guide to

EQUITABLE, COMMUNITY-DRIVEN CLIMATE PREPAREDNESS PLANNING

MAY 2017

USDN urban sustainability directors network

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ACCIÓN POR EL CLIMA DE RICHMOND ES:
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MAY 2017

FUNDED BY

Urban Sustainability Directors Network Innovation Fund

Prepared for the Urban Sustainability Directors Network

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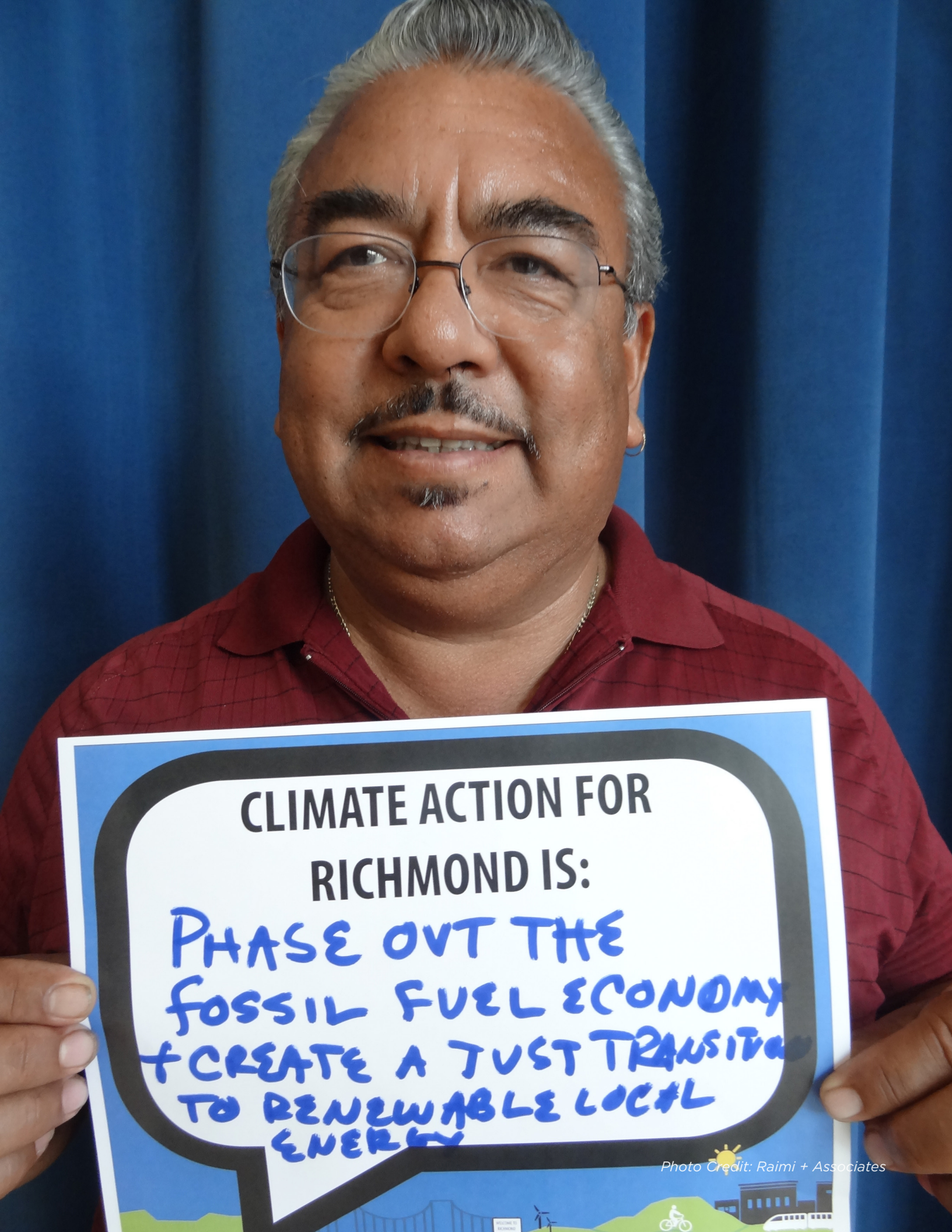

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EXECUTIVE SUMMARY

Climate change is one of the most critical and complex challenges that society faces today. Even while climate change affects everyone, not all people are impacted equally. People of color, immigrants, refugees, and lower-income populations experience increased exposure and sensitivity to climate hazards and a reduced capacity to adapt. As local governments plan and implement their response to climate change, an opportunity exists to create stronger, more equitable communities for everyone.

An inclusive, community-centered planning process can maximize the benefits of climate preparedness action among lower-income populations and communities of color, while creating greater resilience by empowering those most affected to shape the decisions that will impact their lives. Transformative actions, such as policies that address the root causes of persistent social inequities, can be paired with measures that prepare communities for future climate change impacts and reduce potential hazard vulnerability.

Delivering more equitable outcomes requires a different approach to planning. Many climate preparedness and adaptation guides exist and most acknowledge the importance of equity and public participation; however, few address equity issues by addressing specific adaptation solutions, tactics for inclusive community engagement, or the root causes of inequities in climate risk. This document addresses these gaps. The purpose of the Guide to Equitable, Community-Driven Climate Preparedness Planning is to provide guidance to local governments in designing and implementing a more inclusive, equitable planning process.

Photo Credit: Raimi + Associates

The Equitable, Community-Driven Climate Preparedness Planning Framework provides:

1. **BACKGROUND AND INTRODUCTION** to the problem of increased climate risk among lower-income communities and communities of color, or frontline communities, and the need for an equitable climate preparedness planning process
2. Introduction to **SOCIAL INEQUITIES** and models to advance equity
3. Overview of the **EQUITABLE, COMMUNITY-DRIVEN CLIMATE PREPAREDNESS PLANNING FRAMEWORK**, which builds on a conventional planning process
4. **EQUITABLE CLIMATE RESILIENCE SOLUTIONS** that include typical adaptation strategies, equity considerations, equity solutions, and key practice examples

CHAPTER 1: BACKGROUND AND INTRODUCTION

Many factors—such as racism, income and wealth, health status, and neighborhood conditions — influence a community's sensitivity to climate impacts and their ability to adapt. Lower-income populations and communities of color are often burdened with multiple, overlapping factors that cumulatively impact their ability to respond to hazards. Structural and institutional racism has resulted in the disproportionate distribution of benefits and burdens in our society, which results in increased climate risk.

CHAPTER 2: PRIMER ON SOCIAL INEQUITIES AND THE ROLE OF GOVERNMENT

Institutions – particularly governments – and the structural system that they are part of, may function to sustain racial and social inequities that increase disproportionate risk to climate change. Race is a major determinant of life outcomes and is a reliable predictor of climate hazard risk. Institutions and structural systems can drive and perpetuate societal differences along racial lines. Several frameworks and models exist to advance racial equity, and many local governments have begun to explicitly address racial and social inequities within their government operations and decision-making processes.

CHAPTER 3: EQUITABLE, COMMUNITY-DRIVEN CLIMATE PREPAREDNESS PLANNING FRAMEWORK

Chapter 3 introduces the Equitable, Community-Driven Climate Preparedness Planning Framework. Community partnership and collaboration are at the core of equitable climate resilience planning and are critical because they ensure that issues of greatest concern for communities disproportionately impacted by climate change are elevated throughout the process, the analysis reflects community expertise and experiences, and the adaptation and preparedness actions prioritize frontline communities. Community and local government readiness are also central to the Framework, as a strong foundation is needed to carry out a collective, cohesive planning process. The seven steps of the Framework are discussed in detail, including specific activities, resources, and examples for each step.

CHAPTER 4: EQUITABLE CLIMATE RESILIENCE SOLUTIONS

Chapter 4 compiles typical adaptation strategies for different climate hazards, describes equity considerations for each, and defines specific planning solutions to address equity considerations. Participation and engagement of the community is central to many of the equity strategies discussed. To the extent possible, this chapter also describes ways to address the contributing causes of social and racial inequities through climate preparedness and adaptation strategies. Each discussion of climate hazards – extreme heat, urban flooding and coastal flooding, wildfires and air quality, and rising utility and food costs – includes a two-page vignette infographic depicting how climate change disproportionately impacts lower-income communities and communities of color, the contributing causes of disproportionate impacts, conventional strategies to address impacts, equity concerns, and solutions to address equity concerns. The chapter concludes with a table that illustrates typical adaptation strategies, equity considerations, equity solutions, and practice examples.

BACKGROUND & INTRODUCTION

BACKGROUND & INTRODUCTION

Climate change is one of the most critical and complex threats that society faces today, and some population groups and communities are at greater risk than others. Climate risk is a function of exposure to natural hazards, sensitivity to these hazards, and the ability to adapt. Systemic and institutional racism and classism have resulted in increased exposure and sensitivity to hazards and a reduced capacity to adapt among people of color, immigrants, refugees, and lower-income residents, often referred to as frontline communities.

By uncovering and addressing the contributing causes of disproportionate climate risk, local governments can best support community preparedness, while also advancing racial and social justice more broadly. Equitable climate preparedness planning strives to fairly distribute the benefits and burdens of climate change and climate actions through a community-driven planning process that empowers those most affected to shape the decisions that will impact their lives.[1] An equitable planning process also builds social cohesion and social capital, as it brings communities together to address a shared challenge and identify strategies for improvement.

Delivering more equitable outcomes requires a different approach to planning. For the most part, existing government decisions and processes have not resulted in equitable outcomes for frontline communities. Across the United States, racial disparities in wealth continue to persist and are widening.[2] Differences in health outcomes by race and ethnicity, income, educational attainment, and geographic location continue to occur and are increasing for certain health conditions.[3] Similarly, disparities in impacts from natural hazards exist. Superstorm Sandy, a hurricane that hit New York and New Jersey in October 2012, disproportionately affected lower-income renters and left many vulnerable to housing instability. Sixty-eight percent of renters making claims to the Federal Emergency Management Agency (FEMA) were low-income.[4] While business-as-usual planning techniques may improve some outcomes, they may not achieve climate resilience, particularly in the communities and among the populations that stand to be affected the most.

> *"Climate change affects all, but not all people are affected equally."*
> *- Jacqueline Patterson, Director of the NAACP Environmental and Climate Justice Program*

PURPOSE OF THE PLANNING APPROACH

The purpose of the Equitable, Community-Driven Climate Resilience Planning Framework is to guide local governments in designing and implementing a community-driven, equitable climate preparedness planning process. Many climate preparedness and adaptation guides exist. While most state that equity and public participation are important, few address the root causes of disproportionate risk or detail specific equitable adaptation solutions or tactics for community-driven planning. This document addresses these gaps by taking an equity-centered approach to adaptation planning, providing a framework for understanding and addressing the contributing causes of disproportionate climate risks, providing community-driven planning strategies, and presenting step-by-step actions and adaptation solutions. Through this guide, climate preparedness planning is redefined and reoriented toward building a more just and sustainable future.

Traditional planning practices are not well designed to understand and address how racial and social inequities intensify climate risk. As a result, climate adaptation plans may inadvertently perpetuate or exacerbate existing racial and social inequities. This guide provides approaches to planning as well as specific strategies that can support more equitable climate preparedness outcomes. The Equitable, Community-Driven Climate Resilience Planning Framework provides:

1. **BACKGROUND AND INTRODUCTION** to the problem of increased climate risk among lower-income communities and communities of color, or frontline communities, and the need for an equitable climate preparedness planning process
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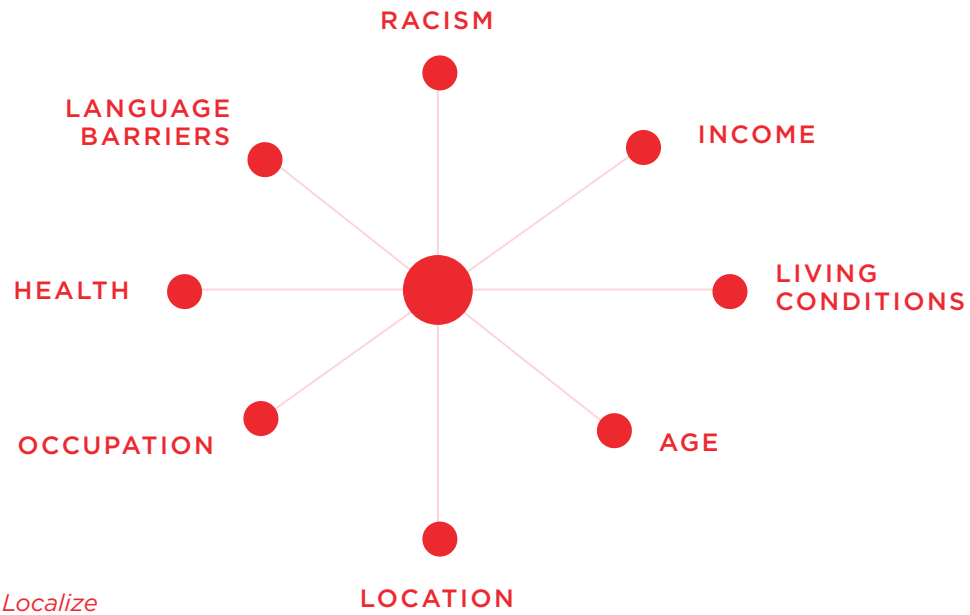
3. Overview of the **EQUITABLE, COMMUNITY-DRIVEN CLIMATE PREPAREDNESS PLANNING FRAMEWORK**, which builds on a conventional planning process
4. **EQUITABLE CLIMATE RESILIENCE SOLUTIONS** that include typical adaptation strategies, equity considerations, equity

CLIMATE CHANGE VULNERABILITY

Many factors influence community and individual sensitivity to climate impacts and their ability to adapt to climate change. Figure 1 shows some factors that can impact sensitivity and vulnerability to climate change.

For example, outdoor workers and people with pre-existing health conditions are at greater risk from heat events, and those with lower incomes have fewer resources to repair flood damage and may live in poor housing conditions. Socially-isolated people may not have a personal network to help them out during an emergency, and people with limited English language proficiency are less likely to access programs that could help during or after an extreme weather event. Individual biological factors (such as age or health status) can amplify a population's sensitivity to climate change. Communities of color are often burdened with multiple, overlapping factors that cumulatively impact their ability to adapt or respond to climate change.[5] [6] Racism is a key factor influencing climate vulnerability. Structural and institutional racism in our economic, government, and social systems has resulted and continues to result in the disproportionate distribution of the benefits and burdens of our society leading to increased climate risk. Figure 2 depicts how root causes, social factors, and biological factors interact to contribute to increased sensitivity to climate change.

