<sup>1</sup> to ensure that all neighborhoods have access to green space within a quarter mile by 2030 and a baseline canopy of 25% by 2030 and 35% by 2045, starting with historically marginalized communities<sup>2</sup> and tree-deficient neighborhoods.**

### Implementation Tactics

1. **Partner with SMUD, Sacramento Tree Foundation, and other organizations to achieve 550,000 new trees by 2045**, 100,000 of which will be trees on front yards and along key transportation corridors. Prioritize planting trees in marginalized communities and leverage workforce development programs, such as community college urban forestry programs.
2. **Maintain the health of existing trees** by promoting community stewardship programs that support tree management, care, and removal through education, volunteerism, and workforce development.
3. **Implement water conservation measures** that prioritize tree growth and survival, including leak detection programs and guidelines for mulching of all city street and park trees. Partner with local organizations to host educational workshops and develop and implement a comprehensive grey water ordinance for residential landscapes and gardens by 2021.
4. **Develop or expand cash-for-grass incentives** to encourage property owners to replace lawns with water-efficient landscaping with a goal of converting 40% of existing residential lawns to native pollinator-friendly plants by 2023.
5. **Implement Urgent Action Road Diets** and utilize blighted lands and underutilized rights-of-way to expand green space for public uses, such as by implementing bioswales, pocket parks, and community gardens. Begin implementing green space pilot projects in marginalized communities by 2021.
6. **Adopt an ordinance by 2021 that requires the use of zero-emission landscaping equipment** and hand tools for residential and private properties by 2025, identifying plans for early adoption through education and incentives.
7. **Update and enforce parking lot shade ordinances** and retrofit existing barren parking lots with shade trees, or with solar shading where trees are not feasible, to meet urban heat island reduction goals and stormwater quality goals by 2023.
8. **Decrease existing impermeable surfaces by 15% by 2025** by adopting ordinances and updating design guidelines to enforce robust green infrastructure standards for residential and commercial properties, built infrastructure, and land use projects. For new pavements and existing pavements undergoing major construction, require the use of permeable paving materials by 2022.s
9. **Implement Complete Streets Plans by 2025** to increase street trees to shade roads, transit stops, and active transportation corridors, prioritizing tree-deficient areas with transit-dependent populations and locations in need of safety improvements.
10. **Collaborate with regional agencies to create and adopt a Regional Open Space and Biodiversity Plan** that establishes shared goals and a funded program to preserve, restore, expand, and maintain open space by 2030.

<sup>1</sup> Green Infrastructure includes natural areas and nature-based design features that deliver a wide range of ecosystem services including stormwater management, improved air quality, heat mitigation, and more. While green infrastructure often requires more upfront holistic planning and design, it can achieve comparable or better outcomes than gray infrastructure at lower costs.

<sup>2</sup> "Marginalized Communities" will be defined by the Equity Technical Advisory Committee.



**Expand green infrastructure to ensure that all neighborhoods have access to green space within a quarter mile by 2030 and a baseline canopy of 25% by 2030 and 35% by 2045, starting with historically marginalized communities and tree-deficient neighborhoods.**

### Desired Results & Benefits

- Cooling benefits and shading to reduce heat exposure and heat-related health impacts; encourage active transportation, public transit use, outdoor physical activity and other low-carbon, health-promoting activities; and decrease air-conditioning and related energy use and reduce energy costs.
- Urban beautification and neighborhood revitalization, which must be coupled with anti-displacement policies.
- Leverage nature-based solutions to build climate resilience.
- Increase access to public spaces, green space, and parks to increase exposure to nature, promote outdoor physical activity and play, and improve physical and mental health.

