

Visions of a Just City:
Exploring Pathways for Climate Justice in Boston

a thesis

submitted by

Christina Schlegel

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Abstract

What would it look like for the City of Boston to adopt a justice approach to its climate change planning and policymaking? In this thesis, I present a new theoretical framework for understanding and achieving urban climate justice that draws on the key principles of distributive and procedural justice and introduces two new principles: reparative and transformative justice. Informed by a review of the academic literature on climate justice, I evaluate the degree to which the City of Boston is implementing a justice-oriented approach to climate change and offer potential pathways to improve its approach based on an examination of four city case studies and the insights afforded by nearly fifty community-based interviews. Complicating factors such as the multiscalar nature of injustice, the importance of contextualizing action, and the effect of language on issue framing are discussed. In the concluding section, I present six essential “takeaways” that Boston can employ for instituting a climate justice approach: (1) tying actions to residents’ lived experiences; (2) building trust through data democratization; (3) making institutional changes to break down silos and move toward implementation; (4) acknowledging systemic and institutional injustice; (5) enhancing community capabilities through resource provision; and (6) democratizing and decentralizing power.

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Introduction

“The experience of American urban areas shows that inequality and social exclusion are not sustainable practices, because they undermine the viability of communities. Thus, communities may have programs that protect the natural environment, reduce energy use, and address other aspects of sustainability, but without programs to promote social equity, they are not strengthening their social foundation for long-term viability.”¹ - Svara, Watt and Takai, 2015

Climate change is not coming – it is here. In Boston, sea levels are rising three to four times faster than the global average due to slowing circulation of Atlantic Ocean waters.² An unusually large fluctuation in coastal sea levels during 2009 and 2010 caused a five-inch increase in sea levels north of New York City.³ August 2016 was simultaneously part of the driest summer and the hottest month ever recorded in the City of Boston – almost a fourth of the state was listed as experiencing extreme drought.⁴ The year 2018 continued the global warming trend as the fourth hottest year on record (with 2016 being the hottest, 2015 the second hottest, and 2017 now bumped to third).⁵ Some 61 inches of rain fell on Massachusetts in 2018, the rainiest year in the state’s recorded history.⁶ A late heatwave pushed June 2019 to be the hottest June yet recorded.⁷

The Trump Administration’s stance is one that questions, and even denies, climate science. Thankfully, many cities have already stepped into climate leadership roles to fill the void. Since 2007, the City of Boston has been committed to taking action on climate change. Yet climate change mitigation and adaptation are not actions that lend themselves easily to being siloed within a single Department. The unequal impacts of climate change are symptomatic of more embedded urban inequities. Cities across the U.S. have created Climate Adaptation Plans and are implementing resilient infrastructure and development practices, but still lagging is an explicit, embodied connection between climate action and the systemic drivers of existing community vulnerability.

Thesis Overview

What would it look like for the City of Boston to adopt a justice approach to its climate change planning and policymaking? To what degree does Boston currently integrate aspects of justice into climate planning, and what would the implications be for adopting a more intersectional and holistic climate justice approach at a city level? Climate justice is a set of principles used by activists and academics alike to help envision how we can create a more ecologically sustainable society while simultaneously addressing existing inequities. This frame is used to contextualize climate change actions within a larger agenda that seeks to advance social, racial, and environmental justice. However, the current academic literature does not adequately embody the holistic systems-level framing used by climate justice activists, nor does it make clear that climate justice is not only about repairing the harm done to communities but about fundamentally restructuring systems and processes to redistribute power more equitably. I propose a new climate justice framework in this thesis that aims to better capture these elements.

The new theoretical framework that I present in Chapter 3 of this thesis draws on the key principles of distributive and procedural justice. I will broaden this framework so that it also encompasses the root causes of injustice. The framework builds upon David Schlosberg's (2013) capabilities approach, Harriet Bulkeley et al.'s (2014) notion of justice as recognition, Ranganathan and Bratman's (2019) abolitionist climate justice perspective, and Malin et al.'s (2019) conception of restorative justice for humans and nature. I do so in order to flesh out a new way of seeing urban climate justice as concerned with equitable outcomes but also with fundamental transformation of systems-level drivers of injustice. It is a framework that acknowledges climate justice will require a redistribution of power and resources.

There has been increasing interest in the problems and promise of actualizing climate justice at various scales of governance (See Chapter 2). However, much of this literature is relatively new

and either theoretical or quantitative in nature. This thesis is in part a response to the lack of a qualitative literature on urban climate justice. In Chapter 3, I summarize the evolution of the climate justice movement and explore the current framings of climate justice present in academic literature. I review Boston's climate actions and plans from 2007 to 2019 and contextualize the state of urban climate justice by examining the existing justice-oriented framing and actions present in four other cities: Portland, Seattle, Boulder and Springfield (see Chapters 4-5).

The literature review and case study research inform my qualitative analysis of interview feedback from 47 interviews with many of Boston's community organizations, social justice activists, city staff, and experts detailed in Chapter 6. The interviews explore local manifestations of injustice and ideas for integrating a justice-oriented approach into climate action. Using grounded theory methodology, the interview data are organized into eight emergent themes. Four of the themes are linked to concepts present in the literature and city case studies: (1) concerns with an over-focus on the built environment; (2) influence of spatial scale on the solutions to urban problems; (3) importance of a holistic frame for action that is intersectional and relevant to the community; and (4) language's effect on the intention of policy and planning. The remaining themes summarize comments related to actualizing the four principles presented in my climate justice framework.

Analysis of the interview data indicates the critical importance of contextualizing climate action within a larger frame that ties in multiple justice concerns, the need for Boston to commit to better procedural justice, and the community's view of climate action as an opportunity to fundamentally address systemic and structural injustice through a fundamental shift in power and resources to the local level. The various data sources and analyses also highlight numerous concerns with the city's current approach to climate action. Such concerns include a lack of plan specificity and implementation, piecemeal access to climate information, little clarity on how existing plans are being used, and a need to broaden adaptation to mean social resilience in addition to resilience to the

built environment. The data analyses also illuminates six important actions to help Boston institutionalize a justice-driven approach: (1) tying climate actions to residents' lived experiences; (2) building public trust through data democratization; (3) making institutional changes to break down silos and move toward implementation; (4) adopting a frame that acknowledges systemic and institutional injustice; (5) enhancing community capabilities through resource provision; and (6) democratizing and decentralizing decision-making power. These are summarized in Chapter 7.

At present Boston is not adequately and proactively addressing the systemic and institutional drivers of vulnerability that will be exacerbated by climate change. Nor is it seen to sufficiently advance a larger social, racial and environmental justice agenda through its climate actions. Boston is not alone. The framing of climate action as an opportunity to advance multiple justice causes is a recent development in urban planning and policymaking. An explicitly justice-oriented approach to climate impacts at the scale of the city has until lately tended towards a cursory and incomplete concern with outcomes rather than a systems-level approach that also acknowledges the systemic, structural and institutional drivers of injustice deeply embedded within the city.

Climate justice is an expansive lens with far-reaching and systemic implications. As such, this thesis can only serve a snapshot of the larger and more sustained dialogue that must occur between government and its citizens. Chapter 7 lays out potential areas for future research on urban climate justice as well as the limitations of this thesis. Ultimately, this work is an exploration of how Boston – or any city – can address and disrupt patterns of systemic disadvantage by instituting a holistic climate justice approach to planning and policymaking. This thesis is intended as a resource for those engaged in grassroots justice struggles, research, planning and policy who wish to learn about potential avenues for realizing a justice-informed approach to urban climate action, see its promise as an opportunity to rectify patterns of marginalization, and wish to understand the challenges with its realization.

Chapter 1: Climate Change in Boston

An understanding of both the predicted climate impacts and the preexisting social, political, economic and environmental vulnerabilities experienced by residents and communities in the city is foundational to a substantive climate justice analysis. Studying the historical and present vulnerabilities in tandem with the future predictions for climate change helps to illuminate the different ways communities will experience climate change, and the main risks and exposures to each community. This, in turn, promotes a better understanding of the inherently unequal levels of vulnerability and resilience of communities and individuals. It is this understanding that is critical to crafting appropriate actions for long-term ecological, social and economic sustainability of the city. For if we do not, we risk widening inequity towards a dualistic urban environment of protected green enclaves and climate-vulnerable areas of urban disinvestment and community disintegration.

I. Climate Predictions

“Because the costs of inaction are high, because Boston has ambitious goals, effective climate action requires the help of every Bostonian.”⁸

When it was founded in 1630, the City of Boston covered roughly half the landmass it does today. The city’s increase in size came from land infill and development along its coastlines and riverbanks over three centuries. Much of the new land was filled to just above current high tide levels.⁹ The cruel joke is that if sea levels continue to rise, Boston could revert to the size and shape it had in 1630. Back Bay would not exist and East Boston would be but a few tiny islands. And yet sea level rise is merely one manifestation of the many climate change-induced impacts that the city will experience. A recent report by the Boston Research Advisory Group groups future hazards into (1) sea-level rise and coastal flooding; (2) increases in powerful storms; (3) extreme precipitation events and stormwater flooding; and (4) intense summer heat.¹⁰ Each of these hazards will impact

neighborhoods at different timescales and to differing degrees.

When it comes to heat, the rate of average temperature increase in the city is accelerating, leading to a concerning growth in the number of extreme heat days. By 2050, summers in Boston are predicted to feel like Washington, D.C. does now. And by 2100, in summer the heat could rival that of Birmingham, Alabama.¹¹ Where Boston once had an average of 11 days of extreme heat in the 20th Century, by 2030 the city could have over a full month's worth. By 2070, the predictions are for three entire months over 90 degrees.¹² With heat waves come urban heat islands (densely built areas of the city where trees are sparse and cement and asphalt cover much of the land), absorbing significantly more heat than greener and less dense areas. These urban pockets are not only warmer during the day, but retain heat longer, meaning they are slower to cool at night as well. This is the urban heat island effect. In parts of neighboring Chelsea, roofs in the city's urban heat islands already rise up to 140 degrees Fahrenheit during a hot summer day.¹³

Extreme heat and urban heat islands create dangerous situations for those with preexisting medical conditions like asthma and heart disease, those without air conditioning, the young and the elderly because they are more sensitive to heat stress. By 2100, the number of heat-related deaths in Boston is estimated to increase nearly sevenfold to 20 per 100,000 relative to the past thirty years.¹⁴ A National Resources Defense Council report put the number much higher, predicting that by 2090, roughly 1,340 annual heat-related deaths are predicted for Boston if no mitigation or adaptation measures are taken.¹⁵ Heat waves also affect infrastructure: through the thermal expansion of roadways and railroads - causing speed reductions and other delays - as well as potential power failures at times when there is too much demand on the electrical system for air conditioning.¹⁶

Since 1991, Boston has experienced 21 extreme weather events that triggered either federal or state disaster declarations, not the least of these being the winter of 2014-2015.¹⁷ During three total shutdowns of the public transportation network (the MBTA) and through the lingering

problems thereafter, an estimated \$2 billion in economic activity was lost. Particularly impacted by the MBTA closures were hourly wage workers who lost their only method of commuting. School closures required parents to take off work or find childcare.¹⁸ Boston's low-lying, coastal infrastructure and neighborhoods are particularly vulnerable to extreme storms. Had Boston been hit by Hurricane Sandy, every coastal neighborhood would have been affected, and up to 6 percent of the city would have been inundated.¹⁹ Two Nor'easters in early 2018 - combined with astronomical high tides of around 15 feet - flooded areas of the Seaport District, East Boston, and Downtown. And stronger storms have brought an increase in precipitation. Since 1958, there has been a 70 percent increase in the amount of precipitation on Boston's rainiest days.²⁰

With increased rain comes increased stormwater flooding, and much like extreme storms, stormwater flooding will affect infrastructure and livelihoods citywide. Boston is already struggling with the effects of increased precipitation in areas particularly vulnerable to stormwater flooding. These include transportation corridors, drainage areas that are at capacity, and along parts of the coast where stormwater outfalls may not be able to empty properly because of storm surges and rising sea levels.²¹ The city's built environment is highly impervious, leaving stormwater with no place to dissipate. Inevitably this causes the stormwater infrastructure to be overwhelmed, leading to backflow, huge street puddles, streams on the road and even sewage being discharged into the nearest body of water from Combined Sewer Overflow systems. By 2050, as much as 7 percent of the city's land area may be exposed to 24-hour extreme precipitation events.²² Much of the city's critical transportation infrastructure is located in areas highly susceptible to stormwater flooding, including routes like Columbus Avenue, Tremont Street, Morrissey Boulevard, I-90 and 93, and the MBTA Red and Orange subway lines.²³ Severe flooding along these routes not only affects residents' and commuters' ability to travel and work, but many of these roads are currently designated evacuation routes for the city in times of emergency, leading to questions of their efficacy.

While sea level rise may feel like a distant problem to many residents, Boston has already experienced nine inches of sea level rise over the twentieth century. Going forward, the rate of rise is estimated to increase markedly, bringing as much as 1.5 feet of rise by 2050, 3 feet by 2070, and high end estimates of between 7 and 10 feet by the end of the century.²⁴ A 2013 study by the Organization for Economic Cooperation and Development, ranked Boston 8th on a list of global cities expected to suffer economic damages from coastal flooding to critical, low-lying infrastructure like Logan Airport, North and South Stations and six of Boston's existing emergency shelters from coastal flooding.²⁵ Coastal and riverine flooding over the next thirty years will be concentrated in the neighborhoods of Charlestown, Downtown, South Boston and East Boston – where a severe flood would affect over 2,000 commercial buildings, 16,000 homes and cause an estimated \$2.3 billion in damages.²⁶ Between 2050 and 2100, coastal and riverine flooding will expand into other neighborhoods, including Dorchester. Even so, these predictions cannot describe or truly quantify the personal and psychological toll such events would undoubtedly have.

II. Existing Vulnerabilities

To construct a more representative picture of community vulnerability and resilience it is essential to take into account the underlying inequities present across the City of Boston. These inequities have a veritable cornucopia of different manifestations: from a more traditional understanding of disadvantage to vulnerabilities tied to a lack of access to services and opportunities. Vulnerability should not be interpreted as a projection of an individual's or community's "victimhood" but a recognition of structural, institutional and social inequities faced by certain residents through systemic discrimination, exclusion and underrepresentation.²⁷

Concrete manifestations of these injustices can be seen in communities that lack access (for example, access to public transit options and fresh food), lack opportunity (for example, to local

green employment, weatherization and solar installation programs) and lack representation (in decision making processes and public outreach practices). The term “social vulnerability” combines these manifestations of vulnerability. Boston’s former Chief Resilience Officer, Dr. Atyia Martin, defined social vulnerability as, “the susceptibility of social groups to the impacts of hazards such as suffering disproportionate death, injury, loss, or disruption of livelihood; as well as their resiliency, or ability to adequately recover from the impacts.”²⁸

To understand the complexity of social vulnerability, a natural place to start is with environmental justice populations. Environmental justice (EJ) populations are communities that – due to discrimination and marginalization - have experienced a disproportionate share of environmental burdens throughout history, these include neighborhoods that were divided by the construction of interstate highways or those targeted for trash transfer stations, toxic waste sites, polluting industrial facilities, bus depots, and power plants. Many of these same communities also lack access to environmental assets, such as tree cover, parks and playgrounds, and access to the shore. In Massachusetts, EJ communities are narrowly defined as having one or more of the following characteristics: an annual median income that is equal or less than 65 percent of the state’s median income (\$62,072 in 2010 according to the U.S. Census), where 25 percent or more of the residents identify with a race other than white, or where 25 percent or more of the residents over age 14 speak less than fluent English.²⁹ The state has not yet officially updated these criteria to reflect changing demographics and income levels.³⁰

The 2010 Census showed that Boston was home to approximately 327,000 non-white residents (53 percent of the total population), 279,000 residents with Limited-English Proficiency (39 percent), and 176,000 residents with low to no-income (29 percent).³¹ However, multiple studies (including the city’s own Climate Ready Boston report) include other vulnerable populations such as children and the elderly, people with disabilities, immigrants, those with chronic or acute mental

illness, and the socially isolated.³² Many of these factors overlap, compounding the social, economic and environmental risk for those residents who have comparatively fewer resources to adapt to a changing climate. For example, East Boston is home not only to large proportions of older adults and children, but also non-white residents with low incomes and residents with disabilities.³³

The Metropolitan Area Planning Council's recent State of Equity report explains that while many indicators for inequity among youth achievement are closing (graduation rates, college attendance), health inequities between races have remained (such as the persistent, higher rates of asthma, diabetes and other health burdens among people of color). In fact, some key structural and institutional inequities are deepening, including wealth disparities and segregation along neighborhood and income lines.³⁴ Across the state, the unemployment rate for workers who are Black is almost 7 percent higher than for whites. Workforce participation for those with only a high school degree is 12 percent less than those with a Bachelor's.³⁵ A recent Boston Globe investigation found that the income and homeownership disparities between Massachusetts' white and Latino/a residents is higher than in any other state.³⁶ Even without the impacts of climate change, these disparities are already contributing to intergenerational inequity and social and racial injustice.

