



How Public Health Can Support Climate Change Mitigation

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Introduction

Reducing climate-related health risks has significant potential to improve public health. Climate change is harming public health across every region of the United States by increasing extreme heat and weather, air pollution, infectious disease, and food insecurity. Due to differences in hazard exposure, sensitivity to impacts, and adaptive capacity (link), some are more vulnerable than others to climate-related health risks. Public health practitioners can help their communities take action to reduce these health risks and negative health equity effects.

Purpose of This Resource

This resource was developed to help public health practitioners understand actions they can take to improve public health by supporting climate change mitigation planning efforts. The resource highlights strategies that public health practitioners can use to help communities integrate health considerations into climate action plans (CAPs). These strategies have been supplemented by "Practitioner Reflections," which highlight quotes from interviews conducted with health practitioners at the state and local level.¹

Related Resources

- How Climate Change Mitigation Can Support Public Health Action Overview of health pathways and outcomes of climate change mitigation strategies, along with supporting evidence (See the "pathways" report here).
- A practitioner framework called Building Resilience and Climate Equity (BRACE).
 This is a practical, flexible, and scalable approach to local public health-focused climate action. (linked here)
- A BRACE implementation guide with practical, flexible, and action-oriented worksheets, and resources for strengthening adaptation and mitigation efforts (linked here).
- Information about federal engagement with state, territorial, local, and tribal health departments (see CDC's page on the Climate Ready States and Cities Initiative (linked here) and the Climate Ready Tribes Program (linked here).
- Practical strategies to incorporate the perspective of health and health equity in climate action planning (<u>linked here</u>).

Climate Change Mitigation as a Public Health Intervention

Taking action to mitigate climate change is a powerful opportunity to improve public health through interventions that shape the social and environmental determinants of health. Climate change interventions fall into two broad categories:

- Climate change mitigation reducing emissions of the heat-trapping greenhouse gasses (GHGs) in the atmosphere that drive climate change; and
- Climate change adaptation preparing for and responding to current and future climate change.

Growing evidence supports the positive health outcomes, or co-benefits, of climate change mitigation (link to companion document). For example, strategies in the transportation sector, such as modal shift to active transportation and vehicle electrification, can improve health through increased physical activity and improved air quality, respectively. Strategies that support green infrastructure, green space, and tree canopy can improve air quality and reduce heat exposure.

Communities can improve public health and mitigate climate change by implementing strategies that address these concerns together. State and local governments plan to mitigate climate change by developing climate action plans (CAPs), which "generally include greenhouse gas (GHG) emissions reduction targets and detail actions the state can take to help meet those goals. The plans may also include additional components such as resilience strategies, clean energy targets, and economic and social goals".² To achieve GHG emissions targets, a series of mitigation strategies are usually identified based on sources of emissions such as transportation, land use, building performance, waste management, and food systems.

While climate change mitigation planning processes and CAPs have included discussions about the ways climate change affects health, discussions about how mitigation activities may improve health have been less common. However, health practitioners and agencies are now aspiring to focus their efforts on upstream drivers of health. These strategies have powerful synergies with climate change mitigation strategies. Thus, climate change mitigation planning offers an opportunity to amplify impact and collaboratively bring different interest-holders and communities to the table.

Prioritize Equity

The impacts of climate change are not evenly distributed between and within communities. Some communities are disproportionately harmed by climate change due to social and economic inequities caused by ongoing systemic discrimination, exclusion, and under- or disinvestment.³ This unfair distribution of impacts can be addressed by prioritizing justice, equity, and belonging when planning to mitigate climate change and improve public health through the following actions:

- Creating a process that is more aligned with the strengths and aspirations of communities that bear the brunt of climate change
- Creating a better understanding of climate-related health risks and concerns, both in the community overall and in communities that are disproportionately affected
- Examining potential unintended risks, including health harms, of prospective actions Ensuring mitigation activities align with community health needs
- Assessing progress made towards planned goals so that climate-related mitigation actions may be adjusted to align with community needs

Those leading or supporting climate change mitigation planning processes can employ two main tactics to implement the above actions: equity assessments and equitable, inclusive, and authentic community engagement. Below are descriptions of these tactics and related resources.