### Cost-Effectiveness

- The economic value of avoided mortality, morbidity, and electricity consumption by increasing canopy cover is an estimated \$21-49 annually per capita (McDonald et al., 2019).
- A study of future benefits and costs of a tree planting program in Chicago found that the projected value of trees, when measured by such things as increased property values and decreased energy use, is nearly three times greater than the projected costs.
- Spending just \$8 per person per year, on average, in an American city could meet the funding gap and stop the loss of urban trees and all their potential benefits (Nature Conservancy, 2017).
- In an analysis of 5 cities across the U.S., cities spent \$13-65 annually per tree and benefits ranged from \$31 to \$89 per tree (McPherson et al., 2005).
- Over the 40-year life of the ecoroof, the net benefit to the private property owner is \$404,000 in 2008 dollars. At year five, the benefit of the ecoroof to the public is estimated at \$101,600 and \$191,421 at year 40 in 2008 dollars (City of Portland, 2008).
- [City Forest Carbon Credits](#) is a new source of funding for urban forest projects with quantified benefits for GHG emissions reduction, stormwater runoff reduction, energy savings, and more.

### Overcoming Potential Hurdles

- Limited institutional capacity for community-driven tree planting and stewardship: By embedding tree planting requirements into other kinds of activities, the cities can engage other city departments and institutions, including schools and healthcare partners, to expand tree planting and stewardship efforts. The cities can also engage with community-based organizations to identify, pool, and leverage resources for tree planting and maintenance.
- Challenges in capturing socialized benefits to justify private and public costs: Utilize the multitude of research and resources on the social benefits of trees, such as public health benefits and crime prevention. Engage with trusted institutions, such as the health sector, to conduct a robust communication campaign that demonstrates the benefits and importance of trees.
- Lack of space for tree planting in marginalized communities: Engage with property owners to encourage tree planting on private property along sidewalks by connecting them to tree planting incentives and stewardship resources. Target investments to retrofit streetscapes that lack parkways for tree planting, such as reclaiming currently paved spaces for trees and green space, which may allow for additional residential density.



**Increase food security and access to healthy, affordable food for all communities while supporting a regenerative food system by sourcing 25% of food locally within a 200-mile radius by 2030 and 40% by 2045, and by reducing 50% of aggregate food waste by 2025 and 75% by 2030.**

## Implementation Tactics

1. **Develop and implement a policy that requires and incentivizes institutional buyers, particularly schools and hospitals, to achieve local food procurement targets.** Provide additional incentives for food procured within 100 miles and to local farmers and food producers for transitioning to low-carbon, climate-resilient food production practices. Further reduce emissions from food transport by partnering with the California Clean Mobility Center, other agencies, manufacturers, and food delivery companies to advance ZEV food delivery vehicles.
2. **Establish a “food recovery to food security” network** with restaurants, catering companies, convention spaces, event producers, grocery stores, local food banks, and community food hubs to reduce food waste and address food insecurity by 2025. Partner with a nonprofit to develop a mobile application that connects food insecure residents with donated food from the network. Create incentives for convenience stores in food deserts to provide healthy and affordable produce.
3. **Expand local food-related business development opportunities** by establishing an online portal to streamline new business licensing and permitting and connecting small businesses to loan programs, facade improvement grants, and technical assistance. Advocate for changes in State policies that hinder entrepreneurial ventures that increase food security.
4. **Expand community-wide composting initiatives and implement citywide food waste collection and organic waste recycling programs by 2025**, starting first with institutions and businesses while aligning local requirements with state regulations. Return at least 20% of organic waste resources back to local communities to improve soil health and water retention. Collaborate with Sacramento State and UC Davis to develop technologies and programs to support large-scale organic waste recycling initiatives in the region, such as anaerobic digesters, compost sites, or pyrolysis facilities.
5. **Create a network of community food hubs** that provide food distribution and compost collection services, as well as trainings on composting, reducing food waste, gardening, and healthy cooking. Establish one hub in each neighborhood by 2025 by leveraging existing community centers and partners, starting first with historically marginalized communities and food deserts.
6. **Adopt ordinances by 2023 or promote existing ordinances to enable urban agriculture and carbon farming techniques** that enhance the production of local, healthy food by allowing farming by right in all types of zoning and discouraging the use of synthetic pesticides and fertilizers. Through incentives, maximize space for food production on small farms, community parks, lawns, and vacant lots, including incentives to developers for rooftop gardens and vertical farming.
7. **Collaborate with county departments and other stakeholders to develop a food system impact assessment** by 2023 that includes evaluation of emissions tied to the food system and a socio-economic risk assessment of climate change impacts to the food system.
8. **Promote plant-based diets** by partnering with schools and other institutions to add plant-based options to their offerings and by working with local organizations to provide cooking classes and demonstrations at community events.