Figure 1: Factors that can Increase Climate Vulnerability



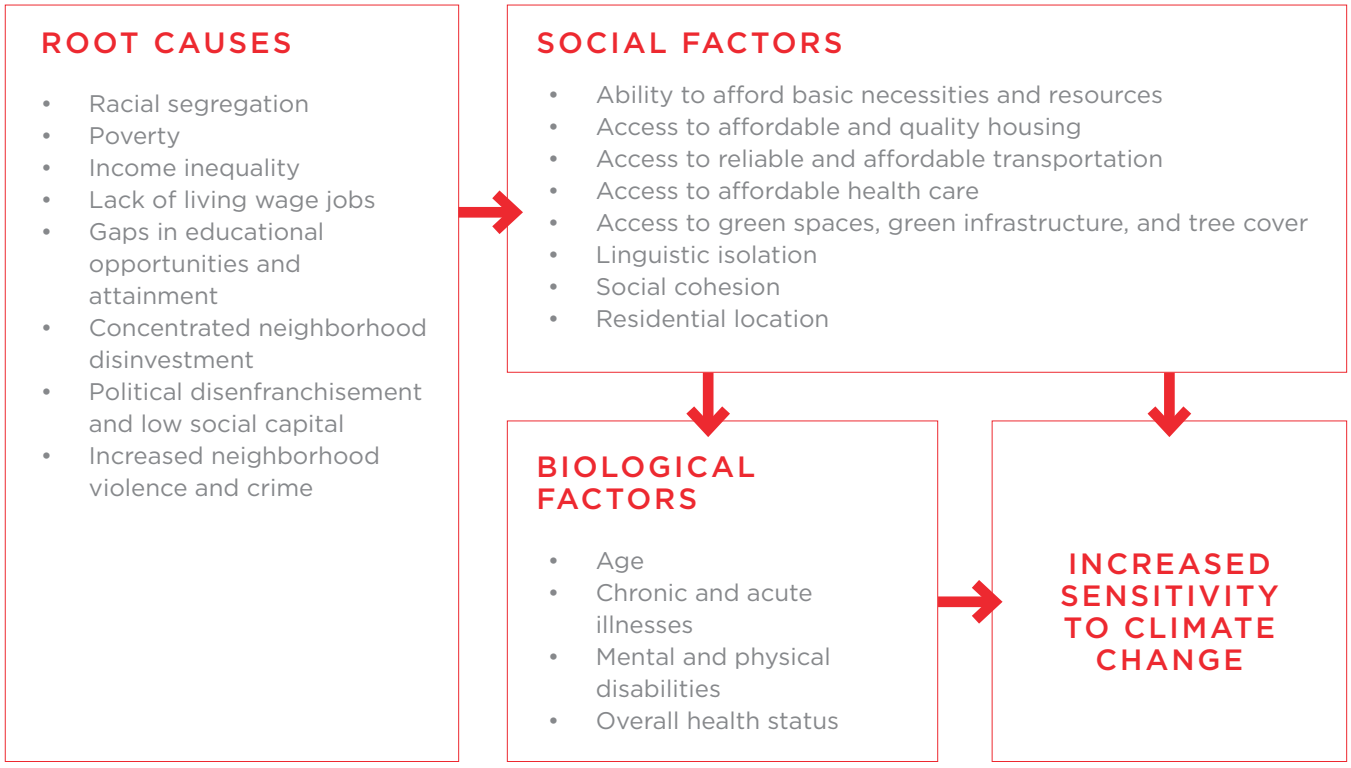
Adapted from Bay Localize

ADDITIONAL RESOURCES

The resources below provide more details on social and biological risk factors to climate hazards:

- Social Vulnerability to Climate Change in California (Pacific Institute)
- Social Cohesion: The Secret Weapon in the Fight for Equitable Climate Resilience (Center for American Progress)
- Climate Change, Health, and Populations of Concern (US Environmental Protection Agency)

Figure 2: Root Causes and Factors Affecting Sensitivity to Climate Change



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PRIMER ON SOCIAL INEQUITIES AND THE ROLE OF GOVERNMENT

PRIMER ON SOCIAL INEQUITIES AND THE ROLE OF GOVERNMENT

The root causes of the inequities that increase frontline communities' sensitivity to climate hazards result from institutional practices and structural systems. This chapter discusses how institutions—particularly governments—and the structural system that they are part of, typically function to sustain racial and social inequities, which increase disproportionate risk to climate change. This chapter also describes key concepts for countering structural and institutional biases in government planning.

STRUCTURAL AND INSTITUTIONAL RACISM

Race is a major determinant of life outcomes, and, in the United States, it is inextricably tied to income and wealth.[7] Race is a reliable predictor of climate hazard risk, including vulnerability to many of the hazards projected to intensify under changing climate conditions and adaptive capacity.[8] Racial discrimination is a critical lens for understanding how significant disparities in life outcomes and access to opportunities are strongly associated with race.

Institutions and structural systems drive and perpetuate societal differences along racial lines. Institutions — such as government agencies, schools, media, etc. — and the systems they operate within are the fundamental motivating forces that create and sustain the social, environmental, and economic conditions in which people live. In many instances, governments — their decisions, processes, and practices — are important institutions that have underserved frontline communities and excluded them, whether intentionally and unintentionally, from public decision-making processes. These discriminatory practices have resulted in the inequitable distribution of resources, access to opportunities, and poor life outcomes that many lower-income populations and communities of color face.[9] [10] [11] [12] The result is that social inequities can increase disproportionate climate risk in these communities.

There are two main types of racism that affect policymaking and how decisions are made: institutional racism and structural racism. These are described in Figure 3.

Figure 3: Root Causes and Factors Affecting Sensitivity to Climate Change

INSTITUTIONAL RACISM AND POWER	• Institutional racism is defined as discriminatory treatment, unfair policies, and inequitable opportunities and impacts based on race that are produced and maintained by institutions • Individuals, with their own personal assumptions about race, take on the power of the institution when they act in ways that advantage and disadvantage people based on race
STRUCTURAL RACISM	• Structural racism is defined as the system of institutions that interact with one another to generate and reinforce racial inequities • Structural racism normalizes and reinforces existing dynamics that routinely advantage white people, while producing cumulative and chronic adverse outcomes for people of color

ADDITIONAL RESOURCES

The resources below provide more detailed information on institutional and structural racism:

- powell, ja. 2007. Structural Racism: Building Upon the Insights of John Calmore. Berkeley Law Scholarship Repository.
- Rudolph, L, et al. 2015. Climate Change, Health, and Equity: Opportunities for Action. Center for Climate Change & Health.
- Jones, CP. 2000. Levels of Racism: A Theoretic Framework and a Gardener's Tale. American Journal of Public Health. 90(8):1212-1215.

HOW STRUCTURAL AND INSTITUTIONAL RACISM IS PERPETUATED THROUGH GOVERNMENT PROCESSES

At times, government processes have been explicitly racist (e.g., redlining, exclusionary housing policies, etc.), while at other times discriminatory outcomes have been implicit. Whether explicit or inadvertent, government processes have been an important mechanism for creating and sustaining social inequities that increase climate risk in frontline communities. Communities of color and lower-income populations are more likely to be politically disenfranchised and marginalized in the democratic process, which influences how policy decisions are made.[13] When racial inequities are not openly acknowledged in climate action planning, it is likely they will be created, worsened, and/or perpetuated.

An example of institutional and structural racism producing social inequities is the set of federal economic and housing policies that historically helped to create enormous wealth and income gaps between white families and families of color.[14] Under the Federal Housing Administration loan program, economic financial institutions refused to back mortgages for African Americans, while redlining and racial covenants restricted where African American families could live and their financial opportunities to homeownership. These practices impacted the ability of African American families to increase their wealth through homeownership and pass those assets on to their families, which is central to wealth building.[15] Other federal programs, such as the Housing Acts of 1949 and 1954 (also called urban renewal), led to the demolition of neighborhoods of color and furthered disadvantaged and concentrated people of color into disinvested areas. Over time, these policies and programs led to racial segregation, and neighborhoods of color struggled with isolation, high concentrations of poverty, chronic disinvestment, high rates of crime and unemployment, and poor life outcomes. Neighborhoods were created with vastly different living and social conditions and access to opportunities that were strongly connected to race.[16] [17] The wealth gap between racial and ethnic groups grew wider.

As a result of these policies and laws, lower-income communities and communities of color are also more likely to reside in areas at greater risk of climate impacts, such as storm surges, flooding, urban heat islands, extreme heat, poor air quality, and other environmental pollution.[18] Frontline communities may also face disproportionate challenges that make it more difficult to respond to or cope with disasters or climate events, such as limited financial resources, which can inhibit the ability to evacuate during emergencies. Frontline neighborhoods may also lack the needed infrastructure to mitigate the effects of a changing climate, such as green spaces and green infrastructure. Communities most vulnerable to climate change are most likely to lack the resources to adapt.

RACIAL EQUITY

The achievement of "racial equity" is when race can no longer be used to predict life outcomes, and outcomes for all groups are improved. – Government Alliance for Racial Equity

Hurrican Katrina is a salient example of how social inequities increase the risk of natural hazards and climate events among frontline communities. In August 2005, Hurricane Katrina made landfall in New Orleans, Louisiana, a city that was already struggling with racial segregation, high poverty rates, failing education systems, and substandard housing. Many communities there were underprepared for a disaster, as infrastructure and living standards in communities of color were already vulnerable before the storm hit.[19] [20] Hurricane Katrina was one of the costliest (total damage is estimated at $108 billion) and deadliest natural disasters in U.S. history. Over 80 percent of New Orleans was flooded after the levees broke, and thousands of lower-income residents that were unable to evacuate before the storm took up shelter in the Superdome. Over 1,800 fatalities were directly or indirectly linked to the storm across the Gulf Coast states, with about 1,500 occurring in Louisiana alone.[21] Lower-income communities and communities of color in New Orleans and the surrounding region were disproportionately affected.[22] Many people left or were evacuated from the city in the aftermath of the hurricane. In the decade after the storm, the percentage of African Americans in New Orleans has not rebounded to pre-storm levels compared to other races and ethnicities.[23] Residents most impacted by Hurricane Katrina were at the greatest risk and had the fewest resources to return to the city and rebuild.[24]

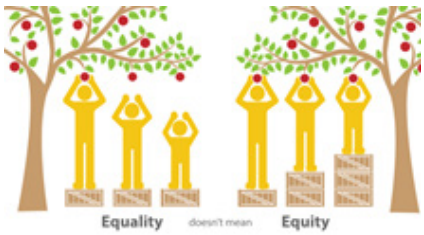
In addition to explicitly discriminatory policies and government practices, many well-meaning government policies have resulted in unintended consequences. Although unplanned, these indirect outcomes of policies and plans can have similar effects of increasing social inequities. For example, targeted neighborhood improvements, such as enhancements to public transit, can lead to increased property values and housing prices.[25] As a result, lower-income renters in these neighborhoods can become vulnerable to housing instability and displacement. It is important to identify potential inadvertent consequences of policies and plans and work with those most affected to minimize impacts.

FRAMEWORKS FOR ADVANCING EQUITY

The frameworks described in this section provide a structure for understanding equity and the basis for how government institutions can improve equitable outcomes through its decision-making processes. Examples are also provided to showcase how these frameworks can be operationalized in local governments.

Photo Credit: Raimi + Associates

EQUITY VS. EQUALITY



Equity and equality are often used interchangeably, but equity and equality do not mean the same thing. Equality is about sameness – meaning that everyone receives the same thing regardless of any other factors. However, equality is only useful if everyone starts from the same place, which is often not the case. Lower income populations and communities of color often have less access to healthy and energy efficient housing, transit, or safe bicycling and walking routes. Equity, on the other hand, is about fairness, which is about ensuring that people have access to the same opportunities and have what they need to thrive and succeed. Equity is needed before equality can be reached. This understanding recognizes that people may have different starting points and may need different types and level of support to flourish.

EQUITY OBJECTIVES: PROCEDURAL, DISTRIBUTIONAL, AND STRUCTURAL EQUITY

Equity can be further defined and characterized into three objectives: 1) procedural, 2) distributional, and 3) structural. These three objectives represent different dimensions of equity, each requiring distinctive strategies to be achieved. Figure 4 below further details the three equity objectives.[26]

Figure 4: Equity Objectives

PROCEDURAL	• Create processes that are transparent, fair, and inclusive in developing and implementing any program, plan, or policy • Ensure that all people are treated openly and fairly • Increase the civic engagement opportunities of communities that are disproportionately impacted by climate change
DISTRIBUTIONAL	• Fairly distribute resources, benefits, and burdens • Prioritize resources for communities that experience the greatest inequities, disproportionate impacts, and have the greatest unmet needs
STRUCTURAL	• Make a commitment to correct past harms and prevent future unintended consequences • Address the underlying structural and institutional systems that are the root causes of social and racial inequities

Transparency and a commitment to democratic principles are central to the goal of inclusive government and procedural equity. It requires that local governments share decision-making processes publicly and that all stakeholders understand in how and why decisions are made. Multiple community engagement strategies exist to increase the accessibility and inclusivity of government processes, as will be described in later chapters of the report. In many communities, a historic lack of transparency between local government and communities of color and lower-income communities is a barrier to creating procedural equity. Previous discrimination or shortcomings must be acknowledged and addressed through the planning process to move forward. Although public participation and a fair and inclusive government are necessary components for equity, these tactics alone are not sufficient. Strategies to attain distributional and structural equity are also required to ensure that outcomes are fair and that root causes of inequities are addressed through improved government processes.

FRAMEWORK FOR INSTITUTIONALIZATION OF RACIAL EQUITY

The Framework for Institutionalization of Racial Equity conceptualizes three ongoing tactics for achieving equity within governmental organizations.[27] [28]

1. **NORMALIZING:** For racial equity to be advanced, especially in governments that may unintentionally create or sustain social inequities, explicit discussions of race and racism are vital. Normalizing these conversations around race and the effects of racism creates a shared understanding of organizational priorities, viewpoints, and values.