On both a macro and micro level, research shows climate change is correlated to greater economic inequality in a vicious, self-reinforcing loop. Nationally, climate changes are estimated to cost the United States approximately 1.2 percent of gross domestic product for every degree Celsius increase in average global temperature.³⁷ As the nation warms, the southernmost states are predicted to become less agriculturally productive and see increases in weather-related crime. The region is also expected to experience a decrease in labor output due to extreme heat, more powerful storms, and consume more energy. The damages expected are substantially greater in the poorest third of all the counties, leading to losses between 2 and 20 percent of county income by 2100.³⁸

At a more localized level, the fallout from extreme storms has already had a profound effect

on coastal cities. New Orleans' population has been reshaped to be smaller and whiter since Hurricane Katrina. New Orleans has seen an influx of young, majority-white professionals, in part leading to gentrification and housing pressures for the city's Black middle class. Of over 175,000 Black residents that fled the city during and after the storm, more than 75,000 have not returned as of 2015 - whereas the white resident population has reached pre-storm levels and the Latino/a population has increased.³⁹ Hurricane Sandy is another, far closer example. A third of all deaths related to the hurricane occurred in New York City, and most were residents of the poorest and most racially diverse boroughs.⁴⁰ Two weeks after the hurricane, 40,000 city residents – the majority of which lived in public housing – were still homeless. Reports emerged of elderly and disabled residents stuck in their apartment towers and vulnerable residents so in need of resources that resident assistance groups were forced to raid nearby stores for needed supplies and medicines.⁴¹

Additionally, social vulnerability is expressed through a lack of access to services, opportunities and representation. In her work on resilience in Boston, Dr. Martin's definition of socially vulnerable populations included 93 different characteristics, such as lack of nearby public transportation, open space, and health insurance (affecting access), being a single parent, being a renter, being unemployed, lacking legal immigration status (affecting opportunity and representation), living in a high crime area, living in areas with low voter turnout and political participation, and lacking technological savvy (limiting the ability to participate in decision-making).⁴² Arguably there are many other characteristics of social vulnerability, including lack of access to healthy food, being an hourly worker, living without air conditioning, and living near pre-existing environmental hazards or polluting facilities.

In order to move towards a fuller understanding of the cumulative impacts of such vulnerability characteristics, the city of Seattle created an Environmental Equity Assessment Pilot tool. The tool uses GIS mapping to view the distribution of current vulnerabilities and the future

impacts climate change would have in different neighborhoods of the city. Boston released a similar tool this past fall called the Climate Ready Boston Explorer, which allows for spatial layering of different manifestations of vulnerability, including social vulnerability. Seattle’s tool goes one step further to include spatial data for vulnerabilities, such as environmental hazards and toxic sites, along with data on community indicators and assets such as levels of employment, rates of homeownership, and access to parks and sidewalks. From this data, Seattle created a composite socioeconomic index, which helps to create, “a narrative about who benefits from and who is burdened by environmental and health impacts and outcomes in Seattle.”⁴³ Seattle’s tool is a public and accessible way to integrate past, present and future vulnerability into the same analysis, and an incredibly useful resource for creating just climate action.

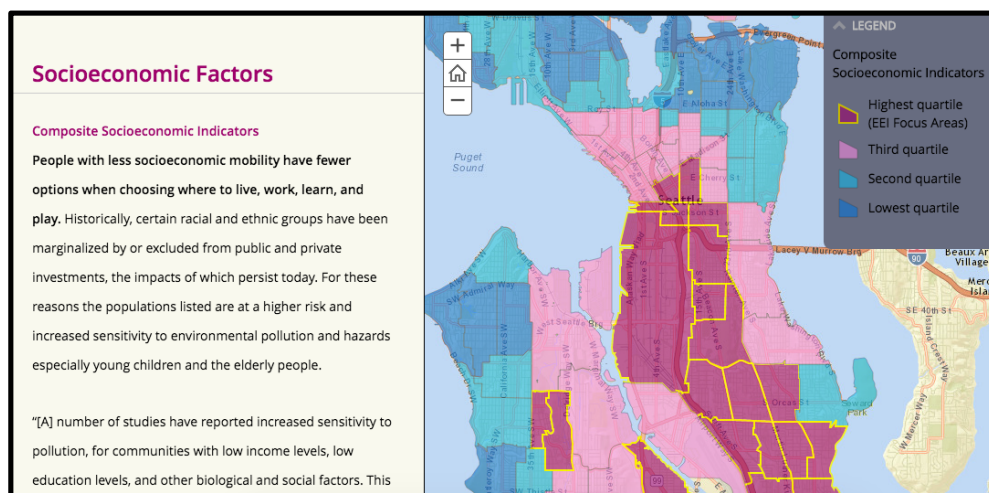


Figure 1: Screenshot from Seattle’s Environmental Equity Assessment Pilot. Source: <https://www.arcgis.com/apps/MapSeries/index.html?appid=4c14645fec154ae8978dc642c94b76ba>

Ultimately, every resident has some level of social vulnerability, but the level of vulnerability and intensity of risk is greatly compounded for particular communities and residents, precipitating much lower levels of resilience to both immediate environmental shocks and longer-term climate stresses. While identifying every potential vulnerability is impossible, having an expanded understanding of what constitutes social vulnerability is integral for cities to better align future

actions with community needs and desires for just outcomes.

It is important not to rely solely on metrics as there are real concerns embedded in the quantitative measurement of vulnerability. It is highly questionable that communities can be broken down into purely quantitative data, and furthermore, metrics can hide the institutional drivers of vulnerability, thereby making certain phenomena appear natural.⁴⁴ Metrics as indicators of progress should therefore be used as tools to enhance - not replace - community participation and leadership.

Chapter 2: The Need for Local Action

In many ways, cities are where the rubber meets the road. As laboratories for climate innovation, cities are increasingly important players in climate adaptation and mitigation not only for their own benefit, but also as a part of larger regional, national and international efforts for social prosperity within ecological limits. Across the globe, cities have experimented with policies such as carbon taxes, rebates, building code updates, public-private partnerships, green innovation incubators, and streamlined permitting for renewable energy projects.⁴⁵ The city of Miami Beach in Florida, where the rate of sea level rise has tripled in the past ten years, has undertaken large-scale road elevation and stormwater infrastructure projects to minimize and manage the effects of increased flooding.⁴⁶ Chula Vista, California, implemented a cool roofs ordinance and shade trees policy to reduce both the urban heat island effect and the city's sensitivity to extreme heat events.⁴⁷ Until the proposals were deemed economically inadvisable, various options for a vast sea wall across Boston Harbor were explored as a way to keep out the rising sea and storm surges.⁴⁸

Cities across the United States are realizing their responsibility to act locally to address the global problem of climate change. Some, like Boston, have signed on to the Paris Agreement and have crafted local Climate Action Plans. It is becoming increasingly clear that reaching international and national goals depends heavily on the initiative of local stakeholders.⁴⁹ And as the level of government closest to the people, cities are in a unique position to be the government most receptive and responsive to the needs of constituents.⁵⁰ Urban communities are already being negatively affected by higher seas, more frequent stormwater flooding, expanded summer heat waves, fiercer storms, stronger hurricanes, and bursts of intense precipitation which overwhelms municipal infrastructure. Many municipalities and local governments do not have the luxury of time to delay taking action so many cities stepped into this leadership vacuum. However local action does not exist in a vacuum. Responses to climate change are necessarily intersectional and multi-level: a reflection of the complexity of the problem.

I. Local Action in Context

In the 1990s and early 2000s, justice in academic and policy arenas often referred to distributive justice at the national and international level. Specifically, how the rights to adaptation and mitigation benefits, the rights to emit greenhouse gases, and the responsibilities to take action to reduce emissions and engage in mitigation and adaptation planning and implementation were to be distributed.⁵¹ This plays out at the international level in deciding which countries are required to reduce their carbon emissions the most, and in debates over the “ecological debt” that industrialized Northern countries owe to developing Southern ones. Yet this form of justice scratches the surface of truly just climate action because distributive solutions do not actively incorporate remedies for preexisting social, racial, economic and environmental inequalities.

At the national level, the concept of environmental justice was institutionalized in the early 1990s after the Environmental Protection Agency (EPA) was charged with discriminatory enforcement of its environmental regulations. By 1992, the EPA had established an Office of Environmental Justice and a year later had formed the National Environmental Justice Advisory Council (NEJAC). NEJAC is made up of cross-sectional experts who advise the EPA and is charged with providing independent advice and recommendations to the EPA administrator.⁵² Not long after, President Clinton issued an Executive Order on Environmental Justice requiring all federal agencies to ensure that any program receiving federal dollars did not discriminate against communities based on their race, color or national origin. The Order also required that any future projects subject to environmental review would consider the impacts on low-income and minority communities, and mandated that federal agencies create an Environmental Justice Strategy to address the disproportionate impacts of their programs and policies on these communities.⁵³ Despite numerous attempts since 1992, the federal government has not passed an EJ Act.⁵⁴

More recent inclinations at the national level have been towards a dismantling of the EPA and silencing its already under-resourced Environmental Justice Office. In light of these political maneuverings against addressing the link between climate change and justice at the federal level, it is increasingly being made by grassroots justice organizations including Climate Justice Alliance, Indigenous Environmental Network, Sunrise Movement and others. In 2018, the Climate Justice Alliance called for a Green New Deal (a federal resolution on climate change, jobs, and inequity) that would center highly impacted communities in a just transition to a carbon-free economy.⁵⁵

At the state level, the Massachusetts Environmental Justice Advisory Committee (MEJAC) was created in 2000 using NEJAC as a model, and the state's first Environmental Justice Policy was released in 2002. The Policy was strengthened in part due to grassroots participation and media interest in a report titled, "Unequal Protection: Ecological Injustices in the Commonwealth of

Massachusetts,” which showed that Massachusetts had some of the worst environmental disparities in the nation between its communities.⁵⁶ The state’s EJ Policy is broadly intended to, “help ensure [low-income communities and communities of color receive] protection from environmental pollution as well as promote community involvement in planning and environmental decision-making to maintain and/or enhance the environmental quality of their neighborhoods.”

In addition to these environmental justice policy successes, state government has started to draw an explicit link between future climate change and justice for example by acknowledging that environmental justice communities are among “the most vulnerable to heat and storm impacts.”⁵⁷ And the state updated its EJ Policy in late 2017 to consider the impacts that climate change will have on traditionally-defined environmental justice communities. A bill to enshrine these rights was considered in early 2018 and will undoubtedly be reconsidered in the future.⁵⁸

II. The Need for Urban Climate Justice

As local governments plan for climate change, they must consciously consider the ways in which their climate change plans, policies and processes can unintentionally exacerbate existing environmental hazards as well as social, political, and economic inequalities in the city. At the governmental level this includes development and permitting processes, hiring practices, procurement policies, planning and municipal engagement strategies, internal communications, transit systems, and deciding what projects receive municipal funding to name but a few. Local governments therefore have an additional responsibility to ensure the *just* distribution of adaptation and mitigation resources and equitable access to decision-making processes that ultimately determine how to adapt to a changing climate. How the term *just* is understood and operationalized is critical to directing what actions to take, how, and for whom. These questions are profoundly important and how they are answered will ultimately affect the long-term prosperity and sustainability of a city.

Traditionally the term *just* was synonymous with *fair*, as in the fair distribution of resources and opportunities to participate in decision making. But what constituted *fair* was also defined by those who already held political and economic power. Since decisions were made in such an elite echo chamber, these *fair* plans and policies tended to perpetuate existing urban inequalities.⁵⁹ Planning and decision-making rested low on Arnstein's Ladder of Citizen's Participation⁶⁰, which measures the extent of the public's power to affect the end product through participation, hovering between nonparticipation and citizen engagement as tokenism. In order to step out of this self-perpetuating process, it is imperative to examine whether actions to address climate change, "serve to maintain the interests of an elite at the expense of a minority, and as such perpetuate patterns of inequality in the city, or whether they are instead able to shift the terms of debate, make space for alternatives, and address existing forms of inequality."⁶¹

Procedural justice means integrating concerns around the different outcomes that climate actions would have on various populations, and analyzing the processes by which those decisions are made to include or exclude these populations into any actions taken.⁶² When it comes to climate change, those populations most politically, economically and socially marginalized are often referred to as the "front lines," or the first to experience its negative effects. Taking cues from the environmental justice movement, procedural justice emphasizes the need for participation of the most vulnerable planning and policymaking processes - not just a privileged few. Ideally, procedural justice is focused on creating equity in the process, in breaking down engagement and empowerment barriers through partnerships and outreach.⁶³

Strategies for achieving procedural justice include: (1) building in extensive and representative public participation education and communication into all governmental processes; (2) ensuring communication is flowing both to the community from the city and vice versa; (3) challenging city staff to communicate outside their departmental silos; and (4) bringing greater

transparency to the functioning of government, its policies and practices.⁶⁴ But there are still significant concerns with how procedural justice is realized. Is it true prolonged engagement or is it merely “checking off the engagement box”? Particularly vulnerable communities suffer more without any substantive follow through since the most profound impacts of climate change will come after the end of an elected official’s term in office.⁶⁵

Further conceptualizations of climate justice are described in the academic literature, and these dimensions of climate justice can be roughly divided into two types according to their ultimate purpose. The first type, broadly defined here as *reparative justice*, embodies a corrective aim of returning communities to a state of well-being through various forms of compensation and the creation of new capabilities for individuals and communities so they are able to effectively meet their needs and exert their rights.

The second type seeks to broaden our understanding of climate justice to encapsulate a focus not just on aiding the vulnerable, but on fundamentally recognizing and altering the systems and institutions that have created and produced vulnerability in the first place. This conceptualization of climate justice demands addressing the root political, historical, economic and social causes of the climate crisis and that any action be transformative and emancipatory. This dimension of climate justice, referred to in this thesis as *transformative justice*, demands recognizing how the unequal impacts of climate change (and potential for unequal distribution of climate adaptation and mitigation benefits) are tied to the political, social and economic processes that created both historic and current inequalities and embodies an explicit aim of transforming these systems by giving the community greater power and control over decision-making and implementation. At the scale of the city, transformative justice requires what Bulkeley et al. (2014) referred to as, “engaging the principle of recognition,” by analyzing the ways in which urban systems operate to produce uneven development, unequal access to amenities (like transportation and parks),

unequal exposure to environmental hazards, and have helped to exacerbate urban inequality and vulnerability.⁶⁶ Recognition means daylighting problems such as Boston’s history of institutional and structural racism, displacement, environmental injustice, and the long-term political and developmental disinvestment felt in various neighborhoods. It is only by understanding how injustice has been produced time and again that we can begin to alter, dismantle, or do away with the processes and drivers of compounding disadvantage.

To illustrate, Figure 2 shows a “Residential Security Map” of redlined neighborhoods of Boston created for the Federal Housing Administration (FHA) in 1936. This map outlines which neighborhoods were considered desirable areas for loan applicants to receive housing mortgages from the FHA (dark green and blue areas), and which were not (yellow and red). Figures 3 (2010) and 4 (2012) show how the clustering of Boston’s residents by race, ethnicity and income today still bears some resemblance to the redlined map from 1936. While sobering, transformative justice is fundamentally important in being able to address the root causes of urban injustice that can or will be exacerbated by climate change. In fact, recognition of these root causes and processes is necessary to achieve both true procedural and distributive justice,⁶⁷ because it places both into a larger historical narrative that explains why we have urban inequality in the first place. This leaves cities with a choice: action can either entrench or challenge existing inequalities and injustices.

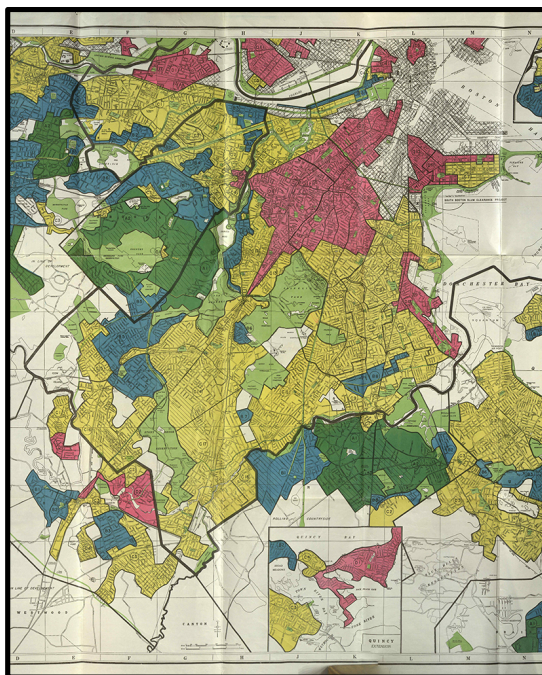


Figure 2: Sections from an FHA Residential Security Map from 1936. Image from Fair Housing Center. Source: <https://www.bostonfairhousing.org/timeline/1934-FHA.html>.

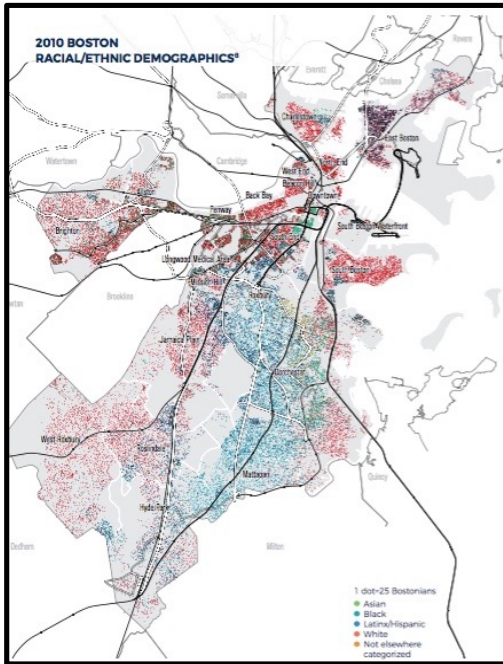


Figure 3: Boston's Racial and Ethnic Demographics, 2010. Image from Boston's Resilience Strategy. Source: https://www.boston.gov/sites/default/files/document-file-07-2017/resilient_boston.pdf.