Equity Assessments

Prioritizing equity in climate change mitigation planning requires an understanding of the places and populations that face the greatest climate change and health inequities, as well as the root causes of these inequities: namely the unequal allocation of power and resources which leads to unequal social, economic, and environmental conditions.⁴ Completing an equity assessment as part of climate change mitigation planning can help build this understanding.

An equity assessment consists of the same key stages as a health impact assessment: screening, scoping, data collection, impact appraisal, reporting/recommendations, and monitoring/evaluation.⁵ Through the assessment process, health disparities are mapped spatially across the community, focusing on the smallest geographies possible. A combination of quantitative and qualitative data is collected. Health disparities that are found in the data should be confirmed through equitable, inclusive, and authentic community engagement. Finally, the root causes of health disparities are explored to inform discussions about how to reduce those disparities.

Community Engagement

Prioritizing justice, equity, and belonging in climate change mitigation planning requires equitable, inclusive, and authentic community engagement. Community engagement is more than just gathering information to inform public policy and planning decisions. It is also a process of building trust and relationships that enable government agencies, the private sector, and the public to work together to address health-related issues such as climate change.

The neighborhoods or populations to prioritize vary from community to community, as do the effective approaches to engagement. Efforts to engage the public in equitable, inclusive, and authentic ways can always be improved. Decision makers may consider increasing the number, frequency, and accessibility of opportunities for communities to engage in climate change mitigation planning. They may also improve the quality, diversity, and community orientation of mitigation efforts. Finally, they may need to be realistic about the amount of time and effort required to build trust through authentic and inclusive community engagement.

Community orientation

To prioritize equity, it is essential for decision makers to demonstrate community orientation in conversations about mitigating climate change, in part because community orientation is a strong driver for developing trust. Community orientation involves ensuring that community members feel included and demonstrating how their experiences and needs are centered in the climate change mitigation planning process.

While community orientation is crucial to advancing equity, decision makers may need to account for several considerations. First, it can be difficult for the public to participate in policy processes. Making participation easier by regularly and frequently holding conversations in communities where people face the greatest health and climate change-related inequities is an important part of community orientation.

Second, while individuals, neighborhoods, and groups of people often have issues in their communities that concern them, they may not perceive how these issues are connected to climate change. Decision makers may demonstrate care for and commitment to community concerns by first asking what the community wants to discuss or address. Discussions that follow can then explore how those community concerns may be connected to climate change mitigation.

Third, communities have socially and culturally mediated beliefs and understandings of health and illness, as well as different needs and expectations around community

engagement. Engagement activities that recognize and value these differences will be more inclusive and effective.

Community-oriented climate change mitigation planning includes processes that are as collaborative and empowering as possible along the spectrum of public participation.⁶ These types of community-oriented processes can contribute to more diverse participation and enable conversations that are more inclusive. The actions that result from these conversations may be more effective because they are better aligned with the communities' priorities, strengths, skills, and assets. In addition to supporting climate change mitigation, increased civic participation is associated with better self-reported health.7

Asset-based approaches

When engaging with communities, a disproportionate focus on the harms of and vulnerabilities to climate change can stigmatize participants who experience those harms and lead to disagreements about who is responsible for climate change and who is responsible for mitigation. It can also limit practitioners' understanding of the lived experiences within the community, diminish participation in the planning process, and direct attention away from proactive, aspirational strategies. These effects can limit the number and diversity of climate change mitigation supporters, generate opposition to climate change mitigation, and ultimately hinder a mitigation plan's ability to reduce inequities.

An asset-based approach instead focuses on the community's aspirations, strengths, skills, and assets.^{8 9} This approach creates more opportunities to focus conversations on proactive actions, points of community alignment, and positive outcomes in the short- and medium-term future.7 This approach can result in CAPs that better align with a community's aspirations, more effectively address equity and environmental justice, and have a larger and more diverse group of supporters. 10

Related Resources

Equity assessments

 Health Equity Impact Assessment (HEIA) reporting tool: Developing a checklist for policymakers - This article introduces a checklist for HEIA reporting at the decision-making level, aiming to promote the application of HEIA evidence for improving health equity.