2. **ORGANIZING:** Organizing builds partnerships and mechanisms for engagement. This is about organizing staff and partners to mobilize and engage people to get the critical feedback and support they need to grow and continuously advance the work through an iterative and cyclical process. This phase also involves developing an internal infrastructure to address racial inequities.

3. **OPERATIONALIZING:** The operationalization of strategies uses data and tools that enhance institutional operations to advance racial equity within institutions. This phase operationalizes racial equity by providing staff and leadership with the tools they need to make conscious choices that will advance equity.

TALKING ABOUT RACE

Normalizing race through conversations establishes shared values and a common understanding. A common language creates a story that then makes it easier to communicate a commitment to racial equity, both internally and externally, and creates a platform for coordinated work towards equitable outcomes.

Resources around normalizing race include:

- Race Equity and Inclusion Action Guide: Embracing Equity (Annie E. Casey Foundation)
- Let's Talk About Race: How Racially Explicit Messaging Can Advance Equity (Center for Social Inclusion)
- Racial Equity Tools (RacialEquityTools.org)
- Framing the Dialogue on Race and Ethnicity to Advance Health Equity (National Academies of Sciences, Engineering, and Medicine)
- Films and curricula (World Trust Educational Services)

Photo Credit: Raimi + Associates

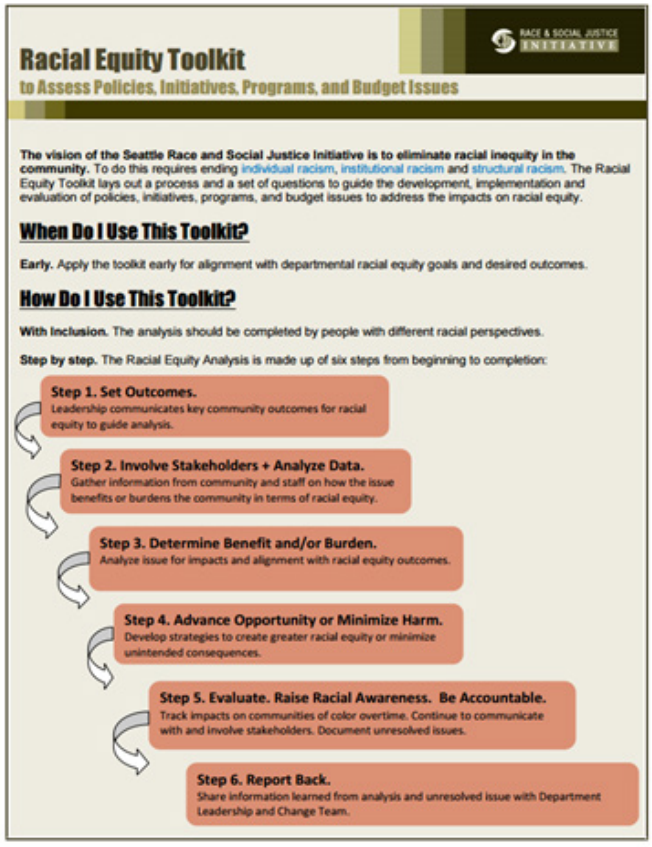
ADVANCING RACIAL EQUITY THROUGH GOVERNMENT OPERATIONS

A racial equity lens can be used to address institutional and structural inequities resulting from government operations. An example of operationalizing equity is the City of Seattle's mandated use of their Racial Equity Toolkit. The Racial Equity Toolkit is a six-step analysis applied to the City of Seattle's policies, programs, and budget decisions to understand how decisions made will impact equity. The assessment is driven by community stakeholder involvement and identifies program, partnership, and policy strategies for addressing impacts. Emphasis is also placed on evaluation and raising awareness about racial inequities. Seattle City Council passed an ordinance in 2009 that directed all City departments to use the Toolkit to inform decision-making, including all budget proposals.[29] Figure 5 depicts the six steps of the Toolkit.

A racial equity lens can highlight unseen community problems and offer solutions. The neighborhoods in Southeast Seattle, a predominantly lower-income community of color, had a high rate of non-functioning streetlights, potentially affecting neighborhood safety and quality of life. After some investigation, it became apparent that the complaint-based system the City had in place for replacing burnt-out streetlights was not working for all residents. Some residents in Southeast Seattle tended to avoid interacting with government and, therefore, did not report burnt-out streetlights. As a solution, the public utility shifted from a solely complaint-based system to working proactively to replace light bulbs. As a result, not only did Southeast Seattle get better lighting, but customer satisfication improved overall. [30]

The City of Portland and Multnomah County's 2015 Climate Action Plan (CAP) centers equity as a guiding vision and a primary outcome. The Plan takes a broad view of equity and incorporates procedural, distributional, and structural equity into the CAP's objectives. With guidance from their Equity Working Group, composed of representatives from community-based organizations representing the interests of lower-income communities and communities of color, the CAP incorporates equity throughout and highlights the use of an equity lens to prioritize the needs of frontline communities. Successful implementation of the CAP will also include targeted investments in areas that have seen under-investment in the past, as well as investments in youth and adult job opportunities, which fulfill actions in the plan. Additionally, the City and County will develop climate-equity metrics to track and monitor how equity considerations are integrated into the Plan's implementation. The process of developing an equity-centered climate action plan also became a catalyst for City and County learning. Many staff members noted that hearing community concerns enables them to see their work differently and better understand the equity implications of their actions.[31]

Figure 5: City of Seattle's Racial Equity Toolkit



WHOLE GOVERNMENT APPROACH

Advancing structural equity can also be addressed through a whole-government approach. With an understanding of institutional racism and structural systems that create and perpetuate social inequities, cross-sector or across-government collaborations are needed to address the root causes of disproportionate social and environmental impacts. This "inside" local government approach parallels the "outside" government strategy of equitable partnership with community members most impacted by climate risks. Complex issues, such as increased social vulnerabilities to climate hazards, rarely have a singular solution that can be implemented by one sector or government agency alone. Addressing the root causes of social inequities that disproportionately impacts frontline communities presents both a challenge and an opportunity to improve government processes.

"The common threat is getting government out of silos. Nothing [in the community] is experienced in silos."

- Non-profit advocate

A whole-government approach, such as Health in All Policies (HiAP)[32], is a transformative approach toward addressing the systems, institutions, policies, processes, and practices that create and reinforce unjust differences in exposures to environmental and natural hazards by considering health and equity in decision-making processes. This approach requires a longer-term view of addressing inequities through a commitment to working across government agencies that run outside any specific planning process.

An example of a whole-government approach was used by the City of Richmond, California. Richmond adopted a HiAP strategy and ordinance in 2014, which established a framework for collaboration within the City's departments and with community-based organizations and other government agencies to address community, health, equity, and sustainability. In 2015, Richmond developed its climate action plan with a focus on health equity, which is consistent with Richmond's HiAP strategy.[33]

Although this may be outside the traditional scope of planners, opportunities may arise to collaborate with other public agencies, departments, or offices on shared goals. Utilizing a whole-government or HiAP approach, planners should take advantage of opportunities as they present themselves and remain open to new ways to partner outside of their sector in non-traditional ways. For example, any action around weatherization of older homes may present an opportunity for planners to work with key staff from the housing, community and economic development, and public utilities sectors on preserving housing affordability and lowering the cost of utilities for lower-income households. By working together, benefits can be further maximized while also mitigating any unintended consequences.

EQUITABLE, COMMUNITY-DRIVEN CLIMATE PREPAREDNESS PLANNING FRAMEWORK

EQUITABLE, COMMUNITY-DRIVEN CLIMATE PREPAREDNESS PLANNING FRAMEWORK

Community collaboration is foundational for advancing equitable climate preparedness outcomes and is the bedrock of the Equitable, Community-Driven Climate Preparedness Planning Framework. Community-driven climate preparedness planning refers to the engagement of residents most vulnerable to climate change in identifying the impacts they may face and recognizing the potential solutions most relevant to their unique contexts.[34] The objectives of the Framework are to empower the communities experiencing the greatest climate-related risks to co-define the most appropriate solutions. The Framework is intended to be flexible and can be applied before planning is initiated, at the beginning of the planning process, or mid-stream.

The Framework addresses and incorporates the equity objectives introduced in Chapter 2. Procedural equity is accomplished in the Framework through community engagement, shared decision making, and transparency in government processes. Distributional equity is achieved by ensuring that the plan reflects community concerns and priorities and that there are mechanisms in place to review and monitor the implementation of actions. Structural equity occurs by taking a whole government approach to addressing social inequities, changing organizational norms around racial equity, and instituting other transformative actions, such as normalizing and operationalizing racial equity within government processes.

Local governments can employ this framework in whole or in part. Many may find it challenging to apply these concepts and strategies at first or all at once, and different local jurisdictions will have varying starting points and abilities to implement equity considerations. Implementing organizational culture and process changes to prioritize equity requires a long-term commitment on the part of local government agencies. Further, equity considerations that work in one local jurisdiction may not be feasible or may look differently in another. Local context - which is driven by community priorities, relationships, capacity, and political dynamics - will ultimately determine how equity will be incorporated in government operations and actions taken to accomplish goals.

Government planning processes are rarely community-driven or centered on equity. Public outreach is often reactionary and conducted after the planning process has been structured or is used to inform the community about the planning process. Many public engagement strategies are conducted to comply with laws and other requirements, rather than viewed as a method for collaboration and partnership with an expectation that more community collaboration will yield better ideas and results. Many public agencies also tend to value technical expertise above lived, experiential knowledge that community members possess. Public processes are also often confined to tight timelines and budgeting constraints that necessitate limiting community engagement. Furthermore, many communities distrust government institutions and/or feel that they have provided input in the past that has not been implemented. These factors make it difficult to conduct effective, authentic community engagement and collaboration.

In this chapter, the Equitable, Community-Driven Climate Preparedness Planning Framework is compared to a conventional planning process. This chapter also describes opportunities to incorporate equity into each phase of the climate preparedness process and additional information on specific strategies, activities, and key examples.

> *"There is a tendency toward political expediency. It's hard to step outside of personal experiences and preferences,"*
>
> *- Local government official*

WHAT IS EQUITABLE, COMMUNITY-DRIVEN CLIMATE PREPAREDNESS PLANNING?

In a community-driven climate preparedness planning process, frontline community members most impacted by climate change share decision making power with the lead government agency and help produce strategies focused on their priorities and concerns.[35] Community partnership and collaboration are at the core of equitable climate resilience planning. Community involvement is critical because it ensures that issues of greatest concern for communities disproportionately impacted by climate change are elevated throughout the process, analysis reflects community expertise and experiences, and adopted preparedness and adaptation strategies prioritize frontline communities and help to build resilience in communities with the greatest risk to climate impacts.

Engaging frontline communities can yield benefits to the planning process, but can also be challenging due to various constraints including timelines, resources, language barriers, levels of trust, and geographic scope. Effective community engagement by public agencies is also dependent on the history of existing relationships between community residents and local government agencies. For example, community mistrust of government can be a barrier to collaboration. Engaging with existing groups, such as neighborhood associations or community-based organizations who already directly work with those most at risk, may be a more successful alternative to directly engaging individual residents.

COMMUNITY CAN BE DEFINED IN MULTIPLE WAYS:

- Community residents
- Community-based organizations
- Local non-profits and advocacy groups
- Community organizing groups
- Local businesses and merchants
- Other community stakeholders

Photo Credit: Raimi + Associates

CHARACTERISTICS OF AN EQUITABLE, COMMUNITY-DRIVEN CLIMATE PREPAREDNESS PLANNING PROCESS

An equitable climate preparedness planning process is defined by these characteristics.

1. **IDENTIFIES INEQUITIES:** The planning process actively identifies and addresses the contributing causes of climate vulnerabilities. It also highlights the experiences and expertise of marginalized populations and is responsive to their needs.

2. **ENGAGES WITH COMMUNITIES MOST IMPACTED:** Climate resilience requires a collaborative partnership approach to the development of solutions that is grounded in shared values and an understanding of the problems impacting communities experiencing disproportionate risks.

3. **PROMOTES DEMOCRACY AND TRANSPARENCY IN GOVERNMENT:** Processes support equitable decision-making by building the capacity of residents to participate in planning efforts, nurturing a culture of civic participation, and ensuring transparency in how decisions get made. Community stakeholders must be able to trust the planning process to fully participate. Decision-makers should also be educated to better understand the resiliency needs and interests of the populations they serve.

4. **ADDRESSES INEQUITIES:** Adaptation strategies are developed in partnership with the communities most impacted by climate change. Solutions and strategies should be focused on deriving multiple co-benefits and should aim to alleviate contributing causes of social vulnerabilities that augment climate risks.

5. **SUPPORTS INTEGRATIVE GOVERNMENT:** Process engages multiple sectors and disciplines and takes a "whole-system" approach to understanding the causes of vulnerability and developing solutions. As the causes of climate vulnerability and climate change are not the fault of any one sector or organization alone, no one sector can solve these integrated and complex problems.

6. **FOSTERS SUSTAINABILITY:** Sustainability considers current and future climate change impacts, and the need to ensure a better quality of life for all, while living within the limits of supporting ecosystems.

Adapted from Movement Strategy Center

Photo Credit: Raimi + Associates

The Equitable, Community-Driven Climate Preparedness Planning Framework has several benefits. The planning process is defined by the community and informed by their priorities and concerns. By centering on community priorities, there is a greater likelihood of addressing the concerns most relevant to equity. Opportunities exists to create resilience through the very process of developing a community-driven plan by increasing social cohesion, civic engagement, and social capital. A community-driven preparedness process can also build community power and leadership by increasing

community capacity to engage in plans and policies that will have a direct impact on their lives. Effective community engagement can also increase the plan's reach, defined as the degree that knowledge is disseminated to diverse audiences and translated into useful and understandable implementation tools and materials. Authentic engagement and partnership with communities can also lead to increased buy-in of the plan and support for implementation of strategies.

CONTINUUM OF COMMUNITY ENGAGEMENT

Community engagement is often depicted as a continuum increasing in the level of engagement and partnership from left to right, as shown in the figure below. Within any given planning process, various strategies for community engagement may be employed at different points in time.