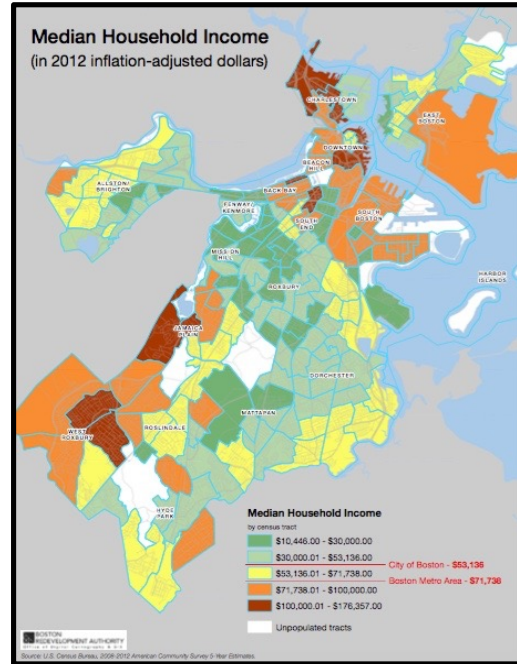


Figure 4: Boston Resident's Inflation-Adjusted Income in 2012. Image from BPD.A. Source: <http://www.bostonplans.org/3d-data-maps/gis-maps/census-and-demographic-maps>.

Urban climate justice demands an acknowledgement that climate adaptation and mitigation at the scale of the city are complicated by preexisting social vulnerabilities. Exposure to risk and resiliency to sudden shocks and longer-term stresses are unevenly distributed across the city. Climate change can destroy resident's physical assets by damaging their home, land, vehicles and other property. If residents do not have flood insurance or have no transportation after a disaster, it can cause financial insecurity. Climate stressors negatively affect public health and potentially cause exposure to diseases such as mold growth. Furthermore, climate stressors can also decrease social capital by disrupting vital social networks.⁶⁸ More privileged communities will have greater resilience due to their economic and political resources.

This causes a double inequity. Vulnerable communities will have both preexisting inequalities to overcome and will be faced with climate shocks and stresses to which they will be less resilient

than their wealthier and more represented counterparts. Realizing this, some cities eschew more traditional approaches to climate change planning that are technocratic and apolitical, for example, those focusing resources primarily on emissions mitigation. Instead, these cities favor approaches that explicitly seek to close these gaps of past and present social, racial and environmental injustices.

In essence, distributive justice asks, “for whom are actions taken”? Procedural justice asks, “how and by whom are actions chosen, implemented and evaluated”? Reparative justice asks, “how are actions corrective or compensatory?” And transformative justice asks, “how do these actions address the root causes of injustice and undermine cycles of disadvantage?” If done conscientiously, climate action will go beyond being merely an environmental benefit for the privileged at the expense of the rest of the city. Climate action then becomes not only a proactive way to prepare for and mitigate future climate impacts but represents an opportunity to address systemic and institutional inequalities and build a more equitable city.

Chapter 3: The Evolution of Climate Justice

Because the impacts of climate change are likely to affect those most disadvantaged first and most intensely, some refer to climate change as an, “instigator of corrosive disadvantage,” creating and reinforcing patterns of existing vulnerability.⁶⁹ The broad goal of the climate justice movement is to disrupt the patterns of disadvantage by creating pathways for individual and community resilience that prioritize the most vulnerable while recognizing and dismantling systems of injustice. The role of government then is to look for procedural and policy pathways that embody this system-level understanding and fundamentally transform how decisions are made and policies are implemented.

In this Chapter, I explore different conceptualizations of climate justice and what advancing

equity at the local level has meant historically. Current academic literature does not adequately embody the holistic systems-level framing used by climate justice activists, nor does it make clear that climate justice is not only about repairing the harm done to communities but about fundamentally restructuring systems and processes to redistribute power more equitably. Guided by the climate justice movement's evolution and drawing on pertinent academic literature from fields including environmental sociology, urban planning, and political ecology, I present a new theoretical framework for understanding and actualizing climate justice. My framework aims to encompass a more holistic, systems-level approach and describe why fundamental shifts in power and resource allocation are necessary to achieve climate justice.

I. History of the Movement

The beginnings of what would come to be called the climate justice movement crystallized at the turn of the 20th century as a response to international governmental meetings. In the eyes of grassroots climate activists, these meetings disassociated the climate crisis from its root causes in longstanding and systemic political, social, economic and environmental injustices. In contrast, the climate justice movement demanded an approach that held corporations and the largest CO₂ emitting-countries accountable for their role in manufacturing global warming. The movement stressed giving support to impacted communities and the most vulnerable to environmental disasters and pushed towards a regenerative renewable economy instead of an extractive one.⁷⁰

In 2002, many justice-oriented organizations met in South Africa to create the Bali Principles of Climate Justice, meant to redefine climate change through the lenses of human rights and environmental justice.⁷¹ The Bali Principles emphasize that communities have a right to be free from the impacts of climate change and ecological destruction, acknowledge the need to reduce greenhouse gas emissions, and call for the creation of local, renewable energy systems. The Bali

Principles also stressed that solutions are needed which do not externalize environmental harms onto any community, emphasized youth education and empowerment, and demanded that climate policies be based on mutual respect.⁷²

Since the 2002 meeting in South Africa, there have been grassroots-led climate justice victories at the local level, including numerous successful campaigns against the building of new coal-fired power plants. In the United States, Hurricane Katrina in 2005 was a catalyst that led organizations and scholars to strengthen their understanding of the connection between the environmental justice framework and climate change. In Bullard and Wright's (2009) book examining the struggle to reclaim New Orleans after the hurricane, they map out how black and brown communities were already unprepared for Katrina given the state of preexisting injustices in infrastructure, segregation, public education, housing and living standards and how, after the storm, they received less information, less relief and discrimination.⁷³ In response to increasing climate catastrophes, local EJ organizations began adopting explicit climate justice orientations during this period. Among these groups was West Harlem Environmental Action Team (WEACT) in New York City. WEACT held a major conference on climate justice in 2009 where groups discussed green jobs, public health and the problems with carbon trading.⁷⁴

By the second decade of the century the momentum for a climate justice movement was palpable worldwide. The World People's Conference on Climate Change and the Rights of Mother Earth, which took place in 2010, was a reflection and outlet for frustration felt by justice groups with the lack of international action on climate change after COP15 in Copenhagen in 2009. The World People's Conference laid out and sought implementation of legal rights for species and ecological systems similar to the United Nation's existing set of human rights.⁷⁵

In 2012, a new U.S.- based Climate Justice Alliance formed to advocate for a nationwide "just transition," a campaign that would move the United States away from its fossil-fuel

dependence towards sustainable jobs, renewable energy, public transportation, waste reduction, and other goals.⁷⁶ Just transition as a term has its roots in trade union activism from the 1980s when increasing globalization began threatening the stability of union jobs.⁷⁷ Just transition as it is defined now is a mobilizing term for tying the transition away from fossil fuels to the need for well-paying union jobs in environmentally sustainable energy industries like solar, wind and geothermal. The Climate Justice Alliance and innumerable other grassroots and indigenous organizations made climate justice front and center at the People's Climate March in New York in 2014.⁷⁸ Climate justice as a unifying framework has entered mainstream environmental dialogues in a major way the past few years, spurred on in large part by grassroots organizations such as Sunrise Movement, 350.org, and Youth Climate Strike exerting political pressure and marshaling large-scale events. Locally, organizations like Greenroots in Chelsea and ARISE for Social Justice in Springfield have adopted an explicit climate justice lens to their work mitigating the effects of climate change on residents, countering existing environmental hazards, and creating vibrant communities.

II. A Review of Climate Justice Literature

Climate change is an issue with profound social justice consequences. Broadly speaking, there are three main manifestations of climate *in*justice: (1) the causes of climate change; (2) the impacts of climate change; and (3) the policies created in response to a warming world (Harlan et al. 2015, 127). A similar three-pronged frame for climate injustice echoes these manifestations and describes them as socioeconomic, international and intergenerational. Socioeconomic injustices are where economic systems and governments disproportionately harm marginalized populations within a given country (Bullard 1994; Lerner 2010). International injustices are where the burdens of climate change fall disproportionately on those countries least able to adapt, namely those in the Global South (Roberts and Parks 2007). Finally, intergenerational injustice is where the impacts of

climate change are displaced onto future generations that lack a current voice in policy making circles (Page 2006; Vanderheiden 2017).

Socioeconomic inequalities play a large role in the climate crisis. Marginalized countries and communities benefit the least from a fossil-fuel economy (Harlan et al. 2015, 127). Highly vulnerable populations suffer a form of climate injustice in that they are often unequipped to respond to climate change and are already burdened by existing socioeconomic, political and environmental inequities (Kasperson and Kasperson 2001, 2). For instance, water accessibility is becoming worse for almost fifty percent of the world's population that already lack adequate access to fresh water. Increased flooding and sea level rise in low-lying countries such as Bangladesh and island nations hits the poor the hardest (Kasperson and Kasperson 2001, 2). Class and race-based inequities are particularly profound in the United States. An analysis of natural disasters during the twentieth century found that among the greatest predictors of vulnerability were a person's race or ethnicity, gender and socioeconomic status (Mileti 1999).

There is also the potential for climate injustice in the development of adaptation and mitigation policies and plans that do not thoughtfully consider and address these existing vulnerabilities, therefore perpetuating their existence into the future. Climate justice (and injustice) is an emerging academic field of study that draws heavily on social and environmental justice research and the fields of sociology, urban planning, philosophy and law (Harlan et al. 2015, 135). Much of the literature on climate justice has adopted a broad understanding of the term justice grounded in distributional rights (Kelly 2001), the right to participate in decision-making processes (Schlosberg 2007), and an acknowledgement of the need for vulnerable populations to have the capabilities (resources and opportunities) to fully assert their voice in society (Sen 1993; Stiglitz, Sen and Fitoussi 2009; Schlosberg 2012).

Justice as it applies to climate adaptation and mitigation in the fields of planning and policy

was initially focused on the fair distribution of responsibilities and obligations when acting on a common resource problem (Bulkeley et al. 2013, 915). This is especially clear around each nation's "common but differentiated responsibilities" to address their greenhouse gas emissions. While this Rawlsian distributional framing provides some analysis of why the responsibilities of nations are different, the focus remains on the fair outcomes of action or the consequences of inaction for the globe as a whole and sees nations as the main actors. But nations are not homogeneous. Inequality exists within countries, and actors range from nations to private entities and from local governments to individuals. More recent scholarship has argued a downsizing of the scale at which justice should be explored to that of the individual (Harris and Symons 2010), or the scale of the city.

Until more recently, much of the academic research on climate justice lacked an explicit spatial analysis and construction (Fisher 2015). The politics of scale in climate justice research draws on a longstanding debate in geography which argues that scale is socially constructed, and that actions necessarily take place at the scale which actors see as the most effective and important to their cause (Fisher 2015, 75). Though climate change is felt globally, there are more immediate manifestations of climate injustice expressed at the local level through disasters such as flooding and drought, and food and water scarcity. This has led researchers to the conclusion that a single-scale analysis obfuscates the multiscale nature of climate justice and runs contrary to the spirit of climate justice research and advocacy. A flood may have local impacts, but state and national implications because the response involves federal flood insurance and state emergency management agencies. As an issue that encompasses multiple justice concerns, climate justice cuts across boundaries and actors – and therefore scales (Barrett 2013). A multiscale approach to climate justice research helps to illuminate the "accumulative" processes - from the individual level to the international level – that build upon and interact with each other and create the current manifestations of justice or injustice (Barrett 2013). In this sense, any one scale is limiting as it can highlight particular forms of inequality

while hiding others that are not expressed at that level. At what scale the task of responding is envisaged necessarily influences the framing of solutions in a similar way (McKendry 2016).

While climate justice scholarship has blossomed at the international scale, it remains relatively underdeveloped at the level of the city (Bulkeley et al. 2013; Bulkeley, Edwards, and Fuller 2014). Yet climate change and its impacts are inherently spatial (Shi et al. 2016). Adaptation and mitigation actions are increasingly taking place at the scale of the city. It is also argued by some scholars that it was urban institutions and assets that helped create urban injustice in the first place through the unequal distribution of assets such as land, housing and infrastructure (Soja 2010; Gould, Pellow and Schnaiberg, 2008).

Climate justice at the scale of the city typically draws from the fields of urban political ecology and environmental justice (Agyeman 2005; Swyngedouw and Heynen 2003; Schlosberg 2004). Originally the EJ movement was formed to address the unequal exposure of primarily low-income and minority individuals and communities to various types of environmental harms. From EJ scholarship grew conceptualizations of justice that stressed a distinction between distributive and procedural justice (Sze and London, 2008; Faber 2008). Scholars argued for the inclusion of procedural justice into the justice framework in order to explicitly include the voices of communities which have been historically marginalized, thereby addressing concerns about the need for equitable participation in climate change decision-making that logically has a profound effect on policy outcomes and who the outcomes benefit (Bulkeley et al. 2013, 915). Concerns have been raised about what procedural justice looks like in reality, as both existing processes for engagement and even newly formed ones can still be subject to the desires of interest groups and recreate uneven patterns of participation. There is still debate about what an ideal framework for just processes might be, who has the right to participate, and how that right is exercised (Bulkeley et al. 2013, 915).

Further dimensions of climate justice found in the academic literature include justice as recognition, restorative justice, compensatory justice, productive justice, abolitionist justice and the need for enhancing community capabilities. There is no overarching consensus in the literature on these additional terms and their definitions, however the concepts of “justice as recognition” and restorative justice appear to be most common. David Schlosberg’s (2013) trivalent theoretical framework of climate justice as encompassing issues of recognition, distribution and participation is widely employed. While grounded in Schlosberg’s useful framework, this thesis also draws on more recent scholarly work that lends itself to a broader understanding of climate justice. The additional dimensions I have divided into two typologies according to their ultimate purpose.

The first type, broadly defined here as *reparative justice* and encompassing the terms “compensatory justice”, “capabilities”, as well as aspects of “restorative justice” and “justice as recognition,” embodies a corrective aim of returning communities to a state of well-being. This is achieved through various forms of compensation and the creation of new capabilities for individuals and communities so they are able to effectively meet their needs and exert their rights. The term reparative justice used in this thesis draws on aspects of justice as recognition (Schlosberg 2013, Malin et al. 2019) and restorative justice (Schlosberg and Collins 2014, McCauley and Heffron 2018). Recognition as a principle comes from the EJ movement. It raises concerns with the lack of recognition for the struggles of communities of color and indigenous communities as well as the interconnection between a deteriorating environment and our daily lives (Schlosberg 2013).

Justice as recognition can also be seen as an extension of participatory justice. Malin et al. (2019) describe recognition justice as identifying “historical and structural patterns of privileging certain (white, Western, patriarchal) worldviews and cultural systems over others” and encouraging, in their place, the “acceptance and inclusion of diverse cultures and worldviews in environmental decision-making.”⁷⁹ Aspects of restorative justice also fall into this typology of reparative justice

where the literature uses restorative justice to refer to the rights and responsibilities of various actors. Schlosberg and Collins' (2014) work uses the term to refer to the transfer of resources from responsible groups to those individuals and communities most affected. McCauley and Heffron (2018) present restorative justice as the third dimension of justice scholarship that has its roots in trade union movements of the 1980s (demanding the restoration of lost jobs) and that intimately links environmental restoration with social processes of remediation.⁸⁰ In this way restorative justice overlaps with the term compensatory justice in the literature.

Compensatory justice seeks to compensate the victims of an event or past injustice for loss and damage. Page and Heyward (2017) describe compensatory justice as it relates to climate change as aiming to, "make victims of climactic disruptions whole again", particularly those in developing nations.⁸¹ Critically, the focus of a compensatory understanding of justice is that it is a victim-centered approach to neutralizing injustice focused on outcomes and seeks purely to restore a condition of well-being that existed before the harm occurred.⁸² It is not concerned with punishing groups responsible for creating or accelerating the climate crisis. Complementing compensatory justice is the notion of a capabilities approach based on Amartya Sen's work that requires people have the capabilities – defined as access to opportunities and resources – in order for justice to be fully actualized and to disrupt patterns of vulnerability (Schlosberg 2013; Walker and Day 2012).

All of these dimensions of climate justice (compensatory, capabilities, recognition and restorative), unified under the term *reparative justice* in this thesis, exemplify a rather reactive framing of climate justice that is ultimately incomplete because it does not preclude new methods and systems from reproducing patterns of marginalization.

The other conceptualization of justice present in the literature seeks to broaden our understanding of climate justice to encapsulate a focus not just on aiding the vulnerable, but on fundamentally recognizing and altering the systems and institutions that have created and produced

vulnerability in the first place. These tenets of climate justice demand addressing the root political, historical, economic and social causes of the climate crisis and that any action be transformative and emancipatory. These principles, unified in this thesis under the term *transformative justice* and encompassing “abolitionist climate justice”, “productive justice”, and some aspects of both “justice as recognition” and “restorative justice”, entail proactively addressing the political, social and economic structures, systems and processes that created both historic and current inequalities. It is only by understanding how injustice has been produced time and again that we can begin to reform or dismantle these processes, structures and systems that create compounding disadvantage.