Community engagement

- The Planner's Playbook: A Community-Centered Approach to Improving Health & Equity - This resource provides guidance, resources, concrete steps, and examples for planners who wish to center equity in their planning practice.
- A Practitioners Guide for Advancing Health Equity: Community Strategies for Preventing Chronic Disease (see the Meaningful Community Engagement for Health and Equity section) - This resource includes lessons learned, practices from the field, and existing evidence about how to reduce health inequities and advance health equity through policy, systems, and environmental change, as well as public health practices.
- Identifying and Analyzing Stakeholders and Their Interests See the Checklist and Main Section tabs for an overview of how to identify stakeholders and address stakeholder interests.
- Supporting Equitable Community Engagement This resource helps State Health Departments (SHDs) better understand how equitable and inclusive community engagement can support efforts to address the social determinants of health.
- Equity in Climate Action Planning: Trends and Best Practices for U.S. Local Governments - This report has trends and best practices for incorporating equity into climate action planning, including community engagement.
- Health Equity Guiding Principles for Inclusive Communication This resource offers a set of principles intended to help public health professionals ensure their communication products and strategies are adapted to the specific cultural, linguistic, environmental, and historical situation of each population or audience of focus.

Partner with a Diversity of Sectors

Increasing cross-sector collaboration is an opportunity to shape climate action plans to support desired outcomes across sectors, including health. This chapter highlights a few specific benefits of cross-sector partners, followed by related resources.

Climate Change Mitigation is a Multi-Sector Effort

Because sources of green house gas (GHG) emissions span a wide range of sectors, climate change mitigation planning is a multi-sector effort. The sectors that participate in climate change mitigation planning efforts will vary from community to community. However, successful planning inevitably requires more than improvements in data gathering and analysis within individual sectors. Siloed approaches to climate policy and a "lack of shared professional language between those involved in policy implementation, climate change research, and public health professionals" are common barriers to effective collaboration. Increasing cross-sector collaboration is an opportunity to shape climate action plans (CAPs) to support desired outcomes across sectors. Below is an overview of the value of cross-sector partners, followed by tools to get started.

Practitioner reflection

"The more that we have multiple interest holders working on resilience and mitigation plans and looking for that nexus moment, the better. Urban tree canopy is one of the shining examples. The more trees we can get in the city, the better the albedo effect. So, mitigation is taken care of. It helps with swales and flooding, and it helps clean the air for our communities. So, those are triple win moments."

The Value of Cross-Sector Partners

Below are examples of how cross-sector collaboration can improve climate change mitigation planning, and the roles health practitioners can play in the process.

Increased number and diversity of actions

Partnering with a greater diversity of sectors can expand the actions included in climate action plans, increase support for CAP adoption, increase partners involved in plan implementation, and increase the range of positive plan outcomes. This collaboration could include internal and external interagency departments, local community organizations, and faith-based organizations.

Increased support for adoption

Partners can uplift actions that speak to a diversity of values and goals or can identify issues that could limit support from interest holders in various sectors. It is easier for interest holders in different sectors to support plan adoption when their values and goals are reflected in the plan's climate change mitigation strategies.

Increased support for implementation and improved plan outcomes

Partners are more likely to contribute to a CAP's implementation when their sectors contribute to plan development and their values and goals are reflected in the plan's climate change mitigation actions. Expanding the diversity of partners involved in plan development can create a broader and more diverse network of partners that are involved in CAP implementation, which can lead to improved climate change mitigation, health, and equity outcomes.

Practitioner reflection

"I think it was a missed opportunity for a long time to not be thinking about mitigation because it's where a lot of the community energy was — around active transportation, with the co-benefits, around water retention policies, waste water retention to alleviate flooding, and green infrastructure. This brings in environmental organizations that maybe didn't align entirely with just a health focus, but certainly brings new partners to the table."

Related Resources

- Climate and Health: A Guide for Cross-Sector Collaboration This is a resource to support health department staff in conducting cross-sector outreach for climate adaptation planning. The document includes insights and pointers for collaboration opportunities in ten sectors.
- Communicating Prevention Messages to Policy Makers: The Role of Stories in Promoting Physical Activity - This article provides guidance to improve researchers' and practitioners' abilities to translate evidence to support policy makers' efforts to enact policies that promote physical activity.