INFORM	CONSULT	INVOLVE	SHARED LEADERSHIP	COMMUNITY-DRIVEN
Local government initiates an effort, coordinates with departments, and uses a variety of channels to inform the community to take action	Local government gathers information from the community to inform local government-led interventions	Local government engages community members to shape government priorities and plans	Community and local government share in decision-making to co-create solutions together	Community initiates and directs strategy and action with participation and technical assistance from local government
CHARACTERISTICS OF ENGAGEMENT				
• Primarily one-way channel of communication • One interaction • Term-limited to project • Addresses immediate need of local government	• Primarily one-way channel of communication • One to multiple interactions • Short to medium-term • Shapes and informs local government programs	• Two-way channel of communication • Multiple interactions • Medium- to long-term • Advancement of solutions to complex problems	• Two-way channel of communication • Multiple interactions • Medium- to long-term • Advancement of solutions to complex problems	Two-way channel of communication Multiple interactions Medium to long-term Advancement of solutions to complex problems
STRATEGIES				
Media releases, brochures, pamphlets, outreach to population groups, translated information, new and social media	Focus groups, interviews, community surveys, public hearings, public comment periods	Forums, advisory boards, stakeholder involvement, coalitions, policy development and advocacy, including legislative briefings, and testimony, workshops, community-wide events	Co-led community meetings, advisory boards, coalitions, and partnerships, policy development and advocacy, including legislative briefings and testimony	Community-led planning efforts, community-hosted forums, collaborative partnerships, coalitions, policy development and advocacy including legislative briefings and testimony

Adapted from King County, Washington and IAP2

A community-driven equitable climate preparedness planning process involves collaboration and shared decision-making between local government staff and the community with the aim of co-creating an equitable climate preparedness plan. In terms of the levels of engagement continuum depicted above, this approach most aligns with shared leadership and community-driven, where there is an emphasis on a shared decision-making and co-ownership over the development of the plan.

APPROACH TO EQUITABLE, COMMUNITY-DRIVEN CLIMATE PREPAREDNESS PLANNING

Figure 6 presents a sample set of steps that are often utilized in a conventional planning process. Although there is no singular defined way to create a plan, many planning efforts are tailored to fit a similar set of process steps.

Figure 6: Conventional Planning Process

Figure 7: Equitable, Community-Driven Climate Preparedness Planning Framework

Lower-income communities and communities of color usually play a limited role in a conventional planning process. Local agencies inform the community about the plan or project, gather information from the community to inform decision making, and, at times, work with the communities to shape the plan or project. Rarely does the community share in decision making to co-create solutions or co-lead planning efforts.

An Equitable, Community-Driven Climate Preparedness Planning Framework is a departure from this conventional planning process. It is fundamentally different because it focuses on the co-creation and co-ownership of the plan between the community and local government partners. The planning process begins with laying the groundwork for partnership between the community and local government agencies. Equitable collaboration with communities at greatest climate risk is viewed as an essential component throughout the planning process, starting in project initiation and continuing through to project implementation and monitoring. Figure 7 illustrates specific actions that can be taken within each step of the planning process to ensure an equitable, community-driven process is achieved.

Using the Equitable, Community-Driven Climate Preparedness Planning Framework as a foundation, the following sections provide practical process steps, examples activities, and resources local government planners can use to center a climate preparedness process on equity.

COMMUNITY AND LOCAL GOVERNMENT READINESS

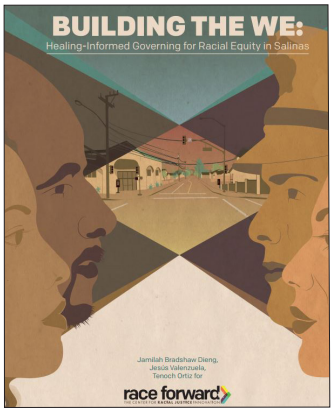
This pre-project initiation phase seeks to ensure that the community and local government are prepared to begin a collective planning process. An equitable, community-driven preparedness planning process requires a strong foundation for community engagement, which is based on trust and transparency. Building a basis for ongoing community partnership often requires that effective partnership is built over time and is based on nurturing relationships. Time and resources are needed to develop trust. In municipalities where trust is eroded, more work and time would be necessary to rebuild avenues of communication and transparency between local governments and the community. In this instance, to proceed head-on with community engagement without first addressing the legacy of mistrust, hurt, and harm between local government and the community would not yield the development of relationships, sharing of knowledge, and co-ownership of the plan that an equitable, community-driven process entails. These early investments in relationship building will hopefully pay off in creating stronger bonds, trust, and more effective partnerships over time.

A strong basis for community engagement requires two main components: local government and community readiness. Local government readiness requires an investment on the part of public agencies to ensure that their staff possess the knowledge and skills to effectively engage and collaborate with the community. This could include trainings on racial equity,[36] cultural humility approaches,[37] communication strategies, or new methods for effective community engagement and partnering.

A racial equity framework can be embedded into broader organizational practices and policies. This could also include internal ongoing discussions about differential power dynamics within the conventional planning process and methods for addressing this. Most importantly, local government readiness requires acknowledgement by local governments that the conventional planning process, as effective as it may be in many ways, has not been successful in creating equitable and sustainable communities for all residents, especially populations at the greatest risk from climate hazards.

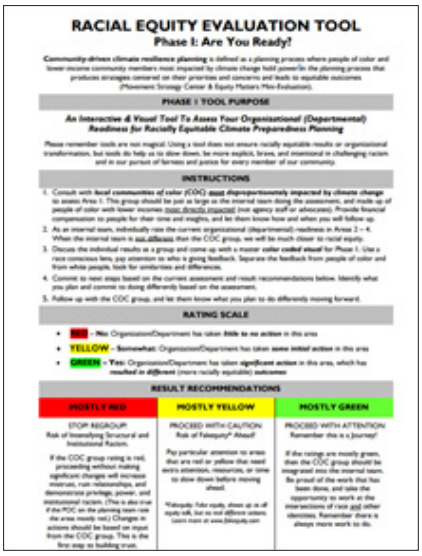
BUILDING THE WE

In Building the We: Healing-Informed Governing for Racial Equity in Salinas, California, Race Forward shares how community residents and City of Salinas staff are co-creating a process that supports racial healing and systemic equity.



THE RACIAL EQUITY EVALUATION TOOL

The Racial Equity Evaluation Tool, developed by Equity Matters, is an interactive tool to assess who holds comfort and control by race in the climate preparedness planning process. It is designed to be used throughout the planning process to assess and provide insight into areas for changes or enhancement. Early usage of the tool can help inform a more effective process form the start. Participants chart real actions into four stages: business-as-usual, access and inclusion, programmatic racial equity, and structural racial equity.



RACIAL EQUITY EVALUATION TOOL

Phase I: Are You Ready?

PHASE I TOOL PURPOSE

INSTRUCTIONS

RATING SCALE

RESULT RECOMMENDATIONS

MOSTLY RED	MOSTLY YELLOW	MOSTLY GREEN
STOP REGROUP: Risk of Intensifying Structural and Institutional Racism.	PROCEED WITH CAUTION: Risk of Folkequity* Ahead!	PROCEED WITH ATTENTION: Remember this is a journey!

"People need to trust the process...You can't talk about anything without trust."

- Community organizer

Internally, local government agencies should also invest time and energy to assess their level of readiness. Most importantly, local government staff should begin to understand the power and privilege they wield within the planning process, receive training on racial equity, work to unlearn counterproductive assumptions about community engagement, and incorporate strategies that build authentic and equitable partnerships. Local government should also remain open to continual learning and reflection, and acknowledge past missteps and mistakes. Rules of engagement or a project charter developed with the community can outline appropriate channels of communication and methods to resolve conflict should they arise between the community and local government.

Similarly, frontline communities also need to be ready and willing to participate in the planning process. This often involves trainings, education, and outreach on what climate change is, associated risks the community faces, and the importance of planning for a changing climate. Strategies should also be employed to support community leadership development and increase their comfort and ability to partner with local government agencies. Community readiness also means that the community feels heard and acknowledged throughout the process. As previously noted, this may require a discussion of past mistakes and oversights by local government that have eroded trust with the community and steps to rebuild trust and communication.

This phase is foundational for an equitable partnership. These steps are ongoing and do not necessarily begin or end with a specific project or plan. One of the main outcomes of laying the foundation for partnership is the development of genuine relationships built on trust and transparency, which requires dedication, openness, honesty, and a longer-term view. Partnership moves at the speed of trust,[38] and a gap in trust between frontline communities and local governments should be addressed. Community and local government partners must be willing to have these hard, uncomfortable, and honest conversations with each other.[39] Many processes and tactics can be used to build and maintain community partnership, as shown in Table 1.

Table 1: Steps, Activities, and Resources for Building Community and Local Government Readiness

PROCESS STEPS	SPECIFIC ACTIVITIES	RESOURCES AND PRACTICE EXAMPLES
BUILD LOCAL GOVERNMENT READINESS		
• City or local government staff undergoes education, training, and knowledge-building on how to effectively participate in an equitable, community-driven planning process • Understand the power dynamics between community members, City government, and other organizations • Embed racial equity into broader organizational practices and examine organizational readiness	• Conduct race equity trainings for local leaders • Develop a departmental/ agency and/or jurisdiction-wide racial equity action plan • Develop and use racial equity analysis to inform government decisions • Establish multi-departmental race equity teams • Conduct listening sessions at trusted community facilities	• Race Equity and Inclusion Action Guide (The Annie E. Casey Foundation) • Advancing Racial Equity and Transforming Government: A Resource Guide to Put Ideas into Action (Government Alliance on Race & Equity) • Racial Equity Toolkit: An Opportunity to Operationalize Equity (Government Alliance on Race & Equity) • City of Seattle Racial Equity Toolkit • How are Equality and Equity Different? Exercise (Just Health Action) • City of Seattle Inclusive and Public Engagement Guide • Racial Equity Evaluation Tool (Equity Matters)
BUILD COMMUNITY READINESS		
• Dedicate time to build community capacity around climate change and the importance of preparedness planning • Develop partnerships with local community-based organizations to facilitate education, engagement, and community collaboration • Cultivate community leaders to participate in and co-lead the preparedness planning process • Create methods for increasing understanding, communication, transparency, accountability, and trust between community members and local government staff	• Host and conduct a community leadership training program • Integrate learning and training into every meeting with the community • Host pop-up stands regarding climate change awareness at community events • Work with community leaders, civic groups, neighborhood associations, and community-based organizations to connect with hard-to-reach populations	• Cleveland Climate Ambassador Program (Cleveland Climate Action Fund) • Community Leadership Programs: Empowering Future Leaders (Institute for Local Government)

PROJECT INITIATION

In the project initiation phase, the community and public agency define the community-driven planning process and identify appropriate engagement and empowerment techniques. Many processes and actions can be used to ensure that the project is co-created and co-owned by the community, as shown in Table 2.

One of the most important outcomes of this phase is the establishment of a shared decision-making structure and defined set of expectations for involvement and participation in the planning process. A project charter can be used to explicitly outline the roles of partners, expectations, decisions to be made, levels of review and feedback required, and effective communication and outreach strategies. Additionally, community partners should be compensated for their time and expertise, and resources, such as food and childcare, should be provided at community meetings.

> *"If the community doesn't have the resources, capacity, and bells and whistles to be part of the decision making, writing, and implementing of the plan, then the plan doesn't count."*
>
> *- Community resident*

Photo Credit: Toronto and Region Conservation Authority

Table 2: Steps, Activities, and Resources for Project Initiation

PROCESS STEPS	SPECIFIC ACTIVITIES	RESOURCES AND PRACTICE EXAMPLES
CO-CREATE THE COMMUNITY-DRIVEN PLANNING PROCESS		
• Collaborate with the community in designing and implementing the planning process • Collaborate with the community to define the issues and problems, and to define goals, vision, and principles for the project • Ensure appropriate racial and/or geographic representation on core planning team	• Develop a project or plan charter that outlines roles of stakeholders, participation, responsibilities and expectations, methods of communication, and strategies for group conflict resolution • Establish a shared decision-making structure between the local government and community leaders • Recognize and compensate community members and organizations for their expertise and time • Collaborate with the community to identify funders and write grant proposals to obtain sufficient funding for the project	• New York City participatory budgeting (New York City Council) • Detroit Climate Action Collaborative
CO-CREATE APPROPRIATE ENGAGEMENT AND COLLABORATION TECHNIQUES TO BE USED AT DIFFERENT PHASES OF THE PLANNING PROCESS		
• Ensure outreach and communication reach intended audience • Use culturally appropriate methods and materials in relevant languages • Ensure meetings are convenient and accessible • Identify potential stakeholder involvement • Ensure that community members feel welcomed, included, and heard during meetings and other community engagement opportunities	• Conduct power analysis and circles of involvement exercises to determine potential stakeholder involvement • Contract with and seek volunteer support from local community groups and/or trusted community leaders to communicate the plan and lead outreach efforts • Employ a "no wrong door" strategy at all community events and interactions with the community[40] • Co-lead resiliency meetings and forums with community-based organizations, community leaders, or other trusted individuals • Establish community advisory committees to be an intermediary between the community and local government • Provide resources at community meetings, such as childcare and food, and host meetings at convenient times and locations	• Circles of involvement exercise (National Association of County & City Health Officials) • Power analysis exercise (Alternatives for Community & Environment) • A Story of Resilience: What Will the Future Hold for Little Marcel (Resilient NOLA) • City of Portland Equity Work Group

PROCESS STEPS	SPECIFIC ACTIVITIES	RESOURCES AND PRACTICE EXAMPLES
DEVELOP NON-TRADITIONAL ENGAGEMENT TECHNIQUES TO INVOLVE GROUPS NOT TYPICALLY INCLUDED IN PLANNING		
• Find ways to reach out to groups and individuals who do not typically participate in planning processes • Incorporate innovative techniques for engagement	• Engage youth and/or older adults in climate preparedness planning to support leadership development and for their unique perspectives • Employ a train-the-trainer model that augments existing community expertise • Work with community leaders and community groups to conduct outreach and communication • Use arts, music, and storytelling to engage people in conversations about climate risk and resilience and build social cohesion • Attend existing community meetings and events to increase outreach	• Wellington Resilient mural (Wellington Resilience Strategy) • Participatory Climate Communication Through Performance for Community Engagement (Climate CoLab) • Y-Plan Richmond, CA: 5 years of authentic youth engagement in city planning (Center for Cities & Schools)

DATA COLLECTION AND ANALYSIS

Data collection and analysis is an important phase in the planning process. Many opportunities exist to ensure that this step is driven by community priorities and reflects community knowledge. Data collection and analysis should ensure that the impacts of climate change are understood for different population groups and/or neighborhoods. Most importantly, this step consists of a shift in who are considered experts and what information is considered valuable to the planning process.