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### Desired Results & Benefits

- Reduce GHG emissions related to food production, waste, and transportation by increasing sustainable, low- or zero-carbon local food production and composting.
- Achieve critical co-benefits of increasing food security and access, improving nutrition and public health outcomes, and enabling communities to build self-sufficiency.
- Increasing food system self-sufficiency and resilience to climate-related impacts.

### Cost-Effectiveness

- Research shows that every dollar that schools spend on local foods adds between \$1.60 and \$3.12 to the local economy in the form of business profits, employee wages, investor dividends, interests/rents, and government revenue from sales and excise taxes. Studies have suggested that increased production by local food producers helps to generate additional jobs (Christensen et al., 2017; Roche et al., 2016; Kane et al., 2010).
- A study of the Sacramento region found that for every \$1 million in food produced by local farmers and sold through direct marketing, such as farmers markets, 31.8 jobs are generated, and for every \$1 million sold through indirect marketing channels, such as large-scale distributors, 10.5 jobs are generated (Hardesty et al. 2016).
- When you purchase more of your food locally, more of the money you spend remains in the local community. On average, it is estimated that buying local keeps approximately 65% of your dollar within the community, whereas shopping at large chain stores keeps only 40% (Brainn, 2012).
- For every dollar of sales, direct-marketing farmers in the Sacramento region are generating twice as much economic activity within the region, as compared to producers who are not involved in direct marketing—generating \$0.44 additional output for every dollar of production (Hardesty et al 2016).
- USDA reports that operators of fruit and vegetable farms with local food sales generate an estimated 13 full-time equivalent jobs per \$1 million in sales, which is estimated as greater than the number of jobs created by fruit and vegetable farms not engaged in local food sales. (Johnson, 2016)
- Studies estimate multiplier effects for spending on locally produced foods to be between \$1.32 and \$1.90, meaning that for every dollar spent on local products, between \$.32 and \$.90 worth of additional local economic activity takes place (Bloom, Lelekacs and Dunning, 2018).
- Research has shown that, on average, local fresh fruits and vegetables that are sold in direct markets are less expensive than fresh fruits and vegetables sold in grocery stores, regardless of the season. (Bloom, Lelekacs and Dunning, 2018)

### Overcoming Potential Hurdles

- Tracking progress towards local food procurement and food waste targets: Partner with institutions with existing local food procurement and food waste programs, including UC Davis Health System, Sacramento State, and Golden1 Center, to develop clear metrics and pilot a methodology for gathering data and tracking progress.
- City food waste collection infrastructure: Engage with cities that collect residential food waste, such as Berkeley and Oakland, to receive guidance and best practices for establishing citywide compost collection services. Engage with local organizations that collect compost, such as the Green Restaurant Alliance Sacramento (GRAS) to learn about local services that could be expanded.



Community Health & Resiliency Recommendation #3 | Community Climate Resilience  
**Identify climate vulnerabilities and adaptation strategies as part of the Climate Action Plan or General Plan updates by 2022. Develop and implement preparedness measures, with a priority focus initially on increasing the resilience of communities most vulnerable to climate change impacts by investing in existing community assets and networks to increase community adaptive capacity.**