Leverage the Unique Role of Health Professionals

There are several important actions that health practitioners can take to contribute to climate change mitigation planning processes. This chapter highlights some examples of these actions related to assessment, policy development, and assurance activities.

How the Essential Public Health Services Can Support Climate Change Mitigation

There are several important actions that health practitioners can take to contribute to climate change mitigation planning processes which align with some of the <u>10 essential public health services</u>. This chapter contains examples of roles related to assessment, policy development, and assurance activities. Health partners participating in climate change mitigation planning processes can include public health clinicians, local public health departments, health foundations, and hospital networks.

Assessment

Below are assessment-related actions health practitioners can take to contribute to climate change mitigation planning processes.

Assess and monitor population health

Health practitioners can gather and assess data that will help planning and resilience offices, as well as community members, understand local climate-related health risks in an accessible way that connects to lived experiences. This understanding can also act as a foundation for assessing health impacts of mitigation actions and tracking progress over time.

Identify priority neighborhoods and populations

Health practitioners can use their understanding of community health risks, root causes, social determinants of health, vital conditions, and health-focused geospatial analyses to help identify the neighborhoods and populations in a community that face the greatest risks of climate change-related health impacts. They can also help identify where health needs, as well as opportunities to address the root causes of poor health outcomes, align with potential climate change mitigation strategies. This understanding can inform community engagement activities and mitigation strategy selection.

Policy Development

Below are policy development-related actions health practitioners can take to contribute to climate change mitigation planning processes.

Join the team

When climate change mitigation planning starts, health practitioners can get involved early and often. This includes attending taskforce meetings, responding to requests for information, providing or analyzing data, and contributing to and reviewing draft documents. It also includes attending public meetings to express support for climate change mitigation.

Health practitioners can also get involved in community planning efforts that are outside of climate change mitigation planning but that have implications for climate change. Examples of policies or regulations that connect to climate change mitigation strategies include comprehensive plans, zoning, active transportation or open space master plans, complete streets ordinances, urban forestry master plans, sustainability plans, neighborhood or community improvement district plans, and capital improvement plans. Health practitioners have an opportunity to help build cross-sector relationships and facilitate collaboration by participating in and contributing to planning processes when these types of policies are updated. These collaborative relationships can then be leveraged when climate change mitigation planning occurs.

Assess the health impacts of CAP strategies

Health practitioners can assess the potential local health benefits of climate change mitigation strategies. Bringing an understanding of these health pathways and connecting to relevant supporting data makes it more likely that CAPs will include mitigation strategies that improve public health. This information can also be used to support a community's decision to take action.

Support community engagement

Supporting community engagement includes taking advantage of opportunities to participate in climate change mitigation planning events as a partner, to bring subject matter expertise to planning. It may also involve leading community engagement activities on climate change mitigation, such as public workshops, focus groups, and surveys. Finally, it may include identifying community partners who can contribute to the process and helping to bring them to the table.

Strengthen communication

Health practitioners can support communication about climate change mitigation efforts. They can help ensure the health impacts of climate change and mitigation strategies are accurately captured in climate action plans. Furthermore, they can help communicate these benefits to the public, interest holders, planners, and elected officials. Part of this

communication effort includes translating evidence into accessible language and suggesting effective approaches to framing health and equity outcomes.

Assurance

Below are assurance-related actions health practitioners can take to contribute to climate change mitigation planning processes.

Build capacity and maintain opportunities to engage in climate change mitigation planning

Health practitioners can create the capacity for their departments or organizations to participate in climate change mitigation planning processes. This includes dedicating staff time to participate and learning the language and concepts involved in the process. Health practitioners can also work with state and local entities to define and standardize terms and reduce jargon, in order to create a more common and accessible language for discussing the health benefits of climate change mitigation.

Gather data and track progress

Health practitioners can gather and assess health data in ways that help track progress toward community climate and health goals. They can use this data and assessment to support CAP progress reporting processes. They can also partner with academic institutions or publish their findings to contribute to the broader body of literature about the health benefits of climate change mitigation.