A mixed-methods approach may be utilized to capture both qualitative and quantitative data. Community residents and community-based organizations can provide lived, experiential expertise that provides context and a greater depth of understanding of social vulnerabilities and increased climate risks beyond what can be measured quantitatively. Methods such as community-based participatory research (CBPR)[41] [42] and photovoice[43] [44] provide alternative approaches that can enhance community engagement in data collection and analysis. This builds off community residents' knowledge and experiences. Moreover, a community-driven process ensures that residents and organizations can articulate their own priorities and assess their own strengths and gaps in capacity. Many processes and tactics can be used to establish a community-driven data collection and analysis phase, as shown in Table 3.

Photo Credit: City of Palm Springs, CA

Table 3: Steps, Activities, and Resources for Data Collection and Analysis

PROCESS STEPS	SPECIFIC ACTIVITIES	RESOURCES AND PRACTICE EXAMPLES
WORK WITH THE COMMUNITY TO UNDERSTAND HISTORIC HAZARDS AND COMMUNITY ASSETS		
• Establish a citizen science program to co-create knowledge related to natural hazards • Evaluate the historical causes of inequity in the community • Identify and map community assets and strengths	• Use participatory research techniques, such as community-based participatory research methods (CBPR) and photovoice, to capture community perspectives • Create an asset map to identify organizations, places, structures, or institutions that can support climate resilience or are vulnerable to climate change impacts • Map the extent of historic hazards using community knowledge, input, and photos	• Detroit Urban Research Center CBPR • Miami Science Barge (Philip and Patricia Frost Museum of Science) • Participatory Asset Mapping (Advancement Project and Healthy City) • East Palo Alto Map Your Future (Youth United for Community Action)
UNDERSTAND SPECIFIC EXPOSURES OF RESIDENTS, BUSINESSES, AND COMMUNITY ASSETS TO CLIMATE CHANGE		
• Understand existing conditions based on race, income, and other important demographic and socio-economic analysis	• Partner with local community-based organizations and individuals to ground-truth the exposures and community assets.	• Hidden Hazards: A Call to Action for Healthy, Livable Communities (Los Angeles Collaborative for Environmental Health and Justice) • Community Resilience Toolkit (Bay Localize)
IDENTIFY SOCIAL VULNERABILITIES, ADAPTIVE CAPACITY, AND DISPROPORTIONATE CLIMATE RISKS		
• Assess climate vulnerability by neighborhood and/or population group • Identify the underlying causes of greater climate risk • Share information with the community	• Partner with the community to examine vulnerability to climate risks • Popularize technical information about local climate impacts to make it more accessible to community residents • Map or analyze vulnerability in lower-income communities and communities of color • Assess post-disaster capacity of the local business community	• City of Seattle's Environmental Equity Assessment Pilot • City of Oakland's Community Resilience Fact Sheets • Mapping your Future: A Work Plan for Public Engagement & Equity in Climate Adaptation Planning in the San Francisco Bay Area (Bay Localize) • Social Vulnerability to Climate Change in California (California Energy Commission)

VISIONING AND ALTERNATIVES

The guiding principles and vision for the plan should be developed in concert between the community and local government and expanded to develop a vision that integrates goals related to equity and resilience. Alternatives should be developed and a preferred alternative planning scenario can be selected in partnership with the community. Methods can be developed to better understand the potential impacts of adaptation actions on equity, including identifying unintended consequences and assessing whether adaptation actions are likely to produce new inequities, or worsen, improve, or have no impact on existing ones. Many actions can be implemented during the visioning and alternatives phase to ensure a process is community-driven, as shown in Table 4.

Table 4: Steps, Activities, and Resources for Visioning and Alternatives

PROCESS STEPS	SPECIFIC ACTIVITIES	RESOURCES AND PRACTICE EXAMPLES
DEVELOP AN EQUITY FRAMEWORK, VISION, OR GUIDING PRINCIPLES		
• Develop an equity framework, vision, or guiding principles for the plan development	• Conduct visioning sessions with community members and groups • Translate the vision developed with the community into specific adaptation actions and an evaluation framework	• City of Seattle's Equity & Environment Agenda • Climate Action Through Equity (City of Portland and Multnomah County) • Creating a Community Vision (MRSC Local Government Success)
ASSESS THE POTENTIAL EQUITY IMPLICATIONS, OPPORTUNITIES, AND UNINTENDED CONSEQUENCES FOR ALL ALTERNATIVES		
• Ensure that alternatives do not create new inequities or worsen existing ones • Understand how alternatives will impact social equity	• Translate the vision developed with the community into indicators that can be used to monitor and evaluate implementation of actions • Engage with the community to evaluate policy or project alternatives based on the equity implications • Assess the equity implications for the preferred alternative	• Equity evaluation exercise (City of Portland)

PLAN DEVELOPMENT

The primary objectives and strategies identified in the plan should seek to enhance community resilience and improve the quality of life of all residents, while explicitly identifying and prioritizing the needs of frontline communities. Specific example strategies are identified in Chapter 4.

Methods for assessing the equity impacts developed in the Visioning and Alternatives phase are used here to evaluate specific preparedness and adaptation actions. Those actions that improve equity while also addressing climate vulnerabilities should be prioritized for inclusion in the plan. Several steps can be taken to develop the climate preparedness and adaptation plan in an equitable manner, as shown in Table 5.

One strategy for equitable plan development is the co-creation of policy solutions in partnership with frontline communities. The co-creation of policy solutions challenges notions of expertise and rejects the idea that it is the exclusive role of government and paid technical consultants to identify potentially viable solutions.[45] [46] An example of this occurred in the Greenpoint/Williamsburg neighborhood of Brooklyn, New York. Residents teamed with U.S. Environmental Protection Agency scientists to jointly develop novel methods for understanding neighborhood residents' cumulative exposures to multiple pollutants (i.e. air and water contaminants) and ways to address these increased risks.[47]

Photo Credit: City of Richmond, CA

Table 5: Steps, Activities, and Resources for Plan Development

PROCESS STEPS	SPECIFIC ACTIVITIES	RESOURCES AND PRACTICE EXAMPLES
IDENTIFY STRATEGIES THAT PRIORITIZE BENEFITS TO COMMUNITIES AT GREATEST RISK TO CLIMATE CHANGE OR THAT MITIGATE AN EXISTING INEQUITY		
• Prioritize strategies based on equity analysis • Identify potential community benefits (co-benefits) and costs associated with strategies under consideration, with an understanding of how community members value those respective benefits and costs	• Develop methods for assessing equity implications of potential preparedness actions • Work with the community to conduct equity assessment and evaluate actions	• City of Portland's 2015 Climate Action Plan • City of Seattle's Racial Equity Toolkit
DESIGN STRATEGIES TO ADDRESS THE CONTRIBUTING CAUSES OF DISPROPORTIONATE CLIMATE RISK		
• Identify potential equity considerations / concerns in the implementation of climate solutions and adjust the solution to address those considerations • Develop strategies to lessen the unintended consequences of climate action	• Scan strategies to ensure equity goals are not subordinate to climate goals • Assess potential strategies to understand whether they may be catalysts for unintended consequences, such as displacement • Include strategies that address the contributing causes of inequities, such as economic inclusion strategies for jobs, contracting, and procurement • Assess the institutional or structural barriers to an equitable implementation of the strategies	• City of Portland's Climate Action Plan equity scan • Washington DC's Water Works! Local hire initiative • Urban Displacement Project (UC Berkeley)

PLAN AND PROJECT IMPLEMENTATION

This phase focuses on plan implementation and identifying and prioritizing actions that ensure lower-income communities and communities of color benefit from new projects and programs. Specific adaptation solutions for different climate hazards are discussed in Chapter 4. Strategies should also be instituted to ensure that the community participates in the plan's implementation. For example, a strategy to weatherize older homes could include a training program and a local hire policy to ensure that economic benefits and job creation are prioritized for frontline communities. Local government agencies should also partner with trusted community service providers to implement actions. Several processes and tactics can be utilized to ensure that the plan and project implementation are focused on equitable outcomes, as shown in Table 6.

Table 6: Steps, Activities, and Resources for Plan and Project Implementation

PROCESS STEPS	SPECIFIC ACTIVITIES	RESOURCES AND PRACTICE EXAMPLES
IDENTIFY OPPORTUNITIES FOR COMMUNITY MEMBERS AT GREATEST CLIMATE RISK TO BENEFIT FROM IMPLEMENTATION ACTIONS		
• Design program implementation to prioritize distribution of benefits in neighborhoods with populations at the greatest risk to climate change and mitigate any unintended consequences	• Prioritize contracts with local organizations, firms, and people of color to implement climate projects and programs • Link education and training facilities with people of color to train them in future green jobs • Develop community-driven financing models or partnerships with local financial institutions • Identify trusted service providers to implement programs that increase community resilience	• City of Richmond's BUILD Academy • Solar Richmond • Evergreen Cooperative (City of Cleveland)
DEVELOP WAYS FOR COMMUNITY MEMBERS TO BE INVOLVED IN THE IMPLEMENTATION AND COMMUNICATION OF PROJECTS		
• Develop avenues for community members to become involved in the plan implementation process • Identify short-term actions that residents can take to build resiliency and adaptive capacity • Ensure frequent communication regarding updates on the planning process	• Implement a community advisory board to help guide plan and project implementation and communication of initiatives • Collaborate with community-based organizations and resident leaders to seek funding for project implementation	• City of Cleveland's Climate Ambassador Program

MONITORING AND REVIEW

In this phase, the plan's implementation is monitored and reviewed to ensure that the actions are enacted as planned and are producing the intended outcomes. A community advisory board can help to monitor the implementation of projects. Steps can also be taken to define and measure equity impacts using indicators and metrics. Data collected should be publicly accessible. Additionally, avenues for holding public agencies accountable for the implementation of actions and projects should be clearly defined. Strategies can be updated based on evaluation data and lessons learned and in concert with the community. Many steps can be taken to monitor and review the plan's implementation, as shown in Table 7.

Table 7: Steps, Activities, and Resources for Monitoring and Review

PROCESS STEPS	SPECIFIC ACTIVITIES	RESOURCES AND PRACTICE EXAMPLES
ENSURE THAT THE PLAN IS IMPLEMENTED AS DESIGNED AND THAT THERE ARE MECHANISMS IN PLACE TO MAINTAIN ACCOUNTABILITY		
• Explore opportunities for the community to play lead roles in the monitoring and review phase • Identify responsible departments, offices, agencies, or organizations for implementation of projects and actions • Ensure clear avenues for recourse and accountability of project implementation	• Institute a community advisory board to help monitor the implementation of projects • Identify mechanisms for holding agencies and departments accountable	• City of Seattle's Equity & Environment Agenda • Climate Action Through Equity (City of Portland and Multnomah County) • Creating a Community Vision (MRSC Local Government Success)
INSTITUTIONALIZE DATA AND INFORMATION SHARING BETWEEN LOCAL GOVERNMENT AND COMMUNITY		
• Use "open data" approaches to sharing climate, project implementation, and equity information with community members • Assess impact on equity	• Define and regularly measure a series of equity-related indicators • Develop an open data online platform to share data publicly	• Equity in Building Resilience in Adaptation Planning (NAACP) • Applying Social Determinants of Health Indicator Data for Advancing Health Equity (BARHII)
USE INFORMATION TO UPDATE STRATEGIES AND ACTIONS		
• Collaborate with the community to update strategies and program implementation based on lessons learned from monitoring	• Ensure that lessons learned and outcomes from review and monitoring of implementation are publicly available • Use data to inform plan updates and/or make any needed course corrections	

EQUITABLE CLIMATE RESILIENCE PLANNING SOLUTIONS

EQUITABLE CLIMATE RESILIENCE PLANNING SOLUTIONS

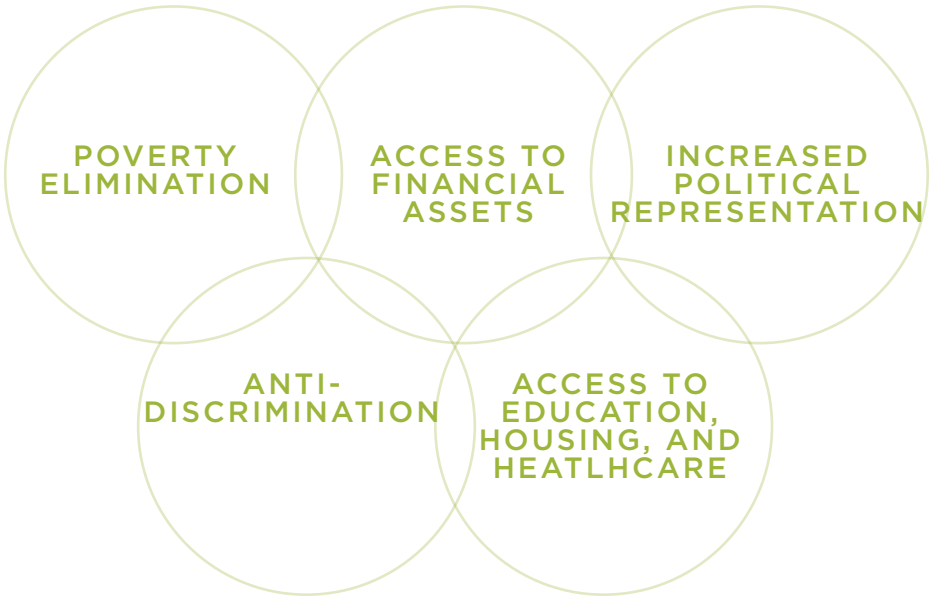
Local governments play an important role in developing public policy and implementing solutions that address community vulnerability and build climate resilience. Local jurisdictions routinely take steps to reduce people's exposure to natural hazards, ensure systems are in place to respond to emergencies, and improve assistance after a hazard event. However, these preparedness and response solutions are often not enough to address the social inequities described in Chapters 1 and 2. Equitable climate resilience necessitates consideration of the contributing causes of climate vulnerability to foster better resilience. Unequal access to education, employment, and health care services, lack of political representation, social isolation, and institutional discrimination aggravate the exposure and vulnerability of different population groups to climate hazards.

