



Green Infrastructure

Advance Community Climate Resilience and Promote Health Equity

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It is essential that green infrastructure is prioritized as a critical strategy to promote community climate resilience, public health, and equity.

The Golden State is increasingly suffering from the impacts of climate change. Extreme weather events are dominating the landscape and harming the health of our communities. The immediate and future impacts of climate change are worsening,¹ and the road to recovery is unequal.² California's Legislative Analyst Office's (LAO) Climate Change Impacts report predicts far reaching health and economic impacts of climate change. Without robust interventions to mitigate and increase resilience to climate impacts, the health of all Californians is endangered. Extreme heat-related deaths and illness will become more common. Continued degradation of water quality and quantity due to flooding, contaminants, and droughts will strain agriculture operations, harm farmworker communities, and increase food insecurity. Air pollution driven by carbon emissions and wildfires will increase deaths and illnesses related to asthma, chronic obstructive pulmonary disease, pneumonia, and contagious diseases such as COVID-19.³

While climate change threatens all residents of California, low-income and communities of color disproportionately lack the resources and investments needed to build community climate resilience.⁴ People of color disproportionately live in places with lower air and water quality, greater exposure to the urban heat island effect, less access to parks and green spaces, and fewer and more poorly maintained amenities in public places.^{5,6} As California seeks to address climate change and promote community resilience, it is essential that green infrastructure is prioritized as an essential strategy to promote public health and equity.



The Problem: Climate Change Exacerbates Inequities, and Taxes Public and Community Infrastructure

- **Climate change will likely cause fewer but more intense storms in California.** A combination of increasingly intense storms, earlier snowmelts, and precipitation falling more frequently as rain than snow could cause a 50% increase in runoff in future years.
- **Existing infrastructure rates poorly in the state.** Stormwater management and Parks both received poor grades in the 2019 Report Card for California's Infrastructure.⁷
- **Low-income communities are more likely to live in neighborhoods with older, poorer infrastructure,** including stormwater management infrastructure.⁸
- **62% of Californians live in areas that do not meet the California Department of Parks and Recreation's recommendation** of three acres of parkland per 1,000 residents.⁹
- **There are significant racial equity gaps in access to greenspaces.** African Americans are 52% more likely to live in urban heat islands, areas with little tree cover and more heat-absorbing concrete and asphalt, exacerbating the risk of heat illness.¹⁰
- **Approximately 3 million Californians are living with asthma.**¹¹ Ozone and fine particulate matter contribute to the prevalence and severity of asthma and other respiratory diseases.
- **People of color face the greatest pollution burden in the State.** In the top 10% of census tracts impacted by environmental burden, Latinx residents make up 78% of total residents.¹²
- **78% of people of color live in 100-year Flood Hazard Zones.**¹³

GREEN INFRASTRUCTURE – A MULTI-BENEFIT EQUITABLE SOLUTION

Green infrastructure is the umbrella term for an interconnected web of nature-based and nature-mimicking strategies to equitably provide environmental benefits to a system and/or community. For example, strategies such as urban greening, vegetated rooftops, bioswales, and permeable pavement can be used as part of a comprehensive system to promote eco-friendly stormwater management, reduce urban heat island effects, improve air quality, build social cohesion, and protect historically impacted communities from the impacts of climate change. A particular emphasis should be placed on utilizing vegetated strategies as part of a comprehensive green infrastructure approach. Green infrastructure should be aligned with efforts to protect, restore, and manage natural ecosystems.

Green infrastructure provides numerous public health benefits. There is substantial evidence that green infrastructure not only improves water quality but also reduces carbon emissions, improves air quality, protects communities from the impacts of the urban heat island effect, and other outcomes needed for community climate resilience.¹⁴ Using green infrastructure to expand access to parks, green spaces, trails, and active commuting is an evidence-supported strategy for improving physical and mental health outcomes.¹⁵

Equitable green infrastructure helps communities by improving:

- **Community resources**, including green community schoolyards, parks, and open spaces, cool, integrated transit and active transportation infrastructure, and other public needs.¹⁶
- **Air, water, and soil quality**, aiding environmental sustainability and public health.¹⁷
- **Investments in community infrastructure** as an opportunity to address disinvestment and support local economies and robust workforces.¹⁸
- **Health and social equity**, ensuring all residents have the opportunities and resources to live a healthy life.¹⁹
- **Opportunities for social and civic engagement** and building social cohesion across neighborhoods.²⁰