Use Health Framing to Build Support for Climate Change Mitigation

Because climate change mitigation strategies have a wide range of additional benefits beyond reducing GHG emissions, diverse partners, interest holders, and the public may support climate action plans with co-benefits that are important to them. This chapter describes different frames and focus areas that can be useful when working with different partners and audiences.

Emphasize Co-Benefits of Climate Change Mitigation

Understanding, discussing, and taking action to mitigate climate change is not a priority for everyone. However, climate change mitigation strategies have a wide range of additional benefits beyond reducing GHG emissions. A greater diversity of partners, interest holders, and the public may support CAPs that have co-benefits that are important to them. Emphasizing co-benefits of climate change mitigation, such as improved health outcomes, can improve public support for climate action. The potential power of using health outcomes to frame climate change mitigation is reflected by a review that found 88% percent of adopted CAPs included some discussion of health.

Practitioner reflection

"There needs to be a greater degree of communication, particularly the local health directors, on the opportunities that they have around mitigation. There was a sense that that wasn't really within their lane. They were more focused on the upfront and immediate aspect of resilience and recovery. But, it's going to be mitigation that stems the tide of our collective global warming driven by greenhouse gas emissions."

Below are four ways to use a public health framing to increase support for climate change mitigation followed by tools to get started.

Emphasize the Benefits of Mitigation Beyond Reducing GHG Emissions

Climate change is harming the health and well-being of individuals and communities. Slowing or reversing climate change reduces these negative health impacts. Climate change mitigation actions also have a range of health, economic, social, and other outcomes that can be achieved in relatively short timeframes and are directly connected with people's daily lives. They can also translate into monetary savings or efficiencies that can play an important role in offsetting the costs of implementing mitigation strategies. ^{14 15} Investing in climate change mitigation can be an efficient use of community resources when it achieves a wider range of community goals, particularly at the local level where

resources are often limited. When practitioners highlight these outcomes, it may make investment in climate change mitigation easier to justify than when focusing on long-term, global scale outcomes.^{17 18}

Illustrate the Range of Health Benefits Stemming from Different Strategies

Describing specific health outcomes of climate change mitigation can make it easier for community members, decision makers, partners and practitioners to understand the short term and local benefits of climate action. Using health benefits to build support for climate change mitigation in this way requires clearly presenting the health pathways of climate change mitigation strategies and discussing how those health pathways can address observed health disparities. (See "How Climate Change Mitigation Can Improve Public Health" here for information about the health pathways and health outcomes of common climate change mitigation strategies).

Health benefits of climate change mitigation strategies can be represented in several ways. For example, health pathway diagrams can help build understanding of how mitigation activities lead to positive health outcomes. These diagrams can be used to explain these connections in community conversations. They can also be featured in CAPs to reinforce how improved health is an intended outcome of selected strategies.

Some mitigation strategies also present opportunities to improve equity. Equity may be improved by focusing mitigation strategies in neighborhoods experiencing health disparities or by prioritizing climate change mitigation strategies whose health pathways and health outcomes align with observed health disparities.

Health and equity icons or other graphics can also be used to highlight which mitigation strategies can lead to positive health and equity outcomes, which health pathways are associated with each mitigation strategy, and where heath pathway synergies exist between different mitigation strategies. For example, land use, transportation, and vegetation-related mitigation strategies can all be coordinated in ways that improve health through physical activity.

Practitioner reflection

"There are naturally solutions that fit in both buckets. If we're thinking about greening infrastructure, it is a health benefit because it provides shade, especially if you're putting it in schoolyards or bus stops. But it can also provide mitigation impact. If we're looking for win- wins and co-benefits, we should be highlighting solutions that have mitigation and

adaptation. If we're thinking holistically we should be looking for solutions that can benefit multiple things."

Assess how Community Health Risks and Inequities Relate to Climate Change Mitigation

Practitioners can identify known climate change related health risks and inequities and mitigation opportunities that can address those risks. Practitioners can assess and describe these links to climate change mitigation strategies qualitatively—such as through anecdotes or community interviews—and quantitatively, through GHG inventories, social vulnerability indexes, or environmental health risks data. A combination of qualitative and quantitative assessments can help ensure a complete and nuanced understanding of community-wide and individual health risks, inequities, opportunities, and experiences. Such an understanding can help shape climate change mitigation actions in ways that address community-specific health risks and inequities. This thorough understanding can also help practitioners leverage community-specific opportunities for improvement.