At the scale of the city, transformative justice requires what Bulkeley et al. (2014) referred to as, “engaging the principle of recognition,” by analyzing the ways in which urban systems operate to produce uneven development, unequal access to amenities (like transportation and parks), unequal exposure to environmental hazards, and have helped to exacerbate urban inequality and vulnerability.⁸³ Transformative justice means daylighting problems such as Boston’s history of institutional and structural racism, displacement, environmental injustice, and the long-term political and developmental disinvestment felt in various neighborhoods. Fundamental to “engaging the principle of recognition” is understanding that vulnerability does not just “happen” to a city and its people, but that cities are also actively causing and exacerbating climate change and vulnerability. If climate action and planning are not done thoughtfully, they can unintentionally perpetuate or exacerbate existing urban injustices (Anguelovski et al. 2016). Certain aspects of justice as recognition echo a more activist approach by not only calling for a critical examination of the processes that create and maintain climate injustice, but in challenging these processes and exploring alternative pathways for just climate action (Bulkeley, Edwards, and Fuller 2014, 33).

Transformative justice also draws on aspects of restorative and abolitionist justice literature. Schlosberg (2013) and Malin et al. (2019) describe a tenet of restorative justice where historically

excluded groups and peoples (such as native communities) are seen and recognized as leaders and visionaries in our efforts to address the rift between humans and our natural environment caused by unjust practices of cooptation and industrialization.⁸⁴ This echoes a similar theme present in the abolitionist justice literature of Ranganathan and Bratman (2019). Drawing on black radical thought and feminist literature, Ranganathan and Bratman (2019) insist on an intersectional and multidimensional understanding of the struggle for climate justice, acknowledge that efforts to make change must be rooted for those impacted in an ethics of care and healing of their communities, and finally, necessitate a shift in our focus to the historical and multicausal production of harms, specifically those caused by colonialism, racism, and capitalism.⁸⁵ Abolitionist justice understands that climate justice is not just about climate change – it is fundamentally intersectional in nature and that seeking justice through climate actions is an opportunity to rehumanize marginalized groups and achieve freedom from various forms of oppression forced upon nature and communities.

Transformative justice in this way complements reparative justice and adds a necessary element to completing this thesis' climate justice framework. Whereas reparative justice centers the restoration of communities, transformative justice centers the necessity of addressing the root causes of injustice – going beyond a reactive approach to one that also seeks to prevent harm in the first place by reforming or dismantling the systems, structures and processes that have led to unequal outcomes. It attacks the fundamental processes that produce harms, described by Faber (2008) as productive justice. Employing the precautionary principle and pollution prevention strategies are examples of productive justice because they avoid disproportionate harms from being created in the first place. By encompassing tenets from productive and abolitionist justice, along with aspects of justice as recognition and restorative justice, a climate justice framework can be transformative.

III. Justice, Equity or Resilience

The terms justice, equity and resilience abound in the climate justice literature. These terms have also made their way into municipal climate action plans as cities become more aware that climate change is an “instigator of corrosive disadvantage.” Justice and equity are terms often used interchangeably in climate planning (Ikeme 2003). While these words are similar, they are not interchangeable. Resilience is the ability to bounce back or recover from sudden shocks (like hurricanes or snow emergencies) as well as longer term stresses (such as sea level rise) and can extend beyond environmental incidents. The term resilience is growing in popularity among scholars and practitioners, but it has also been criticized as being a concept that largely avoids the politically difficult questions around the redistribution of risks, resources and power.⁸⁶ “Resilience” is seen as a more universally palatable, but also politically neutral term⁸⁷ that does not explicitly call out past and present injustices, and can therefore lack the elements of reparative and transformative justice. Some scholars critique resilience thinking for normalizing climate and other threats while assuming a boundless capacity of affected communities to cope and seeing solutions as primarily market-based and infrastructure-focused (Ranganathan and Bratman 2019). If resilience focuses on an individual’s capacity to adapt, it displaces responsibility to become more resilient to the individual and sidesteps the critical roles of society and government. And it evades calling out the structural inequalities over which each individual does not have control, but by which they are affected.

The central aim of equity, however, is in achieving fair outcomes for all. The word has its origins in the courtroom where it was used to provide remedies for an otherwise unjust distribution of benefits or burdens.⁸⁸ And in environmental policy, equity has been described as the, “need to equalize access to environmental goods and services,” emphasizing a good outcome rather than the structure of the process leading to that outcome.⁸⁹ Equity is therefore concerned mainly with issues of distributive justice, and does not capture the other principles of climate justice, leaving it

incomplete. While less so than the term resilience, equity is also a politically neutral term as it can be seen to sidestep the root causes of existing injustices. It is, however, a much-used term in policy and planning documents. Surveys of local government’s sustainability programs and policies found that how equity is defined varies greatly, but that equity is best achieved through comprehensive approaches to address the needs of the most marginalized (Svara, Watt and Takai 2015).

In contrast, “justice” is a term that encompasses the distributive, procedural, reparative and transformative elements necessary for just climate action. It is also a term that comes more from the environmental movement than public policymaking. Whereas equity can sound aspirational and future-focused, justice embodies a demand for remedies and corrective action of past wrongs.⁹⁰

IV. Urban Climate Justice

It was in Cleveland in 1969 that the first meaningful equity-based approach to urban planning occurred in America, as Planning Director Norman Krumholz realized many of the city’s intractable challenges were based in persistent poverty and racial discrimination.⁹¹ Krumholz’s “equity planning” integrated these economic and racial concerns into planning efforts through a social equity framework, eventually securing federal funding for innovative programs and initiatives to tackle the city’s underlying problems through planning. But the integration of concepts like “equity” and “justice” into modern planning and policymaking has been incredibly uneven.

Urban planners and policymakers have more often adopted the term equity, or the concept of an “equity lens” through which future policy and planning decisions should be filtered. However, what the term equity means and the equity lenses themselves are rarely defined.⁹² Justice as a term is more frequently used in North America, given the history and advocacy of the environmental justice movement here. And the framework of justice is more often applied to climate actions and pilot projects undertaken by community-based organizations and nonprofits (and to a lesser degree even

the private sector) than it is used by local governments.⁹³ Perhaps this is because adopting the term justice would require governments to not only to recognize the misguided and at times malignant policies of the past, but also demand of them a holistic, affirmative and corrective approach to future decision-making only possible through substantial reforms. This is a tall and politically uncomfortable order for governments where issue areas like economic development, housing, and transportation are often siloed and where climate change itself may be seen as an “issue area,” as opposed to a cross-cutting phenomenon that touches on every aspect of urban life.

Though slow, there has been progress in bringing the frameworks of equity and justice into local climate action, particularly in the Southern hemisphere. A 2013 study of 100 cities found that of 600 different climate change projects, about 25 percent explicitly called out environmental justice as a concern.⁹⁴ Among those that did, cities often struggled with identifying who was most at risk and with achieving procedural justice in public participation.⁹⁵ While cities have stepped up in addressing climate change, the social and environmental justice contexts and implications of those actions have been less well articulated. Another 2013 study of different urban climate initiatives in the Northern and Southern hemispheres that did consider the justice implications of climate change, those in the North were more likely to view justice as distributive (or in terms of outcomes), whereas those in the South took a much broader understanding of the framework that included procedural justice. In terms of procedural justice, Northern initiatives in cities like Philadelphia and Toronto sought to inform “affected parties”; participation is boiled down to one-off consultations with the community,⁹⁶ which is the lowest level of tokenism on Arnstein’s Ladder.

Climate adaptation planning in the North has centered more on the built environment, where risk reduction refers more to building design and codes, dams and seawalls, land use policies, and capital investment policies. Social vulnerability in the North is tackled through relatively short-term solutions like emergency contact lists, cooling centers and providing information to the public

in multiple languages.⁹⁷ Actions are more technical, and put a greater onus on individuals to be responsible for their personal level of vulnerability, creating green enclaves where greater individual agency is possible at the exclusion of communities where it is not. Framing climate resilience this way can actually justify the continuation of exclusionary and unjust development and planning practices, but it also widens the underlying disparities in the city.⁹⁸ In contrast, climate actions in the South often promote and support community-based actions that put those populations most at risk in the driver's seat and thereby also tackle the systemic drivers of vulnerability.⁹⁹ In the South, climate adaptation is collectivist, and requires both community and government participation.

It is not possible to design our way out of the climate crisis using the approaches of the past. Climate change requires that cities consider more integrated planning and transformative actions. This can begin with a community-informed understanding and mapping of vulnerability, which gives a certain amount of control over risk prioritization back to the community.¹⁰⁰ Further, empowering communities to decide what actions should be deemed most important and to be engaged in the visioning of adaptation and mitigation policies creates the possibility for procedural and reparative justice. However, community participation, access to resources, and decision-making power must extend far beyond the planning stage and into both implementation and evaluation of action to ensure cycles of disadvantage are interrupted in a truly transformative way.

V. A New Climate Justice Framework

My approach in this thesis builds on the academic framing of climate justice proposed by David Schlosberg (2013) and Harriet Bulkeley et al. (2014). In addition to the foundational principles of distributive and procedural justice, this thesis proposes two additional principles that seek to capture other important aspects of justice that are described less cohesively in the academic literature: reparative and transformative justice. Reparative justice is a term used here to encompass

the literature on justice which seeks to restore vulnerable communities to a state of health and wellbeing through recognition as well as access to resources and opportunities. Transformative justice is used here to encompass the academic literature informed by grassroots justice movements that argue any solutions must address the root causes of injustice, or in other words, fundamentally reform or dismantle the mechanisms by which injustice continues to be produced in a way that redistributes resources and power to ensure full emancipation from an unjust cycle.

Framing urban responses to climate change using this four-dimensional structure of justice as this thesis does allows us to connect the underlying political, economic and social influences on and interactions with climate change resiliency of individuals and communities. By broadening our climate justice framework beyond Schlosberg's (2013) and Bulkeley' et al.'s (2014) useful frames, this thesis attempts to capture the truly intersectional nature of climate action while addressing the root causes of injustice and the responsibilities of actors at multiple scales. It is useful to imagine the four principles as nested since each subsequent principle affects and enhances the one before it.

Chapter 4: Realizing Urban Climate Justice

In envisioning the type of climate just solutions Boston could pursue, it is instructive to explore what other cities across America have already done. The cities explored below share some similarities with Boston: Seattle is a coastal city; Boulder and Portland have struggled with gentrification and affordability; and Springfield is racially diverse and has an engaged social justice activist community. The cities were chosen because each has approached the local impacts of climate change through an equity or justice framework, and has, to a greater or lesser degree, sought the input of residents to help inform this approach. Figure 5 summarizes plans and actions taken in the case study cities and indicates which aspects of the climate justice framework they embody.

Summary of Case Study City Actions & Plans			Principles			
City	Actions	Purpose	D	P	R	T
Seattle	Equity & Env. Initiative	City partnership with foundations, local orgs for social/racial justice		X	X	
	Community Steering Committee	16 community leaders working with city to co-lead environmental actions		X	X	
	Environmental Action Agenda	Goals: equity, economic pathways, foster networks, healthy environment	X	X	X	
	Equity Assessment Tool	Helps the public/policymakers visualize distribution of cumulative injustice	X	X		
	EJ Committee	Guidance on implementation of climate and equity plans	X	X	X	
	Race/Social Justice Workplans	Annual dept. plans describing city activities to increase equity	X		X	
	EJ Fund	Competitive foundation fund for community-led projects	X	X	X	
Portland	Framework for Advancing Equity	Citywide framework laying out policy and processes for advancing equity	X			
	Equity Scan	2013 Study conducted of climate plans to pinpoint areas to advance equity	X		X	
	Equity Working Group	Local organizations that created a climate equity implementation checklist	X	X	X	
	Climate Action Through Equity	Six lessons for advancing equity in climate planning from local organizations	X	X	X	
	2015 CAP	Equity-focused climate plan with five impact areas and specific goals	X	X	X	
	CAP Progress Report	Status update on CAP, list lead agency, timeframe and impacts		X	X	
Boulder	Just Transition Collaborative	Partnership of academics and organizations to promote social/env. justice		X	X	
	Just Transition Report	Recommended local leadership, energy cost sharing, economic opportunities	X	X	X	
	Boulder Climate Commitment	Just Transition frame, outlines equitable climate actions for 2017-2020	X	X	X	
	Boulder Measures	Online dashboard showing baseline climate indicators and city's progress	X	X		
	Climate Action Tax	Energy consumption tax which funds climate initiatives & energy efficiency	X		X	X
Springfield	Climate Justice Coalition	30+ EJ organizations and businesses campaigning for municipal action	X	X	X	X
	Resolution on Climate Change	2014 Resolution calling for a Climate Action Plan and coordinator		X		
	Endorsement of EJ Principles	City formally endorsed the Principles of Environmental Justice	X	X	X	X
	Strong, Healthy and Just Plan	Climate plan to increase community resilience and reduce emissions	X	X	X	
	Climate Justice Commitment	Coalition's commitment to ensuring the city's plan advances justice	X	X	X	
	Climate Action Chart	Online chart providing updates on climate action progress and funding	X	X		

Figure 5: Summary of major plans and initiatives undertaken in the four case study cities. The right-hand side of the table indicates which principles of a climate justice framework are expressed: distributive, participatory, reparatory, and transformative. Source: Christina Schlegel.

The implementation of these frameworks for climate planning is relatively recent, so little research exists examining their effectiveness in depth. However, interviews with experts in Portland and Springfield helped to illuminate what the lessons, benefits and challenges have been so far. While these cities share similarities to Boston, it is foolish to assume that the policies and strategies they have developed can easily be transplanted to Boston without an open dialogue to determine how the community would receive these actions. But they illustrate what is possible, and their leadership can inform Boston's approach.

I. Seattle, Washington: All Hands on Deck for Local Equity

A port city in the upper Northwest, Seattle is situated between the ocean and the mountains. The summers are mild and winters are cool and wet with the ocean having a mitigating effect on extreme temperature variations in the city. Nearly 70 percent of the city's approximately 713,000 residents are white and roughly one third are people of color. The second and third largest racial groups are Asians (14 percent) and African Americans (8 percent).¹⁰¹ There are deep disparities for nearly every major socioeconomic indicator in Seattle (education, income, unemployment, rent burden, homeownership, vehicle ownership) between African American, Latino/a residents and white residents.¹⁰² Some 13 out of 14 of Seattle's heavy polluters are within a half mile of communities of color,¹⁰³ and there are longstanding impacts of pollution in vulnerable communities along the Duwamish River.¹⁰⁴ The predicted climate impacts in Seattle are similar to those for Boston: sea level rise and increasingly high tides, higher average temperatures and more frequent extreme heat, wetter winters and more extreme precipitation events. Some neighborhoods are predicted to flood daily by 2100. In addition, warming will lead to snowpack reduction in the nearby mountains. Predictions are that by 2050, most of what is now winter snow will fall as rain.¹⁰⁵

The city is taking action. Seattle's previous mayor launched the Equity and Environment

Initiative (EEI) in early 2015. EEI is a partnership of city departments, area foundations, historically White-led environmental organizations, and community-based organizations. Its purpose is to “deepen Seattle's commitment to race and social justice in environmental work by creating an Environmental Action Agenda centered on equity.”¹⁰⁶ To lead the creation of this Agenda, the mayor appointed sixteen community leaders to a Community Partners Steering Committee. The Committee represented the interests of Seattle’s diverse and historically marginalized communities, in particular people of color, immigrants, refugees, Seattle’s youth, and residents with low incomes and limited-English proficiency.¹⁰⁷ The Committee and the city’s Office of Sustainability and Environment held workshops with historically white-led environmental organizations in the Seattle area to aid in building a broader racial justice focus among nongovernmental institutions. These workshops led environmental organizations to create supportive Ally Commitments.¹⁰⁸

In creating their Agenda, the City and the Committee heard from communities on the cumulative effects and interplay of multiple environmental hazards. Participants expressed a desire for the city to put more effort into building trust with communities and community organizations, and allowing the community to play a major leadership role in climate planning. In addition, community members sought increased economic opportunities for youth – particularly green jobs - and culturally appropriate ways to take their own environmental actions.

The Agenda lays out four overarching goals for the city: (1) build a healthy environment and address existing hazards and inequities; (2) create economic pathways for people of color and youth; (3) bring greater equity to city programs; and (4) foster a stronger network of environmental justice community leadership and community partnerships. The Agenda stipulates that any project with “significant environmental impacts” should be required to complete the city’s Racial Equity Toolkit.¹⁰⁹ The Toolkit is an assessment process and set of questions to evaluate the impacts of development, policy and budget choices.

Seattle's Agenda states that, "[t]argeted investments will likely be necessary to advance the goals and strategies of the Agenda ... to address disparities, mitigate impacts, and share benefits while minimizing displacement."¹¹⁰ To this end, Seattle developed an Environmental Equity Assessment Pilot tool that helps the public and policymakers evaluate and visualize cumulative impacts and how environmental impacts and benefits are currently distributed. Quantitative data used in the tool is augmented by community stories.