RECOMMENDATIONS TO ADVANCE GREEN INFRASTRUCTURE FOR CLIMATE RESILIENCE AND HEALTH EQUITY

Prioritize Investments in Communities Disproportionately Impacted by Health Inequities, Climate Impacts, and Pollution Burden

- **Engage residents and provide resources** for community-based organizations as partners in all planning, decision-making, and implementation processes, prioritizing community-driven solutions.
- **Set aside green infrastructure investments for communities that are disproportionately vulnerable** to climate and environmental impacts. Use the California Healthy Places Index® (HPI) to identify eligible communities. HPI which maps data on social conditions that drive health — like education, job opportunities, clean air and water, and other indicators that are positively associated with life expectancy at birth. Community leaders, policymakers, academics, and other stakeholders use the HPI to compare the health and well-being of communities, identify health inequities and quantify the factors that shape health.
- Green infrastructure should **include neighborhood stabilization policies and practices** to prevent green gentrification and displacement, and promote equity.

Foster Robust State and Local Cross-Agency Collaboration

- Green Infrastructure is an opportunity to break down siloed agency approaches through the **collaboration of a multitude of state, regional, and local agencies** involved in infrastructure funding allocation and planning.
- Use collaborative approaches to **focus on multi-benefit strategies** to address the social drivers of health instead of more narrow traditional agency approaches.

We Need Investments in Green Infrastructure and Community Resilience

The climate threat is real, severe, and already impacting the health of California communities. All levels of government must enact bold policy actions and invest resources to prevent, prepare and respond to increasing climate emergencies. California communities need investments to build climate resilience and advance equity. Investments in green infrastructure are required to protect water quality, transportation, food security, and energy sustainability while yielding the co-benefits of climate resilience, health, and equity needed to ensure all Californians can live healthy lives.

See the full [Green Infrastructure, Climate Resilience, & Health Equity Policy Agenda](#) for more information.

1. <https://lao.ca.gov/reports/2022/4575/Climate-Change-Impacts-Crosscutting-Issues-040522.pdf>
2. <https://oag.ca.gov/environment/climate-change/unequal-impacts>
3. <https://lao.ca.gov/reports/2022/4575/Climate-Change-Impacts-Crosscutting-Issues-040522.pdf>
4. <https://www.frbsf.org/community-development/publications/community-development-research-briefs/2021/december/climate-related-risks-faced-by-low-and-moderate-income-communities-and-communities-of-color-survey-results/>
5. <https://link.springer.com/article/10.1007/s42532-020-00070-3>
6. <https://lao.ca.gov/reports/2022/4575/Climate-Change-Impacts-Crosscutting-Issues-040522.pdf>
7. https://infrastructurereportcard.org/wp-content/uploads/2021/07/FullReport-CA_051019.pdf
8. americanprogress.org/wp-content/uploads/2013/08/LowIncomeResilience-2.pdf
9. https://www.parksforcalifornia.org/park_equity
10. <https://www.racecounts.org/issue/healthy-built-environments/>
11. <https://opr.ca.gov/facts/climate-change-and-public-health.html>
12. https://scag.ca.gov/sites/main/files/file-attachments/reeap_final.pdf?1620325603
13. https://scag.ca.gov/sites/main/files/file-attachments/reeap_final.pdf?1620325603
14. https://cnt.org/sites/default/files/publications/CNT_Value-of-Green-Infrastructure.pdf
15. <https://theconversation.com/parks-and-green-spaces-are-important-for-our-mental-health-but-we-need-to-make-sure-that-everyone-can-benefit-142322>
16. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4555311/>
17. epa.gov/green-infrastructure/benefits-green-infrastructure#waterquality
18. <https://www.jff.org/resources/exploring-green-infrastructure-workforce/>
19. <https://www.americanrivers.org/wp-content/uploads/2016/05/Value-of-Green-Infrastructure.pdf>
20. https://www.researchgate.net/publication/249624361_The_Fruit_of_Urban_Nature_Vital_Neighborhood_Spaces

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