Analysis tools that are commonly used to quantify health impacts include nested models; health impact assessments (HIAs); vulnerability and adaptation assessments; conceptual frameworks such as climate, health and equity vulnerability assessment (CHEVA); and mixed methods that combine different analytical approaches such as survey data, literature review, models, and tools.¹⁹

Capitalize on Win-Win Strategies and Consider Trade-Offs

When designing mitigation strategies, practitioners can consider what efforts might simultaneously fulfill adaptation needs, thereby improving the climate resilience of communities. ²⁰ This approach can create synergistic benefits that improve cost effectiveness, prevent maladaptation, and enhance buy-in among interest holders, including potential funders. ²¹ Pursuing strategies with mitigation and adaptation benefits can also help integrate climate policy and decision making, improving coherence across levels of governance and sectors. ²²

Examples of win-win approaches are numerous. For instance, increasing vegetation through green infrastructure, green space, and tree canopy sequesters carbon dioxide from the atmosphere, while it also prevents inundation and soil erosion. Further, this strategy can reduce urban heat islands by shading building surfaces, deflecting radiation from the sun, and releasing moisture into the atmosphere. ²³ ²⁴ ²⁵ As another example, local food production reduces GHG emissions from food distribution while also helping ensure food security (i.e., food supply for all at all times)

in the face of global crises.²⁶ Last, public climate education and awareness efforts can lead to a range of behavior changes that reduce GHG emissions as well as increasing support for policies that both enhance resilience and reduce emissions.

Practitioner reflection

"When we say climate resilience, we see it as bridging mitigation and adaptation. A good example might be community resilience centers which, on the one hand, are powered by clean energy, located in places that folks can get to with ease. And then, also, they're perfect for activating during acute climate disasters."

Related Resources

Minimum Elements and Practice Standards for Health Impact Assessments – This resource provides guidance on what is required for a study to be considered a health impact assessment (minimum elements) and some benchmarks for effective practice (practice standards).

The Health Impact Assessment (HIA) Resource and Tool Compilation: A Comprehensive Toolkit for New and Experienced HIA Practitioners in the U.S. – This is a compilation of demonstration sites, evaluation, mentorship assistance, resources, and policy statements that are intended to assist local health departments in increasing the use of health impact assessments in community design, transportation, parks and recreation, housing, land use planning decisions, etc.

Apply Evidence for Health Benefits of Climate Change Mitigation

Public health practitioners can apply the evidence for health outcomes associated with climate change mitigation.

Use Evidence to Make the Case

Climate change mitigation planning that incorporates a health perspective can leverage evidence to support plan development and decision- making. This evidence can help policy makers understand the health impacts of different actions, and how these impacts may vary due to place- based and socioeconomic contexts.²⁷ ²⁸ Below are ways practitioners can apply the evidence for health outcomes associated with climate change mitigation.

Promote Plain Language

It can be challenging to translate the language of technical and scientific evidence into policy action. Evidence must clearly explain the pathways connecting climate change mitigation strategies to specific health outcomes, including the scale of potential health improvements. This is especially true when communities are considering how their actions to mitigate climate change at global scales over long timeframes can also help achieve shorter term outcomes at the local scale.

Recognize the Limitations of Current Evidence

It is well documented that climate change mitigation promotes public health. The mitigation strategies and health pathways that are most frequently included in adopted CAPs are those with the most currently robust body of evidence (e.g., transportation and vegetation-related mitigation strategies, and air quality and physical activity health pathways). This also means that mitigation strategies and health pathways that may improve public health but have less evidence are less frequently discussed (e.g., food systems, waste systems, and mental health). Expanding the range of mitigation strategies that improve health in CAPs may require working with strategies that do not yet have a strong evidence base.