With hints at reparative and transformative justice, the Agenda soberly summarizes Seattle's new environmental justice frame:

*"To advance environmental justice requires going further than policy recommendations; we must fundamentally change the way policies are created and prioritize historically excluded communities to have power in leadership and decision-making ... Through conversations with our community, we developed broad goals to create a unified approach for advancing environmental justice across our city and our region. The associated strategies and actions are intentionally ambitious — building a true commitment to racial equity in our environmental movement is no small task."*¹¹¹

The Seattle Agenda outlines eight community-identified actions to help achieve the four overarching goals. In addition to the Environmental Equity Assessment Tool, it called for accelerated demographic and program implementation data collection, policy coordination between levels of government to prioritize vulnerable and historically marginalized populations, the creation of a municipal Environmental Justice Committee and Environmental Justice Policy, and greater career opportunities in the Seattle-area environmental movement and programs for leaders of color. The Agenda argues for the creation of more robust local partnerships and an environmental justice fund financed by the city and foundations and calls for ensuring that environmental action is practiced in a culturally-competent and multilingual manner. The Environmental Justice (EJ) Committee would ideally "increase community ownership of solutions by advising on new and

existing environmental programs/policies, providing guidance on the implementation of the Equity & Environment Agenda, and advancing environmental justice policies.”¹¹²

Seattle is making good on its promises. In 2016, the Mayor approved the creation of the EJ Committee and it is now in operation.¹¹³ Each year, city departments must publicize a tailored Race and Social Justice workplan which details how the next year’s operations will address racial and social equity along with specific dates for work completion. The city has also recently announced an Environmental Justice Fund administered by the Seattle Foundation. The Fund is a competitive grant process overseen by the EJ Committee that will provide between \$10,000 and \$40,000 to multiple local justice-oriented nonprofits for community-led projects that help implement the four goals of Seattle’s Equity and Environment Agenda.¹¹⁴ Seattle’s efforts show an unusual degree of commitment to procedural justice in the decision-making and implementation stages. The Fund can be seen as a form of reparative justice in climate planning by creating local capabilities, but it may also be critiqued as a way of displacing the responsibility to take action onto local organizations that may not have the staff or other resources to fully address the problem - and asking them to do so with relatively little funding. Language in Seattle’s Agenda and other city documents also hint at aspects of transformative justice, it does not fully operationalize them.

II. Portland, Oregon: Building a Foundation of Community Trust

Portland is a city with a population of 640,000 – roughly comparable to Boston – and has a climate very similar to its northern neighbor Seattle. It is known as the “whitest city in America”, as some 72 percent of the population is white and only 6 percent is African American. In part, this is due to early racist practices of both the city and the state, including an outright ban on African American settlers when Oregon first became part of the union.¹¹⁵ Though widely considered a “hub of progressivism,” the city’s people of color must still contend with injustice. A recent study found

that African American and Latino/a renters were discriminated against two thirds of the time through the charging of higher rents and fees.¹¹⁶ EJ organizations in the city are active on projects to increase youth access to transportation, reduce urban pollution, and combat displacement.¹¹⁷

Portland is not vulnerable to sea level rise, but the region has already experienced other changes in climate. The city sits in the shadow of Mount Hood, where increases in temperature over the last century have caused glaciers to shrink more than 30 percent. The climate outlook for the city includes increasing numbers of heat-related deaths in summer and a spreading of the urban heat island effect. Increased spring meltwater coupled with drier summers is predicted to negatively affect the region's natural and agricultural systems.¹¹⁸

In this sociopolitical and environmental context, Portland was the first city in the country to craft an emissions reduction plan in 1993.¹¹⁹ Over the past 25 years, the city and the surrounding county have worked together on pollution reduction and sustainable development planning. Their approach has evolved significantly from an initial orientation focused primarily on greenhouse gas emissions to becoming a national model for equity in climate action. In a report titled Climate Action Through Equity, the city details this evolution and defines what equity means locally. The opening paragraphs lay out an explicit climate justice frame:

“...prior climate action plans focused on reducing carbon emissions while lacking discussion of who benefits and who is burdened. The absence of such an assessment resulted in missed opportunities to share the co-benefits that can result from climate action efforts... communities of color and low-income populations in Portland have been under-served by programs and investments and under-represented in decision making on climate policy. ... These inequities primarily result from ongoing institutional racial bias and historical discriminatory practices that have resulted in the inequitable distribution of resources and access to opportunities.”¹²⁰

The importance of equity in decision-making and project implementation began to emerge

between 2010 and 2012 during community discussions for a different city plan (The Portland Plan). A part of that plan included a Framework for Advancing Equity in city government and includes policy and process proposals. Using equity as a fundamental citywide principle set the stage for Portland's Climate Action Plan (CAP) - now it also had to be driving towards equity.

In 2013, the city received \$30,000 in grants from private foundations to study how equity could be integrated into local climate planning. A portion of the funds were used to hire a local expert to conduct an Equity Scan of Portland's most recent CAP to pinpoint areas of opportunity. The Scan concluded that the city should connect any strategies or actions in future plans directly to existing disparities and community goals, create and describe metrics by which to measure disparities and progress towards equity goals, and finally, make implementation easier by creating guidance for planners, policy makers and the public.¹²¹ The Scan recommends creating specific and measurable goals, each tied to equity considerations.

The majority of the foundation funding was used to create an Equity Working Group made up of six local environmental and justice-oriented community organizations. The Group reviewed the city's most recent Climate Action Plan, created a list of equity considerations and gave recommendations as to how equity could be better addressed in the CAP. The Group's nine Equity Considerations – or questions – serve as an implementation checklist of sorts for future actions. Considerations include whether a proposed action creates any direct or indirect burdens on communities of color or low-income communities, and if the action has mechanisms for accountability to ensure there is no disproportionate harm.¹²²

In addition to the nine Equity Considerations, the Group published most important takeaways from this process in their Climate Action Through Equity report. The lessons shared detail that climate planning through an equity framework requires: (1) a process that is flexible to the needs of participants; (2) acknowledgement of any power dynamics between the city and the

community and the creation of a space that encourages more mutualistic discussion; (3) building trust between the city and the community through technical and logistical support and starting with a discussion of what equity or justice means locally; (4) recognition that financial support often makes the difference between whether or not certain community members can participate; (5) realizing the importance of creating metrics that measure how an action was implemented more than what action was taken; and finally, (6) an acknowledgement that this community-driven review takes time to build trust and to get it right.¹²³ These lessons can be seen as building a climate planning framework that encompasses locally-appropriate actions for procedural and reparative justice.

An updated Climate Action Plan was subsequently released in 2015. It states that the city is “committed to leveling the playing field” across neighborhoods through actions such as reducing pollution exposure, reducing the burdens of housing and energy costs, investing in public transit infrastructure that is safe, and improving accessibility while addressing gentrification pressures.¹²⁴ Five impact areas are identified using icons (which aides their readability and informs action prioritization) and include: (1) emissions reductions targets; (2) job growth; (3) advancing equity; (4) improving environmental quality; and (5) improving health (See Figure 6). Along with added specificity for actions described in the CAP, two new actions came out of the Equity Working Group. Firstly, that previously under-represented and underserved populations are engaged in the implementation stage of actions. Secondly, that the city and county continue to build their own capacity so that effective implementation and equitable outcomes are assured.¹²⁵ The Plan explicitly defines climate equity and lists out the first-step actions that should be completed by 2020. Furthermore, these near-term actions are described, noting which city department bears responsibility for implementation, a timeframe is given, and potential indirect impacts are noted.

ACTIONS TO BE COMPLETED BY 2020		Impact	Lead agency	Timeframe
3A	Electricity Supply – a) Collaborate with Portland General Electric, Pacific Power, customers and stakeholders to reduce the carbon content in Portland's electricity mix by 3 percent per year. b) Communicate with utilities and the Oregon Public Utility Commission on the critical importance the City and County place on reducing the carbon content of electricity delivered to the City, County and other customers. c) Mitigate potential cost burdens to low-income households principally through efficiency measures that reduce energy use and cost.		City: BPS County: OS	Existing and/or ongoing
3B	Installed Solar and Solar Access – Add another 15 megawatts of installed solar photovoltaic capacity. Motivate and assist households and businesses throughout the community to install solar. Revisit City solar access policy and regulations, recognizing changing conditions due to the proliferation of residential rooftop solar energy systems.		City: BPS County: OS	Near-term
3C	Community Solar – Support the development of community solar projects that benefit all residents, particularly communities of color and low-income populations.		City: BPS	Existing and/or ongoing
3D	Renewable Energy Policy – Participate in statewide policy discussions to expand the market in Oregon for renewable energy, including solar, wind, geothermal, biogas and biomass, and remove barriers to widespread participation in renewable energy programs like community solar.		City: BPS County: OS	Existing and/or ongoing

Potential impact Magnitude of carbon emissions reduction High potential to support jobs and prosperity High potential to advance equity High potential to improve local environmental quality High potential to improve health

Figure 6: Portland's 2015 Climate Action Plan describes each action, the department responsible for implementation and the potential impacts of each action. Image from Portland's 2015 Climate Action Plan. Source: <https://www.portlandoregon.gov/bps/article/531984>

Portland has grouped its efforts to enhance equity into three categories: procedural, distributional and structural (which defines strategies towards reparative and transformative justice). Structural equity is described as, “[c]ommitment and action to correct past harms and prevent future negative consequences through accountability measures and institutionalizing decision-making structures that support transparency and continual improvement”.¹²⁶ The groupings bear an undeniable resemblance to the climate justice principles laid out in the academic literature. In terms of measuring equity and the impact of actions, the plan describes how the various categories of equity require different measurements: “[d]istributional equity can be measured with outcome metrics such as the demographics of participation rates or investment of resources in dollar amounts. These metrics measure “who,” “where” and “what.” Structural and procedural equity are different constructs that result in behavior change. Metrics must track “how” and “to what end.”¹²⁷

The progress report provides specific descriptions of the internal and external municipal actions taken up to that point. Overall, it indicated Portland had completed 5 percent of all actions in the Plan, another 83 percent are on track, and that 14 percent are facing obstacles (which are described).¹²⁸ According to an interviewee familiar with Portland’s progress, the current struggle is

how to quantify progress, particularly when it comes to measuring equity. Despite this challenge, Portland's efforts to integrate equity into climate action have also created an important co-benefit: fostering trust and enhanced communication between the city and local organizations.

III. Boulder, Colorado: The City and Community Put Skin in the Game

While sharing a history of progressive politics and activism with Boston, the city of Boulder is geographically and climactically quite different. At over a mile above sea level, the climate in Boulder is dry. Temperatures can swing from extremes of over 100 in the summer to less than zero in the winter. With an estimated population of just over 100,000 (nearly a quarter of which are students), the city is almost 77 percent white and 13 percent African American, with roughly 18 percent identifying as having Latino/a ethnicity.¹²⁹ And Boulder is already feeling the impacts of global warming. The number of days over 95 degrees Fahrenheit has nearly doubled in the last 15 years. It is projected that by 2050, nearly half the summer could be over 95 degrees. In addition, climate change is expected to bring increasing wildfires and droughts (fire season in the area is today five weeks longer than it was in the 1970s), as well as floods and declines in the snowpack.¹³⁰

Throughout 2015 and 2016, the city of Boulder combined a series of different community engagement events to provide climate change education to residents with gathering local perspectives on how the city should plan for climate change and how it could help grow community-based climate action leadership.¹³¹ Major takeaways from this process showed that Boulder's residents and community organizations wanted to see an increase in renewable energy procurement and additional public transportation options (particularly for the city's Latino/a and lower-income residents). They also desired policies that reduced commutes and greenhouse gas emissions and access to resources for residents who wanted energy efficiency upgrades or were transitioning to renewable sources.¹³²

A group known as the Just Transition Collaborative (JTC) formed in July 2016 as a result of the city's community engagement process. The JTC is a partnership of local academics, students and justice-oriented organizations that has helped to promote social and environmental justice gains through energy, climate and employment actions. Using the 'Just Transition' phrase coined by the grassroots movement, JTC frames its work as helping the city transition from a fossil-fuel based economy to one based on renewables. In its Just Transition Report for the city, it outlined how Boulder could incorporate social justice and diversity in its forthcoming Climate Commitment.

Broadly speaking, JTC stressed four goals, with detailed objectives for each: (1) building community leadership and capabilities among the city's lower-income and ethnic communities; (2) creating economic opportunities for these communities that were socially just; (3) promote the equitable sharing of energy costs and ownership of renewable alternatives; and (4) provide leadership regionally for equitable climate action.¹³³ While JTC is a separate entity from the city, it aims to assist Boulder by helping to facilitate community conversations, aid in the development of local metrics to track renewable adoption and social equity, host educational events, help foster the growth of the local environmental movement, and support local climate projects.¹³⁴

The Climate Commitment was adopted by the city in late 2016 and finalized in early 2017. Based off recommendations from the JTC, the Commitment has incorporated just transition as a principle for local climate action and defined it as, "Integrat[ing] social equity considerations in all major energy transition initiatives to improve the economic, social and political opportunities for all segments of the Boulder community."¹³⁵ The Commitment has adopted the first three JTC goals, focusing in particular on increased access to renewables, energy efficiency and public transportation. It calls for increased equity and diversity in the city's climate leadership, policy development and community project grantees. And it demands economic justice in the form of a living wage, green jobs, utility affordability and greater entrepreneurial opportunities.¹³⁶ The Commitment lays out

Boulder's general action areas for each year from 2017 to 2020, showing a dedication to implementable policies for distributive, procedural and elements of reparative justice. However, how each of the just transition goals will be met is still unclear.

Boulder is also partnering with the University of Colorado in Boulder to create collaboration platforms for the sharing of ideas and the support of community-led climate actions. One tool is Boulder Measures, an online dashboard measuring city data and community indicators towards multiple sustainability goals. Boulder Measures outlines not only the goal's status but provides data on trends and describes recent efforts towards the goal.¹³⁷ Defining a city's baseline indicators and democratizing access to the city's progress shows Boulder is institutionalizing procedural justice.

Boulder has a unique way of funding its work. Through municipal Climate Action Tax passed in 2007 and levied on energy consumption, it funds many of its climate initiatives and plans, and it has expanded the number of households that have implemented energy efficiency improvements.¹³⁸ Roughly \$1.8 million dollars is collected annually, and some \$300,000 has been allocated for community solutions to reduce emissions and significantly increase solar installation.¹³⁹ The tax is an alternative to foundation-led funding. As such, it demonstrates the city has "skin in the game," and allows for greater community control over the decision-making process.

IV. Springfield, Massachusetts: Local Organizing for Climate Just Solutions

The city of Springfield lies in the eastern half of Massachusetts along the Connecticut River. Long a hub of manufacturing and innovation, Springfield is currently home to over 153,000 residents. Though a quarter of the size, the city mirrors Boston in its diversity. Half of the population is white, 39 percent identify as Latino/a, 22 percent as African American and roughly 3 percent as Asian.¹⁴⁰ Springfield has been designated as an EJ community by the state based on its high level of poverty (32 percent) and other demographic markers.¹⁴¹ Residents of the city are

incredibly rent burdened. The cost of living is 20 percent above the national average while incomes are 20 percent below the national average.¹⁴² Both transit and economic justice are concerns since the area lacks robust public transportation and people of color are more likely to live in the city (while employment opportunities oftentimes lie outside the city's boundaries). Springfield's vulnerable communities are also exposed to a disproportionately higher number of environmental hazards from factories and frequent truck traffic. Nearly a fifth of the city's children have asthma.¹⁴³ The predicted climate impacts for Springfield are similar to Boston – with increased flooding expected from extreme precipitation and a two- to threefold increase in the number of extremely hot summer days expected for 2050.¹⁴⁴ In turn, this will increasingly threaten air quality and health.

Springfield's approach to climate action stems in large part from community mobilizations, starting with its community-organized Climate Justice Conference held in 2013. By 2014, over 30 justice-oriented organizations and local businesses had officially come together to form the Springfield Climate Justice Coalition. The Coalition rallied together for municipal action, played a large part in the formation and passage of the city's 2014 Resolution on Climate Change and put pressure on the local gas utility to fix over 500 leaks across the city.¹⁴⁵ The Resolution called on the city to create a Climate Action Plan and hire a coordinator to work with the larger community in overseeing plan formation (a coordinator was finally hired in May 2019).¹⁴⁶ After its experiences with tornadoes, ice storms and other severe weather, the city applied for a grant through the National Disaster Resilience Competition run by the US Department of Housing and Urban Development (HUD). Granted \$17 million in funding, Springfield put close to \$200,000 towards its climate plan.

To create the Plan, the city contracted with the Pioneer Valley Planning Commission (PVPC). Some of the outreach and engagement responsibilities were subcontracted to local organizations that were also key members of the Springfield Climate Justice Coalition. Starting in 2015, PVPC and its local partners sought public feedback for the plan. Coalition members played an

integral role in directing the city towards a plan that prioritized justice in its actions, and their efforts are visible in the final plan. Of the two primary goals in the plan, one is to, “Increase community resilience ... with a focus on the city’s vulnerable populations where they live and work, maintaining an ongoing commitment to and emphasis on climate justice throughout all current and planned work.”¹⁴⁷ Where Springfield’s approach diverges from other cities is its endorsement of the Principles of Environment Justice. This is unusual, and a reflection of Springfield’s vibrant and engaged community. The city’s plan exemplifies the distributive, procedural and reparative principles of climate justice, stating that, “A thoughtful, rapid, and responsible transition to a just, clean, and low-carbon economy will develop new jobs, create new community organizations, and integrate into our political and economic structure the people who until now have been marginalized and underserved.”¹⁴⁸ The city also engaged a local planning expert to create vulnerability maps and an index for prioritization of climate actions. Vulnerability as defined in Springfield includes measures of access as well as economic, environmental and social vulnerability factors.¹⁴⁹ In 2018 the city released a Climate Action Chart similar to Portland’s update where residents can review progress toward implementing the city’s climate action plan. The Chart also identifies funding sources, provides timelines and names responsible parties.