Addressing the contributing causes of social inequities enables the building of resilience to climate hazards. This requires a continuum of actions that:

- Provide actions to reduce hazard risk, e.g., early warning systems and cooling centers;
- Improve assistance after a climate hazard, e.g., creation of shelters and preparedness hubs;
- Help communities adapt to changing climate conditions, e.g., conserve and use water and energy more efficiently; and
- Focus on reducing social inequities related to poverty, discriminatory institutional practices, and political representation.

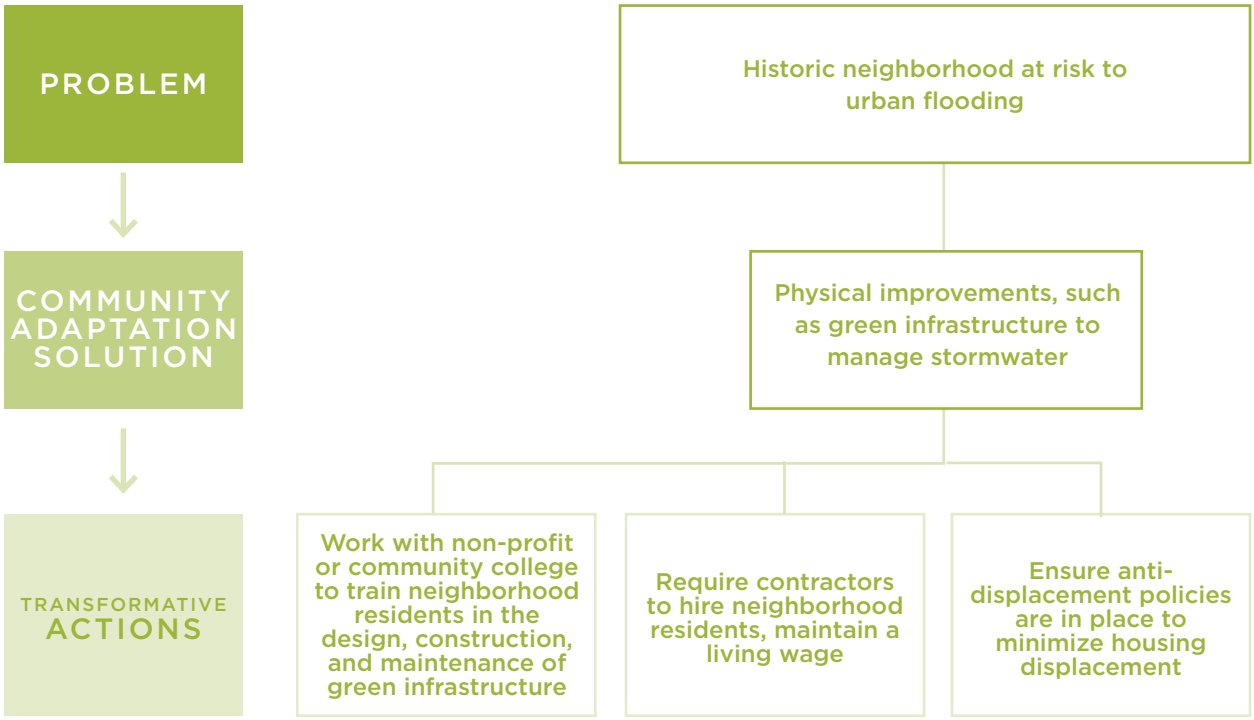
Climate planning traditionally focuses on preparedness, recovery, and adaptation. However, specific short-term measures that prepare communities and reduce hazard vulnerability will be more effective when coupled with long-term actions aimed at addressing institutional and structural inequities that are the sources of increased climate risk in frontline communities. Addressing social inequities further develops community resilience to climate change. Figure 7 illustrates a number of transformative actions that address many of the root causes of climate vulnerability.

Figure 7: Examples of Transformative Actions



Solutions designed to build community resilience through hazard preparedness and climate change adaptation, and by reducing social inequities should be pursued concurrently. These solutions often require inclusive, cross-sector, whole-government solutions to implement. For many climate planners, these policies may seem outside their purview or scope of work. Nonetheless, understanding these relationships and developing solutions with these transformative actions in mind can help produce co-benefits and address underlying root causes of inequity.

Figure 8: An Example of Community Adaptation Solutions and Transformative Actions



EQUITABLE SOLUTIONS

The Equitable, Community-Driven Climate Preparedness Planning Framework provides a structure to help define the solutions necessary to build community resilience. This chapter compiles typical adaptation strategies for different climate hazards, describes equity considerations for each, and defines specific planning solutions to address equity considerations. The section includes equitable climate resilience solutions categorized by climate hazard. This list does not include all possible climate hazards, but it does represent some of the most common hazards and impacts that many cities are addressing. These impacts include:

- EXTREME HEAT
- URBAN FLOODING AND COASTAL FLOODING
- WILDFIRES AND AIR QUALITY
- RISING UTILITY AND FOOD COSTS

Each climate hazard includes a brief introduction and a two-page vignette infographic depicting how climate change disproportionately impacts lower-income communities and communities of color, the contributing causes of disproportionate impacts, conventional strategies to address impacts, equity concerns, and solutions to address equity concerns. Table 8 illustrates typical adaptation strategies, equity considerations, equity solutions, and practice examples.

CLIMATE HAZARDS

Extreme heat events, coastal flooding, wildfires, poor air quality days, and utility and food costs are anticipated to increase in the future due to climate change. These hazards and impacts are likely to disproportionately affect lower-income communities and communities of color. This section provides a brief summary of these climate hazards and potential equity impacts.

ADAPTATION EQUITY PORTAL

The Equity Adaptation Portal, developed by the Georgetown Climate Center, organizes and showcases resources aimed at addressing climate adaptation using a social justice and equity lens. Resources also highlight case a number of case examples from cities.

EXTREME HEAT

Extreme heat days and heat waves are becoming more frequent, more intensive, and longer lasting than in the past. Extreme heat can directly impact human health, deaths, and illnesses, while also impacting communities indirectly through energy disruption, spikes in energy prices, and subsequent inability of lower-income populations to afford basic services. Certain populations such as older adults, young children and infants, pregnant women, and people with chronic illnesses are more susceptible to warmer temperatures and heat-related illnesses. For example, older adults may be at higher risk due to reduced ability to acclimatize to changing temperatures, diminished thirst response, and a higher likelihood of chronic health conditions.[48]

Lower-income communities and communities of color are also more susceptible to the effects of extreme heat due to existing social inequities. Lower-income areas and communities of color are more likely to live in urban areas lacking sufficient park space or tree canopy coverage[49] [50] and are, therefore, more prone to suffer from urban heat island effect, which increases the magnitude of extreme heat events. [51] [52] Additionally, lower-income populations may not be able to afford to purchase and/or operate air conditioning within their homes. Lower-income populations are also more likely to live in substandard housing that may provide little protection during heat emergencies and in neighborhoods where residents may not feel safe leaving their windows or doors open during the day or night. Undocumented immigrants and other marginalized populations may also not feel comfortable accessing cooling centers if they are not operated by trusted community partners. Linguistically-isolated households and older adults living alone may have fewer social interactions and connections that put them at greater danger from extreme heat events.[53] Altogether, stark social inequities highlight increased risks from heat waves.

Photo Credit: City of Richmond, CA

URBAN AND COASTAL FLOODING

Climate change can increase coastal flooding as sea level rises and affect the intensity, frequency, and duration of precipitation, such as heavier rainstorms. The potential impacts from flooding include injuries, drownings, and other flood-related health effects. In addition, stormwater runoff from periods of intense rainfall can impair water quality as pollutants from the land wash into water bodies.[54] Many low-lying flood-prone urban areas tend to correlate with lower-income areas. Lower-income households also have fewer resources to prepare for and recover from such disasters.[55] Additionally, lower-income families are also more likely to reside in substandard housing, which increases the risk of mold, mildew, and poor indoor air quality, which can occur from intense rain and flooding events.


Photo Credit: TRCA

WILDFIRE AND AIR QUALITY

Lower-income communities and communities of color often live in areas with higher concentrations of poor air quality.[56] [57] [58] Climate change can diminish air quality in a number of ways. Atmospheric warming has the potential to increase the concentration of certain types of pollutants that can impact human health, like ground-level ozone.[59] A warming climate and drier weather patterns can also increase the frequency of wildfires and the length of the fire season, which can have direct impacts on worsening regional air quality.[60] Rising temperatures are also expected to increase the concentration of aeroallergens, such as pollen, which can intensify the severity and prevalence of allergic and respiratory diseases.[61]


Photo Credit: City of Cleveland Photo Bureau

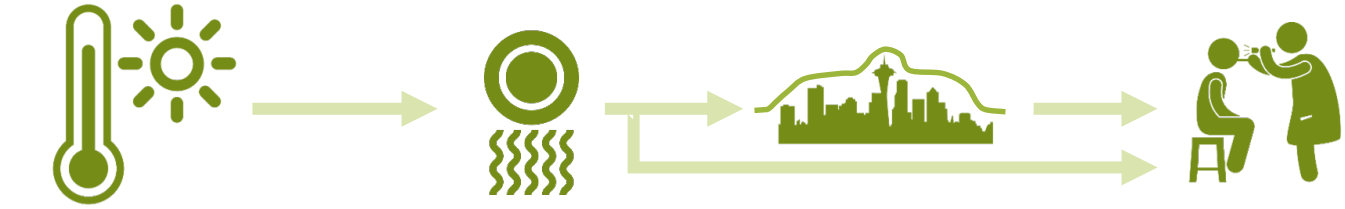
RISING UTILITY AND FOOD COSTS

The pricing of utilities and food is complex, but climate is one of many factors affecting the price of goods and basic services. Many power generation facilities are vulnerable to climate change, and the cost of supplying water to residential users is also expected to increase under climate change. For example, changes in the amount and frequency of precipitation may affect hydropower production.[62] Likewise, changes in weather patterns may impact growing conditions and yields for crops.[63] These impacts may raise the price of basic goods and services, increasing stress on lower-income communities. Lower-income households have less money to spend on these essential goods and services, and spend a greater proportion of their income on food and utilities.

Photo Credit: Darlene Beiter

EXTREME HEAT & EQUITY

Climate change affects everyone, but certain populations are at greater risk to climate impacts. Institutional and structural inequities, such as poverty and racial segregation, are the contributing causes of disproportionate climate risks. This vignette describes inequities in climate impacts from extreme heat and possible equitable climate resilience solutions.



Rising temperatures → More frequent heatwaves → Urban heat island → Illness

RISK FACTORS

- Lack of green spaces and tree cover and poor housing quality
- Lack of air conditioning
- Limited English proficiency
- Social isolation
- Older adults, children, and people in poor health or with chronic diseases

CONTRIBUTING CAUSES

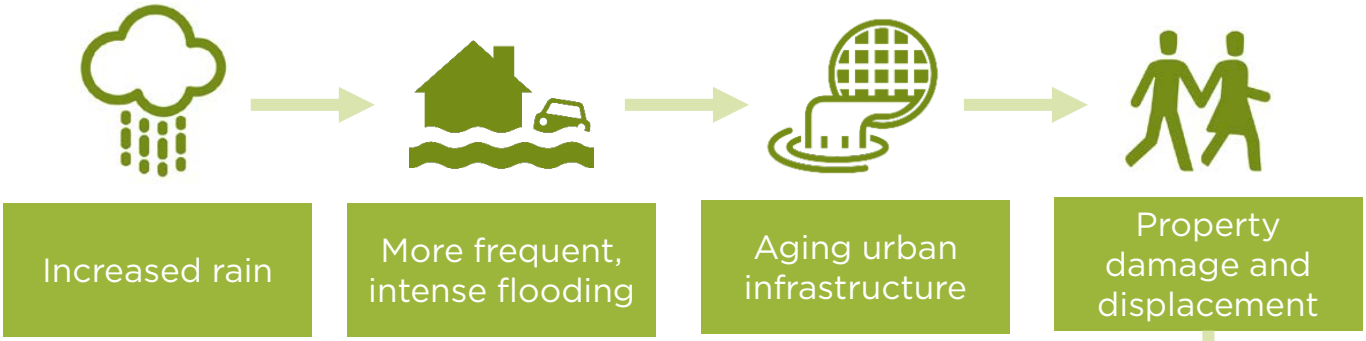
- Racial segregation
- Chronic poverty
- Lack of access to affordable health care
- Income and wealth inequality
- Gaps in educational opportunities and attainment
- Decreased social cohesion

EXAMPLE PREPAREDNESS STRATEGIES

	Early warning system for heat	Open cooling centers	Plant trees
EQUITY CONSIDERATIONS	• May be difficult to reach residents most vulnerable to climate hazards, such as individuals with limited English proficiency or older adults living alone	• Location and access to centers • Trusted places for residents to congregate	• Inequities in distribution of benefits • Gentrification and displacement due to increased property values
EQUITABLE CLIMATE RESILIENCE SOLUTIONS	• Provide warnings in multiple languages • Work with local community groups to disseminate warnings to residents most at risk • Develop an "adopt a neighbor" campaign	• Locate centers in neighborhoods with the residents most at risk • Select locations that are trusted places and are run by trusted service providers • Offer transportation assistance in specific neighborhoods or to residents with limited mobility or transportation access	• Prioritize neighborhoods with greatest need for green trees and green spaces • Institute rent control and just-cause eviction laws and other strategies to maintain housing affordability

URBAN & COASTAL FLOODING & EQUITY

Climate change affects everyone, but certain populations are at greater risk to climate impacts. Institutional and structural mechanisms, such as poverty and racial segregation, are the contributing causes of disproportionate climate risks. This vignette describes inequities in climate impacts from urban flooding and possible equitable climate resilience solutions.