Even where scientific literature discusses health pathways, it frequently associates positive health outcomes with the removal of harmful drivers, but less frequently includes rigorous evaluations of the positive impacts of interventions. The literature often focuses on the health pathways (e.g., improved air quality), rather than specific health outcomes (e.g., reduced asthma exacerbations). However, there is low consistency in research

design and measurement, even among literature focused on the same health pathway. These gaps can be bridged in part by making connections to relevant evidence outside of climate change literature.

It is likely that positive synergies between mitigation strategies can boost effects; however, this is not well documented. For example, land use decisions, active transportation, and green spaces all support physical activity-related health outcomes. Coordinating mitigation strategies that share health pathways in this way may strengthen health outcomes. (See "How Climate Change Mitigation Can Improve Public Health" here for more information about the health pathway synergies between common climate change mitigation strategies.)

Finally, the ways that adopted CAPs address equity are limited by gaps in the research. The literature does not often explicitly measure equity outcomes of climate change mitigation measures. There may be unintended negative health consequences to some mitigation strategies that are not currently well documented in the literature. It is important for CAPs to address potential equity benefits and negative consequences despite these gaps in the evidence.

Public health practitioners can contribute to and help move beyond the current evidence by advocating to have CAPs include processes for tracking and reporting on health and equity outcomes from CAP implementation over time. This data and these reports can then be used by academics to expand the body of evidence about health and equity benefits of climate change mitigation. Public health practitioners can support this tracking and reporting process by gathering CAP implementation-related health data, evaluating health outcomes and contributing to CAP progress reports. Public health practitioners can also provide guidance to partners about how to gather data in ways that isolate specific aspects of the built environment and make it possible to use rigorous methods to assess observable health and equity outcomes of CAP implementation.

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This guide was published in November, 2025.

https://www.c2es.org/document/climate-action-plans

https://www.cdc.gov/healthequity/whatis/index.html#anchor_50591. Published 2022.

https://www.comnetwork.org/blog/asset-framing-the-other-side-of-the-story.

https://api.semanticscholar.org/CorpusID: 2245425678

¹ Lemon SC, Joseph HA, Williams S, et al. Reimagining the Role of Health Departments and Their Partners in Addressing Climate Change: Revising the Building Resilience against Climate Effects (BRACE) Framework. Int J Environ Res Public Health. 2023;20(15). doi:10.3390/ijerph20156447

² Center for Climate and Energy Solutions (C2ES). U.S. State Climate Action Plans.

³ Hayden MH, Schramm PJ, Beard CB, et al. Human health. In: Crimmins AR, Avery CW, Easterling DR, Kunkel KE, Stewart BC, Maycock TK, eds. Fifth National Climate Assessment. Washington, DC, USA: U.S. Global Change Research Program; 2023. doi:10.7930/NCA5.2023.CH15

⁴ Centers for Disease Control and Prevention (CDC). Health Equity.

⁵ Povall SL, Haigh FA, Abrahams D, Scott-Samuel A. Health equity impact assessment. Health Promot Int. 2013;29(4):621-633. doi:10.1093/heapro/dat012

⁶ Department of Health and Human Services. Civic Participation. https://health.gov/healthypeople/priority-areas/social-determinants-

^{%09}health/literature-summaries/civic-participation. 2 Published 2024.

⁷ Ibid.

⁸ Martin-Kerry J, McLean J, Hopkins T, et al. Characterizing asset-based studies in public health: development of a framework. Health Promot Int. 2023;38(2):daad015. doi:10.1093/heapro/daad015

⁹ Ramos Montañez S. Advancing equity through research: The importance of asset-based approaches and methods. J Appl Dev Psychol. 2023;86:101540. doi:10.1016/J.APPDEV.2023.101540

 $^{^{\}rm 10}$ The Communications Network. Asset Framing: The Other Side of the Story. 2023.

¹¹ Negev M, Zea-Reyes L, Caputo L, Weinmayr G, Potter CA, de Nazelle A. Barriers and Enablers for Integrating Public Health Cobenefits in Urban Climate Policy. Annu Rev Public Health. 2021.