Springfield is one of the few cities studied that frame actions in terms of justice rather than equity and the only city to use the term ‘climate justice’ – no doubt a reflection of consistent local organizing. The Coalition put out its own commitment to ensuring that the city’s plan advances locally-specific justice principles. But there are still many concerns to be addressed. Among the most pressing according to interviewees familiar with Springfield’s progress were ensuring the city respects and incorporates the actions desired by the community, not just those seen as achievable by policymakers. In many ways, Springfield is ahead of the game. But that is thanks to a community that was already organized more than a city open to realizing radical inclusiveness in planning.

Chapter 5: Climate Action in Boston

I. A Timeline of Climate Action Planning

Tackling climate change has been on the City of Boston’s agenda since 2007, when it first began to track municipal emissions. Many climate action plans and initiatives have been released in the intervening years including vision documents focused on transportation, housing, racial equity and other concerns connected under Imagine Boston 2030, Boston’s first citywide plan in over 50 years. Taken together, they signify the city’s evolving and expanding understanding of the impacts of climate change, but also attest to the city’s incomplete handling of the issue. Figure 7 summarizes the major plans and initiatives Boston has undertaken since 2007 and indicates which aspects of a climate justice framework are expressed. This summary clearly shows the city still struggles to achieve consistent procedural justice and has not yet adopted a transformative justice frame.

Summary of Boston’s Climate Actions and Plans 2007 - 2019			Principles			
Year	Actions	Purpose	D	P	R	T
2007	Executive Order	Mandate CAPs, reduce municipal emissions, increase renewables				
2007	Climate Action Plan	Renewables, recycling, expand transit, efficient affordable housing			X	
2009	Climate Committees	Formed around 2011 CAP. Expanded community engagement		X		
2009	Renew Boston	Connects homeowners to free energy audits, energy services	X		X	
2011	Climate Action Plan	Mentions equity, adaptation to be part of future plans/projects	X	X		
2011	Sparking Boston's Climate Revolution	Community recommendations to help implement 2011 CAP	X	X	X	
2011	Greenovate Boston	Public engagement office for city on climate initiatives		X		
2013	BPDA Climate Change Checklist	Voluntary checklist where developers describe building resiliency				
2014	Climate Action Plan Update	Initiatives for neighborhoods, transit, buildings, emissions	X			
2016	Climate Ready Boston	Expanded vulnerability analysis, neighborhood resiliency focus	X		X	
2017	Imagine Boston 2030	Comprehensive plan that acknowledges existing disparities	X	X	X	
2017	Resilient Boston Strategy/Blueprint	Build resilience by addressing structural inequities, specific ideas	X	X	X	X
2017	Climate Ready Boston Leaders	Train volunteers to educate public on climate impacts and plans	X	X	X	
2019	Carbon Free Boston	Strategies for carbon neutrality, highlights justice implications	X		X	

Figure 7: Summary of major plans and initiatives in Boston from 2007 through early 2019. The right-hand side of the table indicates which principles of a climate justice framework are expressed: distributive, participatory, reparatory, and transformative. Source: Christina Schlegel.

In April of 2007, former Boston Mayor Thomas Menino issued an Executive Order on Climate Action that called for a Climate Action Plan and updates to it every three years. In addition, it set significant emissions reduction goals for municipal buildings and vehicles (including a pledge to get to 80 percent reduction by 2050), required new city buildings to be LEED certified and evaluated for wind and solar feasibility, and set a goal of having 15 percent of the city's electricity be from renewable sources by 2012.¹⁵⁰ It called for the creation of a Community Climate Action Task Force, which would be tasked with expansive responsibilities. The Task Force would review Climate Action Plans, giving recommendations to the Mayor and the city on the actions needed to reach the city's climate goals, create educational materials on climate change science and actions for residents, and identifying climate-adaptive economic and workforce development opportunities.¹⁵¹

Later that year, the city released its first Climate Action Plan (CAP). The 2007 CAP focused primarily on where municipal greenhouse gas reductions could be made. Included were feasibility studies and pilot projects for solar and wind energy generation in the city, a pledge to increase recycling 10 percent by 2012, tree cover 20 percent by 2020, and expansions of public transportation options, particularly bike path mapping and trail creation through the newly established Boston Bikes office. The 2007 CAP included a grant-funded project to incorporate green design, energy efficiency and renewable energy construction practices into the city's affordable housing program. In terms of these early emissions reduction goals, the city has made strides. By 2013, the city had reduced municipal greenhouse gas emissions by a surprising 26.6 percent from a 2005 baseline of almost 200,000 metric tons.¹⁵² But the Community Climate Action Task Force was never created.

It is in 2009 that the first of the city's efforts towards creating procedural justice can be seen. Funded by the Barr Foundation and the Boston Foundation, two committees were formed in preparation for the city's 2011 CAP update. The Climate Action Leadership Committee was made up of experts, scientists, business leaders, faith communities, justice-oriented and neighborhood-

based organizations while the Community Advisory Committee was made up of resident advocates. The committees were given many of the responsibilities proposed for the 2007 Task Force, while the Advisory Committee was also responsible for community engagement. With funding for one year, they had 13 public meetings and five workshops to gather resident input.¹⁵³ In excess of 30 neighborhood and city partner organizations helped conduct outreach and encourage participation.

Similar funding in 2009 led to the creation of Renew Boston, a program designed to connect Boston homeowners and businesses with free energy audits, energy efficiency and alternative energy services provided through the state and local utility providers like Eversource.¹⁵⁴ In 2010, Renew Boston had a \$900,000 retrofit program aimed at low-income and multi-family buildings and contracted with multiple community-based organizations to reach interested residents.¹⁵⁵

It is in Boston's 2011 CAP that the term "equity" first appears as a general principle. In a nod to distributive justice, the plan asserts "implementation of the climate action recommendations should not exacerbate existing social and economic inequalities and should, whenever possible, contribute to reducing those inequalities."¹⁵⁶ Drawing on climate and impact predictions for the Boston area, based in large part on expert research conducted at local universities, the 2011 CAP calls for adaptation planning to be integrated into all future planning and project review processes.¹⁵⁷

Two years later, the Boston Planning and Development Agency or BPDA (formerly known as the Boston Redevelopment Authority) created a Climate Change and Resiliency Checklist, which asks developers of large projects in climate-vulnerable areas to analyze the potential future effects of climate change on their parcels. The BPDA had also invested in solar and solar hot water for at least three affordable housing developments in Dorchester, East Boston and Jamaica Plain.¹⁵⁸ Another equity commitment made was in economic development, where the city committed itself to better compliance with its own Resident Jobs Policy (to hire at least 50 percent residents, 25 percent minority and 10 percent women), connecting residents with training in multiple environmental and

energy sectors, and adhering to the Resident Jobs Policy for any future climate action work.¹⁵⁹

Alongside the 2011 CAP, the two committees helped to create Sparking Boston's Climate Revolution, a report that provided further recommendations to make the 2011 CAP a success. The report included recommendations that implementation and evaluation of climate actions include the community's input. Further climate commitments came from local industry and employers. By late 2011, many of Boston's preeminent business and civic leaders (from real estate, finance, health care, higher education, construction) coalesced into the Green Ribbon Commission, a permanent group of expert advisors to help lead and review the city's progress towards its climate goals.

The 2011 CAP noted the city was seeking resources to fund a Community Climate Action Committee, and that it was also exploring a citywide climate awareness media campaign, which would improve access to climate action information on the city's website.¹⁶⁰ While it is unclear if such a media campaign ever existed, the city did create Greenovate Boston in 2011, which has become the public outreach and engagement arm of the city on climate initiatives. Greenovate Boston also played a coordinating role in the yearly Greenovate Summit, which brought together city officials, community organizations and interested residents to discuss celebrate the city's progress and resident-led actions. Initially the annual Summits had robust support and attendance, but there has not been a summit in years, having been replaced by monthly neighborhood meetups and the launch of the Climate Ready Boston Leaders pilot program in May 2017. The aim of the pilot program is to give volunteer community members training on how to educate their neighbors and local organizations on local climate impacts and the city's climate plans.

The 2014 Climate Action Plan was released approximately a year after a mayoral transition and reflects input from both the Menino and Walsh administrations. Priorities were established around neighborhoods, large buildings and institutions, transportation, climate preparedness and achieving 80 percent emissions reduction by 2050. Cross-cutting themes including community

engagement, social equity, public health and economic development were highlighted.¹⁶¹ By 2014, the city had narrowed its definition of social equity to mean “minority and low-income communities must not be disproportionately impacted by climate hazards” but also that “benefits from climate mitigation and preparedness efforts should be shared equally among all groups of people.”¹⁶² A comprehensive citywide approach to equity was to be crafted later through the Rockefeller 100 Resilient Cities initiative.¹⁶³ To provide greater equity in the implementation of climate actions, the 2014 Plan included an assertion that the city would publish data annually on greenhouse gas emissions and how community members could participate in initiatives. Later, the online information would detail progress on tree planting, equity and climate preparedness targets as well.¹⁶⁴

Initiatives in the 2014 CAP take an approach to climate justice that is incomplete. The 2014 Plan calls for the creation of urban farms or gardens on vacant city lots, an increase in healthy food education, and the expansion of local food options in Boston’s Public Schools.¹⁶⁵ The inclusion of broader issues of access is admirable, yet the implementation language is not specific. In terms of transportation, the Plan is again more future-focused, asserting actions the city could take (such as, “encourage more biking and walking” or “continue to expand public transportation coverage and service”) in contrast to more concrete descriptions of actions the city has already explored.¹⁶⁶ Also referenced is the city’s 2013 Boston Bike Network Plan, a strategy that would have expanded bike lanes by nearly 200 miles. However, it does not detail how the broader city will support the Bike Plan. Similarly, how stated actions to expand low-income and renter access to energy efficiency programs will be achieved is not articulated, aside from translating materials.¹⁶⁷

Though the 2014 CAP was a more comprehensive effort by the city towards distributive justice, it did not embody either true procedural justice or seriously articulate actions to achieve reparative or transformative justice. Since it was viewed in part as an update of earlier plans, public engagement was considerably less expansive and inclusive. One large Steering Committee with city

officials, for- and nonprofit leaders, and some community representation was formed, while noting the importance of future participation, resource sharing and coordination through many of its proposed actions. In essence, it postponed this responsibility to the future.

About a year later Mayor Walsh launched Climate Ready Boston, an initiative to “help Boston plan for the future impacts of climate change.”¹⁶⁸ Climate Ready Boston created an overall framework for climate action in the city in partnership with the Green Ribbon Commission and with support from the Massachusetts Office of Coastal Zone Management. The initiative helped to coordinate the actions of various city departments (Environment, Emergency Management, Transportation, the Public Health Commission, the Boston Planning and Development Agency (BPDA), and the Mayor’s Office of Resilience and Racial Equity (MORRE)).

It was under Climate Ready Boston that the city’s most recent climate report (also titled Climate Ready Boston) was released in December 2016. Like earlier climate plans, private foundation partners (particularly the Barr Foundation and Leventhal Family Foundation) played a central role in funding outreach and report creation. While not a city climate action plan update per se, the report details climate impacts for different neighborhoods, expands and outlines different types of social vulnerability and proposes dozens of initial strategies and ideas for building resilience. Creation of the report draws heavily on the area’s scientific community, utilities and businesses. Community voices were represented by eight neighborhood organizations on a Community Advisory Group.¹⁶⁹ And while development of the report’s initiatives was based in part on interviews and focus groups conducted with a broad range of local stakeholders,¹⁷⁰ no details are provided to describe the quality and breadth of this outreach. In addition, the plan’s principles reflect both a heavily expert-weighted engagement and a rather troubling refocusing of the city’s climate actions towards infrastructure and the built environment.

Even so, the 2016 report shows a marked expansion in understanding the structural

conditions of vulnerability. In it social vulnerability is not limited to a traditional definition of marginalized groups being low-income, people of color and those with limited English proficiency, but also encompasses children, the elderly, people with disabilities and those with chronic and acute mental illness.¹⁷¹ This expanded definition reflects resilience research done by Boston's former Chief Resilience Officer, Dr. Atyia Martin. The city has come a long way in understanding vulnerability and the unequal risk burden carried by individuals and neighborhoods, yet the report still does not give specifics on how Boston will reach out to and substantively engage these newly identified populations. The report's broader definition of social equity touches on the recognition aspects of reparative justice, which is a necessary basis for both procedural and distributive justice, but does not address underlying systemic forces of injustice.

In terms of the actual initiatives proposed, the unjust impacts of climate change are addressed to differing degrees. Citywide initiatives in the report promote distributive justice by calling, for example, to expand existing emergency preparedness outreach to include particularly vulnerable populations on the hazards of climate change. This is to be managed by multiple departments in partnership with nonprofits. The report promotes outreach to facilities that provide social services to vulnerable residents to assist them in creating their own preparedness and evacuation plans. It also calls for updating the city's Heat Emergency Action Plan and expanding access to emergency facilities. Inclusive hiring, living wages for local workers, support of minority and women-owned businesses and local solar energy generation are further recommendations.¹⁷²

The report specifically details the complex existing and future climate vulnerabilities of eight neighborhoods: Charlestown, the Charles River area, Dorchester, Downtown, East Boston, Roxbury, South Boston and the South End. It provides incredibly detailed overviews of each neighborhood's vulnerabilities – social vulnerability, climate impacts, and risks in terms of access to resources and services such as transportation. But the “outreach campaigns” recommended to

educate residents on the risks and engage them in adaptation planning lack both detail and substance and appear very generalized across impacted neighborhoods.

On the procedural end, one initiative to be implemented within two years calls for the creation of “local climate resilience committees” ideally headed by leaders of long-term community based organizations in the neighborhood which would help educate residents on climate impacts (detailed in the 2016 report) and gather resident feedback for the city.¹⁷³ These committees would then help to develop local climate resilience plans covering localized land use and infrastructure adaptation planning, adaptation financing, and other priorities.¹⁷⁴ Though somewhat confusing, these local plans can be seen as an effort to decentralize planning and co-create local climate actions, but not in a way that achieves reparative justice. Priorities appear to have been decided upon by the city in a top-down manner. It is not clear how much decision-making authority community leaders and the voices of impacted communities will have during project identification and implementation.

The purpose of the Climate Ready Boston report is also unclear. Greenovate’s outreach and pilot programs are in large part based on disseminating this report to the public and gathering community feedback. It is hard not to see the report as a de facto, if unofficial, climate action plan when the city has asserted that it is, “[o]ur responsibility is to turn these proposals into action.”¹⁷⁵ But language in the 2016 report employs qualifying verbs like “should” “may” and “could” abound, so it is difficult to gauge the likelihood of proposed actions being realized. The report is contradictory – offering both a more advanced understanding of vulnerability and inequity in the city while drifting away from the more robust co-creation processes of past plans. This contradiction is all the more troubling given the degree to which equity and justice are inconsistently addressed in other major city plans and visions for the future of Boston.

Boston is now well into the process of releasing its next climate action plan update, expected to be complete in the fall of 2019. According to the Environment Department, the update will

“emphasize a small number of high-impact, priority actions to reach carbon neutrality by 2050,” and the priorities will work towards the “city’s goals to improve equity, growth, access to mobility and health.”¹⁷⁶ In order to achieve these goals, the 2019 update will be guided by three groups that will help formalize roadmaps for implementing the city’s priority actions: (1) a Steering Committee staffed by agency and department heads; 2) a Working Group representing leaders from community groups, businesses, trade organizations and local advocacy groups; and 3) Street Teams, or youth volunteers who will engage residents across the city and solicit their feedback. It is too early to tell what the 2019 plan will ultimately look like, but publicly available meeting notes have raised concerns about the process being top-down and light on implementation. It is promising that the 2019 update will draw heavily on another recent body of work entitled Carbon Free Boston. Carbon Free Boston offers a detailed analysis of the social equity challenges and opportunities for Boston on its path to decarbonization. The analysis lays out thoughtful and specific policy proposals that can help avoid potentially inequitable consequences of moving towards a zero-emissions city and therefore represents some of the most actionable city proposals towards achieving reparative justice.

II. Related City Plans

Climate Ready Boston is part of a larger and long-term planning effort called Imagine Boston 2030. Imagine Boston is ambitious. As the first citywide plan in 50 years, it is meant to knit together a plethora of plans on housing, transportation, the arts and other areas. As an amalgam of feedback drawn from over 15,000 residents, Imagine Boston’s primary goals include the creation of more affordable housing and significant emissions reductions. It also aims to promote flood protection to create better access to open space areas, to improve transportation service, and to design streets to be pedestrian and bike friendly.¹⁷⁷ Crafted through a two-year, process that included community workshops, street and text surveys, hands-on workshops and online engagement,¹⁷⁸

Imagine Boston might represent the city's most robust commitment to procedural justice so far.

In addition, the plan provides recognition of the underlying inequalities in Boston's social, racial and economic fabric. The plan notes that there are "significant disparities in educational attainment, homeownership, commute times, access to health food and health care... these factors are correlated with major health outcomes and wealth gaps between races and neighborhoods."¹⁷⁹ It specifically calls out the vast difference in household wealth between whites and non-whites. A recent report titled *The Color of Wealth in Boston* shows that while white households in Boston have approximately \$247,000 in median net wealth (assets minus debts), black families have a median net wealth of just \$8.¹⁸⁰ Even among the Caribbean population – the population of Boston with the highest wealth relative to white residents – median net wealth is \$12,000, or 5 percent that of whites.¹⁸¹ Imagine Boston recognizes the link between walkable neighborhoods and resident health indicators. Mattapan and Hyde Park have the lowest walk scores and correspondingly much higher obesity than the city's most walkable neighborhoods.¹⁸² Imagine Boston is expansive in its stated visions for what Boston could be. For most visions in the plan, the city has pinpointed metrics to evaluate progress. While "equity" itself is not defined in Imagine Boston, the term is used throughout to refer to actions that would help close racial and economic disparities.