RISK FACTORS

- Development in low lying flood prone areas
- Aging infrastructure or lack of infrastructure
- Lack of green spaces and vegetation
- Increased impermeable surfaces

CONTRIBUTING CAUSES

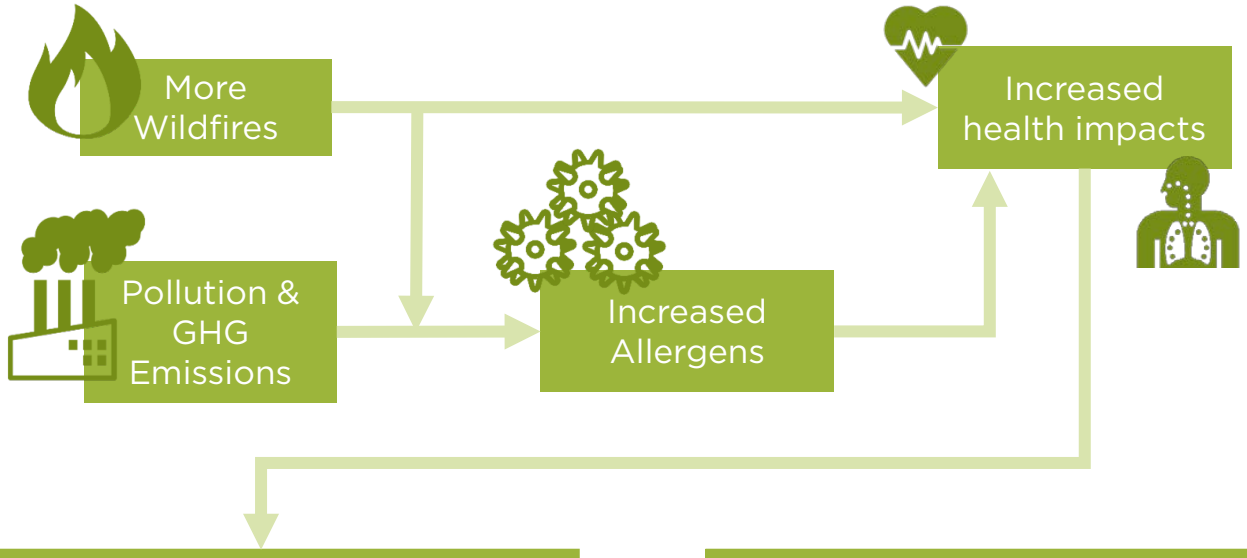
- Racial segregation
- Poverty
- Income and wealth inequality
- Decreased social cohesion

EXAMPLE PREPAREDNESS STRATEGIES

	Early warning system for flooding	Build green infrastructure	Limit development in flood prone areas
EQUITY CONSIDERATIONS	• May be difficult to reach residents most vulnerable to climate hazards, such as individuals with limited English proficiency or older adults living alone	• Inequities in distribution of benefits • Gentrification and displacement due to increased property values	• May reduce the availability of housing, which may impact the availability of affordable housing
EQUITABLE CLIMATE RESILIENCE SOLUTIONS	• Provide warnings in multiple languages • Work with local community groups to disseminate warnings to residents most at risk • Develop an "adopt a neighbor" campaign	• Prioritize neighborhoods with the greatest need for green infrastructure • Partner with community organizations to provide job training programs • Require local hire for green infrastructure • Institute rent control and just-cause eviction laws	• Ensure that affordable housing development projects are pursued in areas with low risk of flooding • Enact local hire benefits for new housing construction

WILDFIRE & AIR QUALITY & EQUITY

Climate change affects everyone, but certain populations are at greater risk to climate impacts. Institutional and structural mechanisms, such as poverty and racial segregation, are the contributing causes of disproportionate climate risks. This vignette describes inequities in climate impacts from wildfires and air quality possible equitable climate resilience solutions.



RISK FACTORS

- Existing medical conditions
- Infants and children
- Lower-income families and communities of color live in areas with higher air pollution
- Lack of green spaces and vegetation
- Outdoor workers

CONTRIBUTING CAUSES

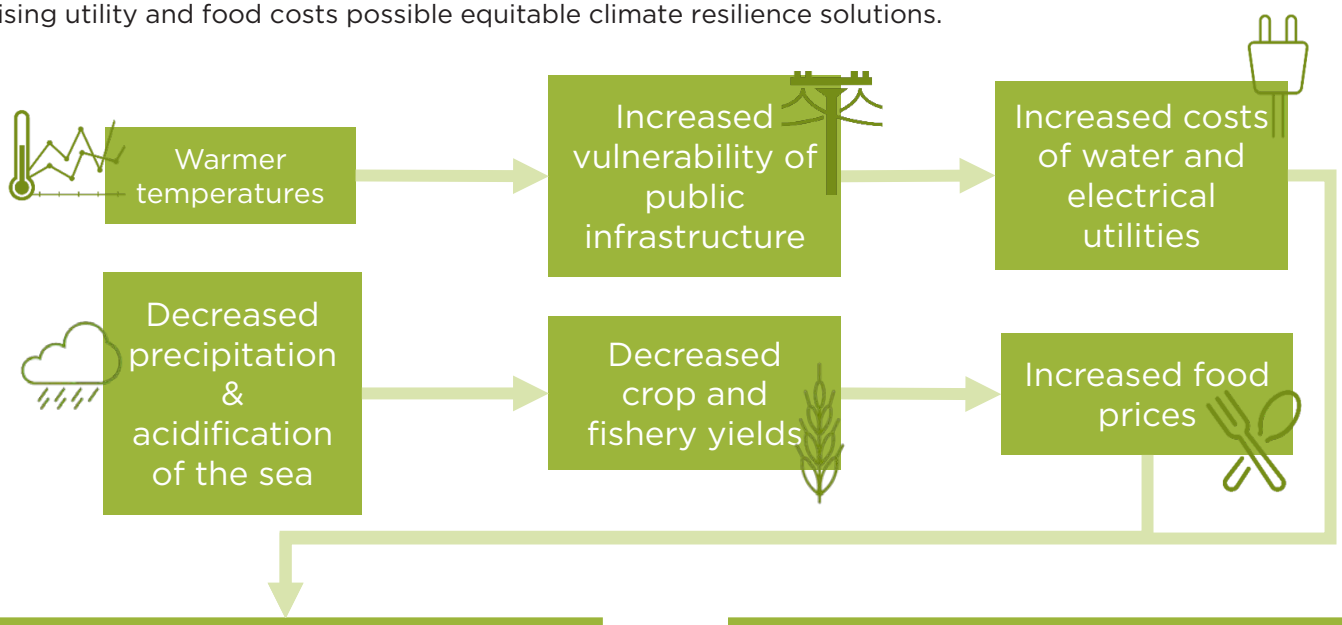
- Lack of healthcare insurance
- Racial segregation
- Environmental and social injustices: Pattern and history of land uses that concentrated pollution sources within lower-income communities of color
- Political disenfranchisement and exclusion
- Income and wealth inequality
- Decreased social cohesion

EXAMPLE PREPAREDNESS STRATEGIES

	Air quality alerts	Weatherize homes to reduce indoor pollution	Air conditioning can filter out air pollutants
EQUITY CONSIDERATIONS	• May be difficult to reach residents most vulnerable to climate hazards, such as individuals with limited English proficiency or older adults living alone	• Installation can be expensive for many lower-income residents • Renters usually do not have control over building decisions	• Air conditioning is expensive to install and maintain
EQUITABLE CLIMATE RESILIENCE SOLUTIONS	• Provide warnings in multiple languages • Work with local community groups to disseminate warnings to residents most at risk • Develop an "adopt a neighbor" campaign	• Support low-income weatherization/ energy efficiency programs • Expand job training opportunities of lower-income residents for weatherization installation projects • Develop tenant-landlord agreement to retrofit rental housing	• Support energy assistance programs for lower-income residents • Establish subsidy or rebate system to assist lower-income residents to purchase and install air conditioning

RISING UTILITY & FOOD COSTS & EQUITY

Climate change affects everyone, but certain populations are at greater risk to climate impacts. Institutional and structural mechanisms, such as poverty and racial segregation, are the contributing causes of disproportionate climate risks. This vignette describes inequities in climate impacts from rising utility and food costs possible equitable climate resilience solutions.



RISK FACTORS

- Lack of local food production
- Infants and children
- Food deserts

CONTRIBUTING CAUSES

- Poverty
- Income and wealth inequality
- Racial segregation

EXAMPLE PREPAREDNESS STRATEGIES

Promote water/ energy efficiency

EQUITY CONSIDERATIONS

- Installation may be cost prohibitive
- Renters usually do not have control over building decisions
- Inequities in distribution of benefits

EQUITABLE CLIMATE RESILIENCE SOLUTIONS

- Develop tenant-landlord agreement to retrofit rental housing
- Establish a program to assist lower-income households to install efficiency appliances and fixtures

Develop and support a local food system

EQUITY CONSIDERATIONS

- Healthier foods are generally more expensive and cost prohibitive for many lower-income residents

EQUITABLE CLIMATE RESILIENCE SOLUTIONS

- Establish the use of SNAP and WIC benefits at community farmers markets
- Reduce legal and zoning restrictions for local food production
- Allow for the repurposing of vacant properties for urban farms
- Expand job training in local food production and support living wages

Install grey water reuse systems

EQUITY CONSIDERATIONS

- Initial installation is cost prohibitive
- Renters usually do not have control over building decisions

EQUITABLE CLIMATE RESILIENCE SOLUTIONS

- Establish subsidy or rebate system to assist lower-income residents to purchase and install grey water reuse systems
- Develop tenant-landlord agreement to retrofit rental housing

EQUITABLE ADAPTATION SOLUTIONS

The following sections provide more concrete strategies and examples of how to include equity considerations in preparedness and adaptation strategies. Participation and engagement of the community is central to many of the equity strategies discussed. To the extent possible, this chapter also describes ways to address the contributing causes of social and racial inequities through climate preparedness and adaptation strategies. However, this document does not outline the universe of policies to address the underlying causes of inequity. Addressing the root causes of disproportionate climate risk in frontline communities will require a longer-term commitment to whole-government approaches and strategies to normalize and operationalize racial equity in local governments. These strategies were discussed in Chapters 2 and 3.

The following section highlights typical adaptation strategies, equity considerations, and equity solutions by climate hazards and is not intended to be prescriptive about strategies or solutions; rather, it aims to highlight opportunities to increase equity considerations in resilience planning. Ultimately, solutions should be co-defined and prioritized with community stakeholders and be responsive to local context.

Photo Credit: City of Seattle

Table 8: Equitable Adaptation Considerations and Strategies

CLIMATE HAZARD	TYPICAL ADAPTATION STRATEGY	EQUITY CONSIDERATIONS	EQUITABLE CLIMATE RESILIENCE PLANNING SOLUTIONS	EXAMPLES
 Extreme Heat, Urban and Coastal Flood, Wildfire and Air Quality	Develop climate preparedness planning and kits.	Lower-income communities and communities of color may be least prepared for the potential impacts of climate hazards. Resources should be prioritized for these population groups, provided in multiple languages, and designed to communicate effectively to all groups. Innovative outreach and communication should be utilized to reach socially isolated or hard-to-reach populations. Events could be hosted throughout the community to ensure information-sharing and outreach.	Work with community residents and groups to determine appropriate and culturally-relevant communication strategies to reach populations at greatest risk.	City of Baltimore Make a Kit, Build a Plan, Help Each Other
			Provide materials in multiple commonly spoken languages.	Oakland Community Climate Action Guide
			Establish neighborhood outreach program to disseminate information and kits to populations at greatest risk from climate hazards.	City of Boulder Mobile Resilience Lab
			Host community preparedness events, like PreparAthons, to help residents prepare for climate hazards and other disasters, focusing on identifying and addressing obstacles to lower-income communities and communities of color preparing for disasters.	City of Toronto Tower Renewal Program
			Build relationships with community-based organizations to improve trust and communication between local agencies and frontline communities, which may experience distrust of government authorities.	City of Seattle Equity & Environment Initiative Washington, DC Equity Advisory Committee
 Extreme Heat, Urban and Coastal Flood, Wildfire and Air Quality	Open resiliency hubs, cooling centers, and/ or emergency shelters	Centers may not be accessible to populations with limited mobility or located in neighborhoods at greatest risk of impacts from climate hazards. Residents at greatest risk may also lack access to reliable transportation to centers or shelters if they are not located close by. Centers may also not be located in trusted or safe locations or operated by trusted service providers, and therefore their utilization will be limited.	Work with community residents and groups to determine suitable locations for centers or shelters and best strategies for outreach. Select locations that are trusted places and are run by trusted service providers.	City of Baltimore Resiliency Hubs
			Locate centers in neighborhoods most likely impacted by climate hazards.	Empowered Communities Program's Neighborhood HUB (San Francisco)
			Provide free public transportation and transportation assistance to centers and shelters.	City of Baltimore Senior Transportation Assistance Program
			Create an online emergency preparedness hub.	SF72 (San Francisco)
			Establish neighborhood outreach program to disseminate information on locations of centers and shelters to and check in on populations at greatest risk from climate hazards, such as older adults that live alone or linguistically isolated households.	
			Train and pay young adults to serve as outreach workers. Workers can also help to coordinate transportation to centers if needed.	