¹² Bain PG, Milfont TL, Kashima Y, et al. Co-benefits of addressing climate change can motivate action around the world. Nat Clim Chang. 2016;6(2):154-157. doi:10.1038/nclimate2814

¹³ Yuen T. The health co-benefits of climate change mitigation and the role of public health practitioners in climate action planning. In: Atlanta, GA; 2023

¹⁴ Maizlish N, Rudolph L, Jiang C. Health Benefits of Strategies for Carbon Mitigation in US Transportation, 2017-2050. Am J Public Health. 2022;112(3):426-433. doi:10.2105/AJPH.2021.306600

¹⁵ Maizlish N, Woodcock J, Co S, Ostro B, Fanai A, Fairley D. Health Cobenefits and Transportation-Related Reductions in Greenhouse Gas Emissions in the San Francisco Bay Area. Am J Public Health. 2013;103(4):703-709. doi:10.2105/AJPH.2012.300939

¹⁶ Coutts C, Hahn M. Green Infrastructure, Ecosystem Services, and Human Health. Int J Environ Res Public Health. 2015;12(8):9768-9798. doi:10.3390/ijerph120809768

¹⁷ Floater G, Heeckt C, Ulterino M, et al. Co-Benefits of Urban Climate Action: A Framework for Cities.; 2016. https://eprints.lse.ac.uk/68876/1/Cobenefits_Of_Urban_Climate_Action.pdf. 2 Accessed July 18, 2024.

¹⁸ Negev M, Zea-Reyes L, Caputo L, Weinmayr G, Potter CA, de Nazelle A. Barriers and Enablers for Integrating Public Health Cobenefits in Urban Climate Policy. Annu Rev Public Health. 2021.

https://api.semanticscholar.org/CorpusID: 245425678

¹⁹ Delpla I, Diallo TA, Keeling M, Bellefleur O. Tools and Methods to Include Health in Climate Change Adaptation and Mitigation Strategies and Policies: A Scoping Review. Int J Environ Res Public Health. 2021;18(5). doi:10.3390/ijerph18052547

²⁰ Zhao C, Yan Y, Wang C, et al. Adaptation and mitigation for combating climate change – from single to joint. Ecosyst Heal Sustain. 2018;4(4):85-94. doi:10.1080/20964129.2018.1466632

²¹ Klein, R.J.T., S. Huq, F. Denton, T.E. Downing, R.G. Richels, J.B. Robinson FLT. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change,. In: M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der

Linden and C.E. Hanson, ed. Climatic Change. United Kingdom: Cambridge University Press, Cambridge; 2015. doi:10.1007/s10584-015-1395-1.

- ²² Zhao C, Yan Y, Wang C, et al. Adaptation and mitigation for combating climate change from single to joint. Ecosyst Heal Sustain. 2018;4(4):85-94. doi:10.1080/20964129.2018.1466632
- ²³ Environmental Protection Agency. Using trees and vegetation to reduce heat islands.
- https://www.epa.gov/heatislands/using-trees-and-vegetation-reduce-heat-islands. Published 2023
- ²⁴ Knight T, Price S, Bowler DE, et al. How effective is 'greening' of urban areas in reducing human exposure to ground-level ozone concentrations, UV exposure and the 'urban heat island effect'? An updated systematic review. Environ Evid. 2021;10:1-38. https://api.semanticscholar.org/CorpusID: 235338571
- ²⁵ Salmond JA, Tadaki M, Vardoulakis S, et al. Health and climate related ecosystem services provided by street trees in the urban environment. Environ Heal. 2016;15(1):S36. doi:10.1186/s12940-016-0103-6.
- ²⁶ Wood A, Queiroz C, Deutsch L, et al. Reframing the local–global food systems debate through a resilience lens. Nat Food. 2023;4(1):22-29. doi:10.1038/s43016-022-00662-0
- ²⁷ Floater G, Heeckt C, Ulterino M, et al. Co-Benefits of Urban Climate Action: A Framework for Cities.; 2016. https://eprints.lse.ac.uk/68876/1/Cobenefits_Of_Urban_Climate_Action.pdf. Accessed July 18, 2024.
- ²⁸ Negev M, Zea-Reyes L, Caputo L, Weinmayr G, Potter CA, de Nazelle A. Barriers and Enablers for Integrating Public Health Cobenefits in Urban Climate Policy. Annu Rev Public Health. 2021. https://api.semanticscholar.org/CorpusID: 245425678