Overall climate resiliency for 2030 is achieved by reducing greenhouse gas emissions in the city; protecting flood-prone areas; and interestingly, providing localized energy generation through district energy and microgrids.¹⁸³ However, when it comes to climate change, some of the metrics for evaluation are goals themselves. The metrics/goals are to reduce emissions by 50 percent by 2030, and become carbon neutral by 2050. It also seeks to increase tree canopy coverage, and to "reduce economic loss and number of people exposed to climate related flooding".¹⁸⁴ A number of initiatives seem to be at odds with the climate predictions in Climate Ready Boston, including the encouragement of large-scale building projects in the Seaport district,¹⁸⁵ an area vulnerable to sea

level rise. Imagine Boston 2030 could be described as an idealized collective vision of what Boston could be, whereas details regarding implementation and evaluation are less fleshed out.

Social equity and justice are alluded to but not concretely defined or discussed in many of the city's recent plans connected under the umbrella of Imagine Boston 2030. Enter Resilient Boston, a wide-ranging strategy for addressing the systemic racial inequities in the city created under the leadership of Dr. Atyia Martin, the city's first Chief Resilience Officer from 2015 through 2017. The position, and initial funding for the Strategy, came from Boston's selection as one of Rockefeller's 100 Resilient Cities in 2014. Dr. Martin's position was elevated to cabinet-level so that her office could help other departments integrate racial equity into their own work.

The Resilient Boston Strategy (RBS) was released in July 2017 and is the culmination of over two years of community engagement and the work of the Boston Resilience Collaborative. At these gatherings, approximately 180 ideas were put forward, which were consolidated into 70 final initiatives. The ultimate purpose of RBS is to provide an overarching framework for building local resilience through transformative and reparative justice mechanisms. The Strategy calls out the roles that structural and institutional inequities have played in maintaining or even increasing vulnerability of residents – whether that be economic, social, racial or environmental. Future action therefore means addressing Boston's history of school segregation and forced busing, redlining, gentrification, and disparate transportation, food and open space access as well as unequal access to city services and jobs. "Racism is a barrier to the types of social connections we need within and across neighborhoods," proclaims the City in its Resilience Strategy Blueprint.¹⁸⁶

Acknowledging both unequal exposure burdens and the lack of political power in EJ communities, Resilient Boston asserts that the city will work to "rectify these disparities" by partnering with neighborhood environmental justice leaders and advocates by creating opportunities for neighborhood-based leadership on adaptation measures.¹⁸⁷ Resilient Boston also recommends

the creation of local adaptation plans (likely referring to Climate Ready Boston), the expansion of pilot projects for microgrids and distributed energy in low-income communities of color, and integrating questions of resilience and racial equity into future development approval processes. It infuses infrastructure-focused initiatives with local community needs. More importantly, for each of the initiatives put forth the Strategy gives a timeframe for implementation and lists which city departments and neighborhood-based partners will be responsible for overseeing implementation.¹⁸⁸

Resilient Boston is explicit in defining equity, justice and resilience, though the definitions are similar. Justice is not explicitly described as having reparative or transformative elements but is, “The state or quality of being fair, equitable, or moral. It exists when people are not treated unfairly on the basis of race, gender, sexuality, religion, political affiliations, age, belief, disability, location, socioeconomic circumstances, or any other characteristic(s).”¹⁸⁹

The city’s resilience lens is indicative of a long-term evolution and application of the term “resilience” from one concerned with the adaptability of nature to a broader, decidedly more humanist and intersectional frame. It acknowledges that institutional and systemic inequities within the city must be wrestled with going forward. Social resilience is seen as foundational to all other types of resilience, including the natural and built environment, critical infrastructure and the economy.¹⁹⁰ The Resilient Boston Strategy represents a new kind of planning for Boston, one that is meant to be an iterative, “living document.” The Resilient Boston Strategy, along with Carbon Free Boston, represent Boston’s most advanced, community-grounded and specific understanding of different manifestations of injustice and the multidimensional framework for action necessary to achieve climate justice.

Chapter 6: Community Conversations

There is little qualitative research on the subject of urban climate justice. Existing research is largely theoretical, quantitative, or consists of comparative approaches to analyzing various city plans and policies. But a quantitative analysis or comparative review cannot by itself provide an adequate understanding of new research areas and by their very nature places boundaries on what is considered important to the topic. Nor can such approaches represent the full depth and richness of knowledge available through a qualitative approach.

My thesis draws heavily on research and interviews completed during a summer fellowship with the Boston City Council. As a part of that fellowship, I conducted 47 interviews between May and August of 2017. Of the 47 interviews, 31 were with leaders of community-based organizations, justice-oriented organizations, volunteer climate action groups, community development corporations and neighborhood organizations representing most of Boston's neighborhoods. Eight interviews were conducted with officials from various offices within Boston's City Hall. The remaining eight interviews were held with academic experts in climate planning and environmental justice, as well as with planners from other U.S. cities that have incorporated an equity framework into their climate actions and plans. The interviews lean heavily towards community voices, but narratives from experts and city officials were also sought to provide perspectives from inside city government and draw on ideas from the academic world.

These interviews explore local manifestations of injustice and ideas for integrating a justice-oriented approach into climate action. Using grounded theory methodology, the interview data are organized into three major themes and eight sub-themes. Four of the themes are linked to concepts present in the literature and city case studies: (1) concerns with an over-focus on the built environment; (2) how spatial scale influences solutions to urban problems; (3) the importance of a holistic frame for action that is intersectional and relevant to the community; and (4) how language

affects the intention of policy and planning. The remaining themes summarize comments related to actualizing the four principles presented in my climate justice framework.

The interviews highlight numerous concerns with the city's current approach to climate action. Such concerns include a lack of plan specificity and implementation, piecemeal access to climate information, little clarity on how existing plans are being used, and a need to broaden adaptation to mean social resilience in addition to resilience to the built environment. Interview analysis indicates the critical importance of contextualizing climate action within a larger frame that ties in multiple justice concerns, the need for Boston to commit to better procedural justice, and the community's view of climate action as an opportunity to fundamentally address systemic and structural injustice through a fundamental shift in power and resources to the local level.

I. Grounded Theory Methodology

Interviewees from community-based organizations were selected using purposive sampling based on a two-tiered system: maximizing the breadth of neighborhood representation and the organization's stated mission. My goal was to have representation from all neighborhoods of the city while choosing organizations with a social justice, environmental conservation or neighborhood development focus. Interview requests were sent to organizations known locally for their engagement with climate and environmental justice campaigns in order to bring in the perspectives of longtime activists. The diversity of the community interviewees was increased by snowball sampling. Early interviewees were asked to recommend other individuals or groups to contact. Particular emphasis was placed on receiving feedback from neighborhoods that have experienced historical disinvestment and continue to experience social, economic and environmental inequity. These same neighborhoods are home to many of Boston's EJ populations as defined by the state: Dorchester, Mattapan, East Boston, and Roxbury. Additional interview requests were sent to a

broader group of organizations, including those working on more regional campaigns, advocacy organizations, and racial justice groups. This was part of an effort to be as inclusive as possible and to build on the intersectionality of issues within the climate justice framework.

Of the 65 Boston-area organizations contacted, 31 were available for interviews. Voices from the Charlestown, Hyde Park, Downtown, West Roxbury, South Boston and Fenway neighborhoods are not represented in the interviews as some of the organizations contacted did not respond or did not want to be interviewed. In addition, multiple interviewees spoke of being overwhelmed with existing tasks and campaigns, which may be a factor in why many groups did not respond. While community interview requests were sent to organizational directors, for practical reasons interviews took place with both directors and other organizational staff.

The purpose of the interviews conducted for the Boston City Council was threefold: 1) to uncover the extent to which interviewees and their organizations have been a part of the city's climate planning efforts; 2) to create a community-informed critique of those efforts and other city actions; and 3) to collect local ideas and recommendations for climate just action in Boston. The questions asked of city officials were directed more heavily towards gaining an understanding of the interplay between city plans, policies and outreach processes. Interviews with experts and other city planners revealed examples of just climate actions beyond Boston's boundaries and were intended to shed light on the procedural concerns with implementing a justice framework.

I utilized a more open-ended interview process for this thesis. It is designed to allow ideas and concepts to emerge more organically from multiple data points. It is for these reasons that I chose a semi-structured interview approach with questions that were exploratory rather than clear-cut. During the interview, responses were recorded either on paper or on a computer. After the interviews were finalized, all were digitally transcribed and anonymized by removing interviewee-identifying data. Questions asked included:

- In what way has the city engaged your organization in climate action planning and policies?
- How has/how will climate change affect your community/your organization's constituents?
- What does climate justice mean to your organization?
- What would climate just actions or a justice framework look like to your organization?
- Are there example programs and/or initiatives that employ a climate justice approach, which your organization sees as something Boston could adopt?
- How would your organization like to see the city engage the community in climate planning?
- Is there anything else your organization would like the city to know on this issue?

This research uses a grounded theory approach to data analysis. Grounded theory is a method for qualitative data analysis developed by Barney Glaser and Anselm Strauss that is inductive. It lays out a process to engage with data that results in a theory “grounded” in observation.¹⁹¹ Following qualitative data analysis strategies described by Earl Babbie,¹⁹² the interview data were coded, or classified for easier analysis and retrieval. The digitally transcribed and anonymized interview statements were broken into 295 distinct comments which were coded using short summaries, each pertaining to a single issue. These summaries were then organized into emergent structural themes (grounded theory): four themes raising issues present in the literature and city examples, and the four principles of the justice framework presented in this thesis. The frequency of the eight sub-themes was catalogued from the distinct coded comments, many of which raised multiple sub-themes. Then through a reanalysis of the literature on climate justice and the examples from other cities, any concepts corresponding to an interview theme were paraphrased and grouped with the relevant theme. Summarized comments are used as illustrative examples.

The reader should note that while the interviews provide a wealth of relevant primary qualitative data, interview questions were not framed specifically for this thesis. They were

conducted with the intent of crafting recommendations for the Boston City Council. As such, this thesis can only provide an early but admittedly secondhand snapshot of local sentiment on what it means to be a climate just city; there is still much more qualitative research to be done.

II. Themes from the Data Analysis

Instead of directly reporting the frustrations, concerns, ideas and suggestions for action conveyed by the interviewees, this analysis sought to uncover the higher-level, structural themes that recurred across the interviews and policy areas. An example of such a comment being community members' feeling like they had to educate themselves on climate change and did not receive adequate resources from the city. The structural issue underlying what this frustration implies is summarized instead; namely that many community members feel that the city is individualizing the responsibility to adapt to climate change. This ties in to the multiscalar nature of both climate injustice and climate action as described in the literature.

There are three major structural themes present in the interviews, city case studies and the academic literature: 1) issues of scale and object focus; 2) the use of framing and language; and 3) employing the principles of climate justice. The three meta-themes are divided into eight smaller and more specific structural themes of spatial scale, object focus, framing, language, and the four principles of the climate justice framework presented in this thesis: distributive, procedural, reparative and transformative. Within these eight sub-themes are specific categories and these will be described in detail in this section. Figure 8 below provides a visual overview of the relationship between the structural themes and categories. Figure 9 summarizes how often each sub-theme was raised in the interviews. It is clear from the data that the three themes most on interviewee's minds are how the city frames climate action, and their concerns or ideas related to achieving procedural and transformative justice.

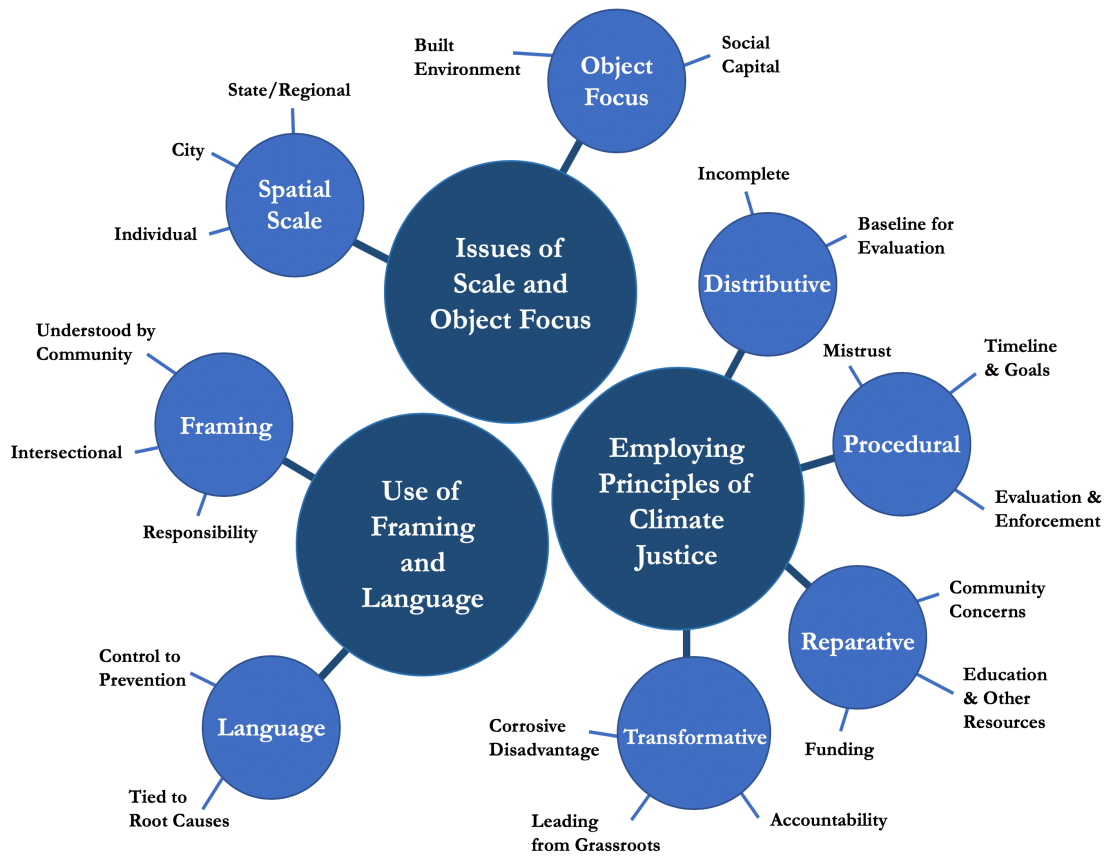


Figure 8: The relationships between structural themes and categories from the data. Source: Christina Schlegel.

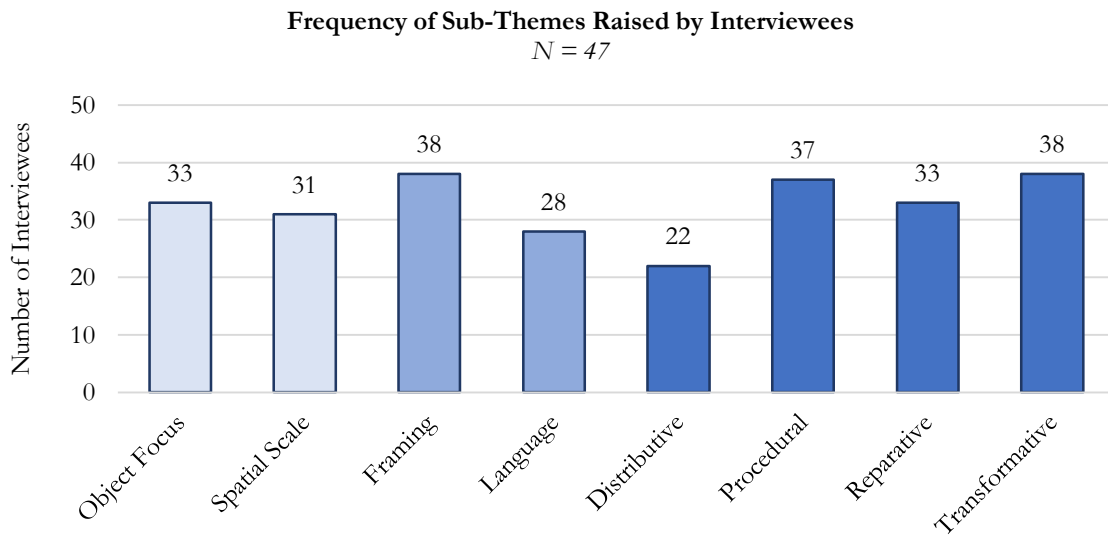


Figure 9: The frequency of the eight structural sub-themes present across 47 interviews. Source: Christina Schlegel.

I. Issues of Scale and Object Focus

Spatial Scale

Municipal climate action plans primarily focus at the city scale while historically, environmental justice research and activism have taken place at the community scale. But this often single-scale analysis of urban climate adaptation or environmental justice obfuscates the intrinsically multiscale nature of the causes of climate injustice and the fact that the response must also be multiscale. This is because the effects of climate change and injustice cuts across scales, and by not addressing one scale an analysis can hide its effect on other scales. A multiscale response would better illuminate the “accumulative” processes of justice and injustice that interact and build on each other as described by Barrett (2013). The interviews and city examples coalesced around three different scales: that of the individual, the city/community scale, and the state/regional scale.