## Implementation Tactics

1. **Create a Community Resilience Network by 2025** that models San Francisco's Neighborhood Empowerment Network, a coalition of agencies, organizations, and institutions that deploys tools and resources for communities to achieve their self-identified resilience goals. Coordinate with the network to expand Community Emergency Response Training programs to train at least 30,000 residents in climate resilience and disaster response skills by 2030. Create pathways for employment by allocating resources to community ambassador positions that support evacuation planning, emergency communications, access and functional needs awareness, and neighborhood-level preparedness and recovery.
2. **Increase the accessibility of existing cooling centers** by reducing temperature thresholds and set air quality thresholds for opening clean air centers by 2020. Add additional centers that can serve as safe havens during times of emergency, leveraging existing community centers that are familiar to neighborhood residents, such as libraries and schools. Ensure at least one center in each neighborhood by 2025, first prioritizing marginalized communities.
3. **Implement microgrid and energy storage solutions** at critical facilities that community members rely upon to prepare for de-energization events, prioritizing residential battery storage and/or solar incentives for households with medical home health care needs. Restrict utility shutoffs for households at or below 300% of the federal poverty line, by the end of 2020.
4. **Adopt a Climate Resilient Infrastructure Ordinance** to require climate resilience measures, including but not limited to urban heat island mitigation, water conservation, and flood protection measures for all new construction, including roads, and existing infrastructure undergoing major retrofits by the end of 2021, as appropriate. Measures should include cool roofs, cool and permeable pavements, bioswales, graywater collection, low-impact development, and other cost-effective strategies to build resilience to climate change impacts based on vulnerability assessments and climate change models.
5. **Integrate climate vulnerabilities and adaptation strategies in all relevant city plans by 2025.** Update adaptation strategies every 3 years to incorporate evolving climate and risk projections and adaptation best practices, and develop a process for tracking and reporting neighborhood-level progress towards key health and resilience indicators.
6. **Advocate for state policies that promote resilient communities** in the face of climate change, particularly through infill development policies such as density bonuses, transfer of development rights, zoning and building codes that inhibit sprawl and open space conversion and incorporate wildfire safety requirements in areas at higher risk for fire, flood, and other natural disasters.
7. **Adopt trauma-informed policies and practices** to address the mental, emotional, and psychosocial health impacts of climate change and to promote community-based health interventions that address racial and health disparities for key chronic diseases and negative health outcomes exacerbated by climate change. Leverage existing programs that have demonstrated success in marginalized communities.



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### Desired Results & Benefits

- Prepare for and mitigate climate-related impacts and disasters, including increasing temperatures and extreme heat waves; variable precipitation patterns, drought, and flooding; and wildfires and wildfire smoke.
- Integrate climate resilience strategies into city land use planning and policies with clear metrics for accountability.
- Increase involvement of communities most impacted by climate change impacts in decision-making activities and implementation.
- Adopt policies and implement programs that advance climate justice and social equity.
- Support community capacity building to enable all residents to meet their basic needs while building resilience to the worsening impacts of climate change through enhanced social cohesion and self-sufficiency.

### Cost-Effectiveness

- An international research team analyzed 1,692 cities around the world and found that the future costs of climate change jumped 2.6 times when they took the heat island effect into account, compared with running the model as if warming was evenly distributed around the planet (Ronson, 2017).
- Switching 20 percent of city roofs and half of city pavements to better surfaces would save 12 times as much as it costs and help turn the urban thermostat down by a degree and a half (Ronson, 2017).
- A \$10 billion investment in water efficiency projects would produce a total economic output of \$25–28 billion and create 150,000 to 220,000 jobs (Jeffrey Odefey et al, 2012).
- An EPA report that 17 case studies of developments that include green infrastructure. In most cases, significant savings were realized for site grading and preparation, stormwater infrastructure, site paving, and landscaping. The study estimates that capital cost savings ranged from 15 to 80% when green infrastructure was used (Jeffrey Odefey et al, 2012).
- A 2006 study in the City of Philadelphia found that 196 heat-related fatalities could be avoided over a forty-year period through the use of green infrastructure to manage polluted runoff and reduce combined sewer overflows. Based on the EPA's value of a statistical life in 2006, reductions in urban heat island related fatalities in Philadelphia could save the public over \$1.45 billion (Jeffrey Odefey et al, 2012).

### Overcoming Potential Hurdles

- Fragmentation of existing communities: Partner with trusted community organizations to leverage existing networks, such as Neighborhood Watch, to engage more residents and build social cohesion. Create a communications toolkit for neighborhood associations to raise awareness about climate change risks and resilience-building activities and resources.
- Sustaining momentum over time: Mainstream climate resilience to make adaptation a shared responsibility across public and private sectors, such as by embedding climate resilience duties across all city departments, including adaptation measures in regular maintenance activities, and encouraging voluntary action through incentives to engage the private sector. Partner with academic institutions, community-based organizations, and other trusted partners to provide iterative education on climate risks and resilience.