CLIMATE HAZARD	TYPICAL ADAPTATION STRATEGY	EQUITY CONSIDERATIONS	EQUITABLE CLIMATE RESILIENCE PLANNING SOLUTIONS	EXAMPLES
 Extreme Heat, Urban and Coastal Flood, Wildfire and Air Quality	Develop early warning systems for climate hazards	A warning system that is not in multiple languages or is unable to reach populations at greatest risk of experiencing climate-related impacts can lead to increases in inequities. Warning systems must be designed to communicate effectively to all groups, especially populations particularly vulnerable to extreme heat, air pollution, and flooding.	Work with community residents and groups to determine appropriate and culturally-relevant communication strategies to reach populations at greatest risk.	
			Provide warnings in multiple common languages spoken.	
			Provide warnings through multiple culturally accessible media, such as culturally-relevant TV and radio stations. Also provide alerts via SMS, text, and TTY.	City of Cleveland CodeRED alert system
			Establish neighborhood outreach program to disseminate information to and check in on populations at greatest risk from climate hazards, such as older adults that live alone or linguistically isolated households. Train and pay young adults to serve as outreach workers.	
			Utilize a neighborhood emergency response teams to communicate with residents and respond to emergency events within their communities.	City of Berkeley Community Emergency Response Teams
			Provide outreach and information to outdoor workers, such as construction workers or gardeners, during extreme heat events and poor air quality days.	
 Extreme Heat, Wildfire and Air Quality, Rising Food and Energy Costs	Weatherize homes to keep them cooler, more energy efficient, and to improve indoor air quality.	Initial weatherization and installation of energy efficient appliance and fixtures can be expensive and cost prohibitive for many lower-income residents. Higher-efficiency homes and air filtration system can reduce exposures to ambient air pollution, but initial installation can be expensive and cost prohibitive for many lower-income residents. Renters also may not have control over building decisions.	Provide targeted outreach regarding the Weatherization Assistance Program for Low-Income Persons. Establish subsidy or rebate system to assist lower-income residents to afford installation of HEPA filters.	City of San Francisco PACE program
			Support weatherization/ energy efficiency programs and programs to assist residents to pay for electricity, such as subsidies or loan programs.	
			Establish a subsidy or rebate system to assist lower-income residents in purchasing and installing energy/ water efficiency appliances and fixtures.	City of Seattle Free Toilet Programs for Income-Qualified Customers
			Design model tenant - landlord agreements so that all parties can equitably share in the costs and benefits of efficiency programs.	Green Leasing Program

CLIMATE HAZARD	TYPICAL ADAPTATION STRATEGY	EQUITY CONSIDERATIONS	EQUITABLE CLIMATE RESILIENCE PLANNING SOLUTIONS	EXAMPLES
 Extreme Heat, Rising Food and Energy Costs	Ensure that utilities, such as water and electricity, are not shut off for nonpayment during an emergency, like an extreme heat event.	Lower-income residents unable to afford electricity or water are also the most vulnerable to extreme heat events. Targeted programs can ensure that essential and lifesaving utilities are not shut off during extreme heat events.	Support weatherization/ energy efficiency programs and programs to assist residents to pay for electricity.	Baltimore B'More Green Home Performance/ weatherization training
			Work with local community organizations/ groups on monitoring efficacy and implementation of program.	
			Expand job training of lower-income residents in jobs generated by home weatherization programs. Support living wage and benefits.	Exploring the Green Infrastructure Workforce (Jobs for the Future)
			Provide focused outreach to communities most likely to be impacted by climate change on how to apply for government assistance to help residents pay for the costs of cooling or weatherizing their homes	Low-Income Home Energy Assistance Program
 Extreme Heat, Wildfire and Air Quality	Promote air conditioning in homes and businesses during extreme heat events and poor air quality days.	Air conditioning is effective at cooling indoor spaces, but is expensive to install and use. Lower-income residents and families may not be able to afford to purchase and install air conditioning or the cost of electricity during extreme heat events. Populations, such as older adults and people with chronic diseases and disabilities, are at increased health risks from exposures to extreme heat and air pollution.	Work with community residents and groups to identify populations without air conditioning that are at greatest risk of climate-related impacts. Prioritize older adult residents or residents with preexisting medical conditions and disabilities.	
			Support weatherization/ energy efficiency programs and programs to assist residents to pay for electricity.	Washington, DC Weatherization Assistance Program
			Provide focused outreach to communities most likely impacted by climate change on how to apply for government assistance to help residents pay for the costs of cooling or weatherizing their homes.	Low-Income Home Energy Assistance Program
			Establish a subsidy or rebate system to assist lower-income residents in purchasing and installing air conditioning.	
 Extreme Heat	Ensure that businesses and workers are aware of and implement protections for outdoor workers.	Many outdoor workers (e.g., gardeners, landscapers, construction workers, etc.) may be more difficult to reach and may not know their rights as workers. In many cases, worker protections are often not extended to them, and many may be fearful of engaging with government, requesting assistance, or reporting violations when they occur.	Enforce existing worker protection laws, especially for workers at greatest risk of heat impacts.	Fair Work Center
			Work with worker-rights advocates and organizers to determine best methods of outreach and communication to outdoor workers.	
			Conduct culturally-relevant outreach to outdoor workers in multiple languages on their rights and ways to protect themselves from heat impacts.	
			Work with employers to ensure that they are aware of the rights of employees and appropriate protection measures.	City of Seattle Paid Sick and Safe Time Ordinance

CLIMATE HAZARD	TYPICAL ADAPTATION STRATEGY	EQUITY CONSIDERATIONS	EQUITABLE CLIMATE RESILIENCE PLANNING SOLUTIONS	EXAMPLES
 Extreme Heat and Urban and Coastal Flooding	Install green infrastructure, trees, and parks to promote infiltration of water, reduce stormwater runoff flooding, and cool urban environments.	Many park-poor, tree-poor neighborhoods, and areas prone to flooding within a city often correlate strongly with lower-income communities and communities of color. A strategy to increase green spaces, green infrastructure, and trees without a focus on identifying and prioritizing these areas for greening runs the risk of further exacerbating inequities. Additionally, any neighborhood improvements and investments can lead to or increase the rate of neighborhood gentrification and displacement of existing residents and businesses.	Work with community residents and groups to identify areas of greatest need for trees, green spaces, and/or green infrastructure.	Baltimore Growing Green Initiative and Adopt-a-Lot program
			Prioritize areas with the greatest need for tree planting and other greening or green infrastructure programs.	New York City Stormwater Management Through Placemaking
			Ensure local policies and ordinances protect affordable rentals and ability of existing residents to remain in their homes.	Neighborhood stabilization polices, such as just cause eviction ordinances and rent control City of Seattle's Housing Affordability and Livability
			Enact local hire benefits and local hire policies for green infrastructure implementation. Support living wages and benefits.	Washington, DC First Source Employment Program
			Train and pay youth and/or young adults to install green infrastructure and plant trees and other plants as part of workforce development jobs program.	City of San Francisco Green Trees Program
			Provide incentives for on-site capture of rain water on private properties.	City of Santa Monica Rain Barrel and Cistern Rebate Program
 Extreme Heat	Install cool pavement and cool or green roofs to help cool urban environments.	The location of urban heat islands strongly correlate with lower-income communities and communities of color. A strategy to increase cool pavement and/or cool roofs without a focus on identifying and prioritizing these areas at greatest risk for urban heat island effect may further exacerbate inequities. Installing cool roofs and pavement is expensive initially.	Work with community residents and groups to identify area of greatest risk of urban heat island effect and target resources in these areas.	Washington, DC Cool Roofs Program Harlem Heat Project
			Prioritize areas with the greatest need for installation of cool pavement.	Depave organization
			Establish a monitoring system to ensure that infrastructure, such as cool roofs, prioritizes lower-income areas and communities of color.	
			Establish a subsidy or loan program to incentivize and assist lower-income residents to install cool or green roofs.	

CLIMATE HAZARD	TYPICAL ADAPTATION STRATEGY	EQUITY CONSIDERATIONS	EQUITABLE CLIMATE RESILIENCE PLANNING SOLUTIONS	EXAMPLES
 Urban and Coastal Flooding, Wildfire and Air Quality	Limit or prohibit new development and redevelopment in flood prone areas.	Limiting or prohibiting new development in fire-prone and flood-prone areas may reduce the availability of new affordable housing. Furthermore, flood prone areas usually correlate with the locations of lower-income communities and communities of color. Limiting or prohibiting new development in these areas may reduce the availability of affordable housing. Employment opportunities from the construction of new housing projects can be focused to benefit populations at greatest risk of climate impacts.	Ensure that lower-income, mixed-income, and affordable housing development projects are pursued in areas at low risk of climate hazards.	
			Develop and require mitigations that address climate hazard risk in proposed developments within high-risk areas.	
			Enact local hire benefits for new housing construction projects from communities at greatest risk of climate impacts (lower-income communities and communities of color). Support living wage and benefits.	
 Urban and Coastal Flooding	Preserve or restore wetland areas.	Depending on the location of wetlands, restoring and preserving wetlands by limiting or prohibiting new development may reduce the availability of lower-income affordable housing. Employment opportunities from the construction of new housing projects and wetland preservation/ restoration can be focused to benefit populations at greatest risk of climate impacts.	Ensure that lower-income, mixed-income, and affordable housing development projects are pursued in other locations within the city.	
			Prioritize wetland areas within lower-income communities or communities of color for wetland preservation and restoration projects.	
			Enact local hire benefits for new housing construction projects from communities at greatest risk of climate impacts (lower-income communities and communities of color). Support living wage and benefits.	
			Develop and/or expand training and placement of lower-income residents and residents of color in jobs generated by wetland preservation and restoration programs.	
 Urban and Coastal Flooding	Raise structures above flood level.	Raising structures is cost-prohibitive and can also disrupt the interaction between building and streets, potentially limiting social interaction and social cohesion.	Conduct vulnerability assessment and work with community groups and residents to identify areas prone to flooding.	Washington, DC Climate Adaptation Planning – Vulnerability and Risk Assessment
			Prioritize lower-income housing and developments for programs to raise existing structures above flood level.	
			Establish a monitoring system to ensure that program is prioritizing lower-income areas and communities of color.	City of New Orleans PACE program

CLIMATE HAZARD	TYPICAL ADAPTATION STRATEGY	EQUITY CONSIDERATIONS	EQUITABLE CLIMATE RESILIENCE PLANNING SOLUTIONS	EXAMPLES
Urban and Coastal Flooding	Stormwater and sewer infrastructure improvements.	Initiatives may prioritize wealthier neighborhoods and inadvertently exacerbate inequities in climate impacts.	Conduct vulnerability assessment and work with community groups and residents to identify areas prone to flooding and in need of sewer and stormwater improvements.	RainReady Program (Center for Neighborhood Technology)
			Prioritize lower-income communities and communities of color at greatest risk of flooding impacts for stormwater and sewer infrastructure improvement projects.	
			Establish a monitoring system to ensure that improvements prioritize communities most likely to be impacted by climate change.	
Urban and Coastal Flooding	Build coastal protection measures, such as seawalls, levees, living shorelines, etc. where appropriate.	Initiatives to build coastal protection measures may prioritize wealthier neighborhoods and inadvertently exacerbate inequities in climate impacts.	Conduct vulnerability assessment and work with community groups and residents to identify areas prone to coastal flooding and in need of infrastructure improvements.	Washington, DC Climate Adaptation Planning – Vulnerability and Risk Assessment
			Prioritize communities most likely to be impacted by climate change for infrastructure projects.	
			Establish a monitoring system to ensure that improvements prioritize communities most likely to be impacted by climate change.	
Urban and Coastal Flooding Wildfire and Air Quality	Promote home insurance.	Home and flood insurance assists homeowners and renters to pay for repairs and/or relocate in the event of a flood or wildfire disaster. Home and flood insurance premiums are expensive and cost prohibitive for lower-income households. Repairs to homes and rental properties after a fire, storm, or flooding event be cost prohibitive, and households may be at risk of displacement if repairs are not completed.	Establish a program or a system to subsidize insurance for lower-income households to both renters and homeowners.	City of Cleveland Rain Barrel Program Washington, DC Rain Barrel Rebate Program
			Decrease the direct economic losses caused by disasters by providing financial assistance to help homeowners and rental pay for repairs and damages from fires, storms, or flooding events, with a focus on protecting lower-income populations.	
Rising Utility and Food Costs	Install water catchment and graywater reuse systems.	Reducing water demand would reduce water consumption and utility bills, and conserve water resources. Initial installation of water catchment and water reuse systems can be expensive and cost prohibitive for many lower-income residents.	Establish a subsidy or rebate system to assist lower-income residents in purchasing and installing water reuse systems.	
			Expand job training of lower-income residents in jobs generated by home installation programs. Support living wage and benefits.	

CLIMATE HAZARD	TYPICAL ADAPTATION STRATEGY	EQUITY CONSIDERATIONS	EQUITABLE CLIMATE RESILIENCE PLANNING SOLUTIONS	EXAMPLES
Rising Utility and Food Costs	Develop and support a local food system.	Growing food locally can help to reduce food costs and stimulate local economic development. These strategies also have climate mitigation co-benefits by reducing food miles and increasing green spaces. Supporting a local food system can also improve nutrition and access to healthy fruits and vegetables, and help to address limited availability of healthy foods in communities most likely impacted by climate change (i.e. food deserts). Healthier foods are more expensive and cost-prohibitive for many lower-income residents.	Support the creation of food hubs, which facilitate the aggregation, storage, processing, distribution, and/or marketing of locally or regionally produced food products.	Sustainable DC Plan (Action 3.2: Create a Local Food Hub for consolidation and distribution for local produce)
			Encourage the production of diverse culturally relevant crops in the region.	
			Support and encourage community gardens and urban farming by reducing legal and zoning barriers to the local growing and selling of food.	City of Cleveland Urban Agriculture Policies
			Establish the use of SNAP or WIC benefits at community farmers' markets.	Washington, DC Farmers Markets and the DC Farmers Market Collaborative
			Repurpose vacant and abandoned properties for urban farming and aquaponics production.	ReImagining Cleveland
			Expand job training of lower-income residents in jobs generated by local food production and agriculture. Support living wage and benefits.	City of Seattle $15 Minimum Wage Green City Growers (Cleveland, OH)
			Enable wholesale local food purchasing programs with government institutions, such as schools, hospitals, agencies, universities, etc.	
			Support policies and initiatives that increase the percentage of food needs sourced locally or regionally.	Washington, DC Healthy Schools Fund
Rising Utility and Food Costs	Support local clean energy production and increased local control over energy choices.	Local energy production can enable residents, particularly those communities most likely to be impacted by climate change, to develop renewable energy generation and energy efficient programs that can reduce energy costs and support local economic development.	Create an Energy Investment District (EID), which is a designated geographic area eligible for financing and other supports that enable residents to plan and implement community-scale, energy efficiency, and renewable energy projects.	Better Buildings: Clean Energy for Low Income Communities (US Department of Energy)
			Coordinate a bulk purchasing program to aggregate the buying power of multiple participants to negotiate the price of solar panels, energy efficiency upgrades, renewable energy, or hiring practices.	Cuyahoga County Solar Co-Op Program
			Establish a Community Choice Energy or Community Choice Aggregation program to purchase electricity from suppliers of renewable energy or produce their own.	Washington DC Energy Choice DC

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