Concerns and comments on the multiscale nature of climate justice were raised in 31 interviews. Interviewees expressed a sophisticated understanding of the state’s and region’s roles in just climate action. They also revealed frustrations with how the state scale limits independent city actions. Being subject to larger scales can be used as an excuse by the city for not making bold proposals. Advocating for updated state legislation, regulation and municipal coordination was seen by many interviewees as something the city was not doing well. Interviewees that discussed energy use and building practices noted that the state of Massachusetts, and not the city, is where energy and building codes are set. The City of Boston may amend its zoning and building policies to alter how dense a certain neighborhood may be or how much affordable housing must be built, but environmental building standards are the purview of the state. Likewise, the city requires large and medium sized businesses to report their annual energy and water use to the city, but the power to set stricter building energy standards lies with the state. Other interviewees noted that while they wish

to see greenhouse gas emissions from electricity use in the city decrease, ISO-New England, the region's electricity transmission organization, is described as focused on cost and reliability.

Notwithstanding the state's regulatory authority, interviewees argued that the city could use its power as the state's primary tax base to put pressure on state government to act. The state controls public transportation in the city and greater Boston area, but as one interviewee argued, the city should have a say in how transit dollars are spent since transit improvements are sorely needed and are tied to housing affordability and access to jobs. Another expressed concern that the city's and state's emergency evacuation plans did not match up, and wanted to know who was in charge and if there was any governmental coordination. Others expressed a wish that the city be more transparent about what it can and cannot control and take a strategic leadership position to advocate for change on regional issues of inequity and climate change.

Four interviewees also commented on the lack of coordinated effort between municipalities regionally around climate action when, for example, sea level rise will affect all of Massachusetts coastal towns and a regional response would help ensure resiliency for all those affected. For the regional initiatives that do exist, it is harder for smaller municipalities with less capacity to participate, even though they were described as being able to benefit from the expertise and capacity of their larger counterparts. Enhanced regional coordination would also be in line with Boston's 2014 Climate Action Plan which called for convening a climate preparedness summit and better coordinating metro-Boston cities and towns.

Cities are seemingly a natural scale to focus efforts for climate justice, but it is also cities and their institutions that helped create and exacerbate certain urban injustices in the first place through the unequal distribution of land, housing and infrastructure (Soja 2010; Gould, Pellow and Schnaiberg, 2008). There is an inherent tension between a city's potential leadership on climate action and its past policies of marginalization. In Boston, this tension is reflected most clearly in the

widespread mistrust and unhappiness with the city's proposals to address climate change. Sixteen community interviewees, about half, explicitly stated the city's priorities when it came to climate action were too pro-development and that the city branding of sustainability focused heavily on large institutions, new construction and big business. As a result, sustainability did not appropriately include existing residents and small businesses into the planning process or identify more grassroots solutions. The rush to encourage development by the city, even if it is purportedly climate-conscious, was considered to be an injustice. Development priorities fail to fully anticipate the climate justice implications of new construction, its impact on gentrification, an overburdened transportation system, and the resulting increases in pollution and energy use. The city's development approach is considered as conflicting with carbon neutrality by 2050.

Interviewees expressed varying levels of support for other actions the city had already taken. These included more environmentally friendly ordinances and the city's recent Resilience Strategy for racial equity, with some expressing hope and enthusiasm that the Resilience Strategy marked a new chapter for Boston. Others dismissed these ordinances and the Strategy as ineffective, or only be impactful if the mayor's administration truly decided to make them a priority. Some of this tepid support can be understood as informed by community member's experiences with the lack of communication between city departments. Departmental siloing has resulted in differing, and at times conflicting, messages regarding the city's priorities. A message juxtaposition elevated by interviewees was that the city's climate action plans have come during a time of unprecedented luxury development in many neighborhoods, particularly the Seaport. The Seaport District is a low-lying, coastal neighborhood and also one of the whitest. Other interviewees were more understanding of the lack of interdepartmental communication, noting that smaller departments like the Environment Department had no control over larger ones. Communication is described as informal, but it is a sign that the city was evolving to recognize the intersectionality of issues.

Twelve community interviewees expressed hope around the potential of the city being a partner to local and neighborhood-based community organizations and spoke of the responsive, community-centered vision of particular individuals within City Hall. Three experts and three city officials also envisioned the city playing a more active partnership role. Springfield's experience in developing its "Strong, Healthy and Just" climate action plan is an example of how community pressure helped drive the city's commitment to enacting the Principles of Environmental Justice and the substantive, paid partnership role many local organizations play. Interviewees noted the city is exploring collaboration across scales through its partnership with a grassroots East Boston organization to conduct outreach. A few interviewees brought up the city's Climate Ready Boston Leaders program, but in a measured manner. Leaders are provided some resources, including \$200 for hosting events. But these funds were not considered to be enough to adequately train others. City councilors and certain employees in the Environment, Energy and Open Space Department or the Mayor's Office of Resilience and Racial Equity (MORRE) are regarded as thought leaders and carried interviewee's hopes that change was possible from inside the walls of Boston's City Hall. Sometimes, this hope was tempered by the acknowledgement that Boston's municipal structure is a strong-mayor system, meaning any city official's power was more one of persuasion and pressure.

Lastly, the interviews touched on the individual scale of injustice and climate action, noting two particular concerns. First, framing the responsibility to act as a personal one individualized the problem of climate injustice. Second, a productive approach to local climate action needs to provide ways for individuals to participate in collective decision-making and implementation. This type of community-based action is promoted by cities in the Global South. It provides for more meaningful community participation and agency in the planning process so that systemic drivers of vulnerability are addressed (Anguelovski et al. 2016). Eight community interviewees voiced their dissatisfaction with the city's approach which assumed individual residents had a responsibility to educate

themselves on the matter (and that residents would have the time to do so). Interviewees had mixed responses to trainings on how to create family emergency kits and other individualized resiliency actions, such as the promotion of home energy assessments. Some saw trainings as beneficial while others viewed individualized actions as less impactful than larger, bolder efforts.

Object Focus

Feedback related to object focus surfaced in 33 interviews. Interviewees familiar with Boston's many plans and initiatives voiced a desire to see the city's focus shift from a detailed inventory of the built infrastructure and its vulnerabilities to a holistic perspective that considers the vulnerability and resiliency of community networks, local centers, group social capital, and other human and relational elements. This perspective often echoes climate adaptation alliances present in the Global South, which are collectivist and where community-government coalitions engage in urban planning (Anguelovski et al. 2016).

Interviewees knowledgeable about the city's engagement around past climate action plans commented on the heavy influence of the real estate and construction industries in the city's policy approach to climate change, where impacts were measured in buildings and dollars. The city's powerful waterfront partners play a prominent role that shifts focus towards the city's rapidly developing coastline and away from established inland neighborhoods. Community-based activists called out the development focus for allowing an unprecedented development boom that is encroaching on existing neighborhoods (for example, the growth of Harvard University into major sections of Allston) and which allows precariously located towers to be lauded as major contributors to the city's economic development. While a focus on the built environment was considered a necessary aspect of climate planning, the current approach is seen as incomplete because it fails to sufficiently address the equity concerns of existing and future development, especially how growth of the built environment impacts racial and socioeconomic diversity.

In European cities and in the Global South, noted an interviewee, it is considered common sense to integrate social justice concerns into planning for climate change. Interviewees from 20 organizations within the city, two city officials, and half of experts interviewed emphasized that social resiliency and community empowerment should become central to Boston's climate actions. Comments centered on the need for a greater sharing of resources, most importantly information on climate impacts and actions.

Given the complexities of the issues surrounding climate justice, focusing on any single scale or object is ultimately too limiting (McKendry 2016). The interviewees showed an understanding and desire that actors at multiple scales be engaged in creating a climate just city, and that the city use its political pressure to manage up to the regional and state level while using its resources and wealth to empower the community level. Interviewees also stressed the need to broaden the city's approach beyond the built environment to promoting social capital. Among the interviews, an overwhelming majority (40 interviewees) supported tackling structural and institutional problems, such as climate resiliency measures connected to the city's rapid development, gentrification pressures, growing health disparities and public transit inequality.

II. The Use of Framing and Language

Frames and language can either be used to highlight the truly intersectional nature of climate justice issues and the possibility of transformative action, or it can be used to narrow the scope of action to something more neutral and devoid of a power analysis. The framing of action was a particularly important issue to the interviewees. While many acknowledged the city's climate action framing had broadened from 2007 when climate action largely referred to emissions reductions, interviewees saw opportunities for the city's current framing to be improved so that it was better understood and relevant to the community, more explicitly intersectional, and clearly acknowledged

the city's responsibilities to act. Adopting these frames would indicate the city is moving away from a primarily "problem control" view towards one of problem prevention by thoughtfully crafting actions that addressed the root causes of injustice. It is clear from the academic literature that such a shift in intention is often reflected in the language used to describe policies and plans: terms like "equality" and "resilience" are dropped in favor of solutions that are "equitable" and "just."

Framing

Thirty-eight interviewees envisioned a new urban frame for climate action that clearly related climate change to the lived experiences of people of color and working-class families. Interviewees expressed chagrin at the temporal gap between their immediate concerns – the high cost of rent, rise in asthma rates, growing energy prices, the lack of services during summer heat, access to transportation, the quality of school lunches – and the climate impacts they understood would affect them in the future. One person commented that caring about climate change is a privilege when facing the daily challenge of meeting basic needs. Similarly, others shared that they were relatively unsure what the city was doing to mitigate climate impacts in their community because public presentations made by professional consultants focused heavily on the science and built environment, leaving them wondering what the next steps in their community would be.

Interviewees from inside and outside city hall and across multiple issue areas stressed the need for a more understandable frame. Fifteen interviewees described climate change as too broad of a frame by itself. How does the city's climate work connect to the daily concerns of residents? A locally-competent framing takes an intersectional approach to climate change and justice. Among community activists interviewed it was commonly considered self-evident that their work was intersectional, and that programs and policies in one issue area would have ripple effects in others. Some residents living on savings in uninsulated triple-deckers during the winter of 2014-15 were negatively affected by the high price of heat during the severe winter. It precipitated financial

instability: they were unable to pay both high heat and rent costs and were forced to choose between possible eviction and keeping warm. Others commented on the unreliability of public transportation and how unsafe they felt biking, causing them to drive to work which increased congestion and pollution. Climate impacts and climate actions, interviewees suggested, should be seen similarly as part of a web of interconnected public services and issues that intimately tied to one another.

According to 14 community interviewees and three city employees, the siloing of departments and messaging within City Hall filtered into how solutions were presented to the community and determined who was engaged. Bold new housing projects were divorced from their impacts on public transportation and wider community benefits such as additional city services or greenspaces. A common refrain from interviewees was that climate activists who had read the city's action plans came to meetings, but particularly vulnerable residents did not. While the city maintained an environmental frame for its climate actions, community organizations were already using economic- and social justice frames. A few interviewees suggested the city seek to close the knowledge gap pertaining to the impacts of climate change through creative projects for youth in Boston's public schools as a way to engage the next generation in addition to an explicitly intersectional approach to future plans and projects.

Framing also affects who is seen as having the responsibility to act. Boston's plans have been inconsistent in this regard. Past plans have primarily presented solutions as suggestions. However, MORRE's recent Resilience Strategy not only presented a timeframe for each initiative but listed the city department responsible for implementation (and some listed neighborhood partners). Some interviewees felt the trend in city planning was to create beautifully designed and researched plans that were light on implementation details and would ultimately "sit on a shelf gathering dust".

Climate framing that did not connect with people's lived experiences or the heavy focus on problem description (not implementation) were issues raised by every one of the 31 community

interviewees as reasons their community members could not maintain interest in what the city was doing around climate change. Less than half of the interviewees within city hall expressed the same view. Suggestions included that the city first engage with communities to define what was important, extend participation beyond the planning stage, and to be specific about any implementation strategy. Among interviewees that had previously participated in climate planning processes, many were disappointed and confused by the lack of follow up. Where was the plan now, what was its status? What was the city doing in their neighborhood? Some of this has begun to take place. Figure 10 below is a snapshot of the Climate Ready Boston Tool launched in 2018. It bears similarity to Portland’s plan updates in that it tracks progress towards initiative completion.

LAYER 3: PROTECTED SHORES

[Strategy 4: Develop local climate resilience plans to coordinate adaptation efforts.](#)

INITIATIVE	STATUS	PROGRESS
4.1: Develop local climate resilience plans in vulnerable areas to support district-scale climate adaptation.	IN PROGRESS	The Environment Department completed the “ Coastal Resilience Solutions for South Boston ” report, and will begin the Downtown and Dorchester plan in 2019. The Parks Department (Parks) is continuing the Moakley Park Vision Plan , which is expected to be complete in 2019.
4.2: Establish local climate resilience committees to serve as long-term community partners for climate adaptation.	IN PROGRESS	Greenovate Boston is continuing community education programs through Greenovate Leaders, Greenovate Ambassadors, and Greenovate Youth to empower citizens to take climate action.

Figure 10: A snapshot of the Climate Ready Boston Progress tool, last updated February 2019. Source: https://www.boston.gov/sites/default/files/imce/uploads/2019-02/crb_progress_pdf_for_website_feb_2019.pdf

Language

Out of 47 interviews, 28 raised concerns regarding the city’s climate action language, in particular, how language represents intention. A shift in language towards addressing systemic and institutional inequalities intrinsically demands an entirely new approach to problem solving. One interviewee who was familiar with the Boston’s processes for project identification pointed out that since municipalities need identifiable project parameters, it is often the more complex, entrenched

issues that do not get addressed. A critical shift in municipal climate action is the acknowledgement of how language represents intention, indicated by a shift away from relatively neutral resilience language towards language that connects actions to the root causes of injustice (and the city's role in creating or perpetuating these injustices). Terms like "justice" and "equity" have been used interchangeably in climate planning (Ikeme 2003) but are profoundly different approaches.

The climate action plans of Boulder, Portland and Springfield embody stages of this transformation. Boulder's Just Transition Collaborative helped the city to adopt a grassroots just transition approach to its energy systems, one that emphasizes economic and social justice. The city's Climate Commitment ties a just energy transition to a living wage, green jobs, utility affordability and the building of community leadership capabilities. Portland organized its efforts to enhance equity into categories very similar to the climate justice framework presented here: procedural, distributional and structural. The City of Springfield, with political pressure from an organized community, has adopted the language of climate justice. The city's Climate Justice Commitment acknowledges that a responsible and rapid transition to a just future economy will be one that develops green jobs, empowers community organizations and, "integrates into our political and economic structure the people who until now have been marginalized and under-served."¹⁹³

Interviewees expressed a desire to see a similarly explicit reparative justice frame in Boston which acknowledged how city institutions and policies had "taken from the community" as it developed into the world class metropolis it is today. Two interviewees felt that MORRE's Resilience Strategy should be celebrated and used a model. A couple of interviewees raised the idea of instituting mandatory social equity and environmental justice training for city employees or formulating equity toolkits with the community for departments to use in implementing their programs. Divesting city pensions from fossil fuels was used as an example because it touched on the structural issues of energy and health injustice. Interviewees suggested the city's economic

development and climate strategies be tied to equitable, locally informed outcomes or be tied to the movement for a just transition. What was needed was a bolder framework of community empowerment that addressed structural injustices.

III. Employing the Principles of Climate Justice

The final overarching theme speaks to the different manifestations of injustice and how Boston can employ a holistic framework encompassing the four principles of distributive, procedural, reparative and transformative justice – to appropriately improve environmental and socioeconomic outcomes for all its residents. Many comments illustrated an implicit or explicit desire to go beyond a primarily distributive and procedural justice frame. Meaningful changes were expected in the city’s intentions and framing of climate actions towards something explicitly reparative, transformative, and intersectional. In particular, this meant addressing issues of corrosive disadvantage, responding to community concerns, and clarifying the city’s responsibility to take action. For justice to be fully actualized, processes and solutions require that people are given tools for self-empowerment: the capabilities, or access to resources and opportunities that empower them to overcome marginalization (Amartya Sen 2009, Schlosberg 2012, Walker and Day 2012). Interviewees felt that operationalizing this kind of reparative self-empowerment could be achieved through substantive participation during policy implementation, better access to funding, climate education and other forms of technical assistance.

Distributive Justice

Distributive justice provides an incomplete understanding of true justice. The literature acknowledges that urban decisions intended to fairly distribute responsibilities and resources in the past had a tendency to perpetuate existing inequalities, not least because decisions were made in elite echo chambers with city halls (Bulkeley et al. 2014). Out of 47 interviews, 22 raised explicit

distributive justice concerns. Boston-area interviewees shared their lived experiences of existing distributive injustices that remained unresolved. Sea level rise and coastal flooding threaten low-lying fuel tanks that are built in EJ neighborhoods. Other communities had tried for years to get government to address the health hazards posed by PCBs and E. coli in the Neponset River. Inland interviewees spoke of food insecurity during extreme weather events. 13 interviewees remarked on the impacts of extreme heat and cold on the vulnerable, particularly those without proper air conditioning and insulation, noting that access to Renew Boston and other energy efficiency improvements were limited because of language barriers and building prerequisites. Someone openly wondered what Boston had learned from the Katrina and Sandy disasters. The overarching sentiment was that the city had long been concerned with hard infrastructure measures such as seawalls to protect city assets but had neglected to analyze the non-physical resiliency needs in all neighborhoods of the city, particularly EJ communities.

Assessment of these distributional injustices has been used by other cities as an evaluative tool to set baseline measures to inform future actions. The City of Seattle's Environmental Equity Assessment Pilot helps both the public and policymakers visualize how neighborhood indicators such as homeownership, employment, race and income interact with environmental benefits and hazards. The city's Racial Equity Toolkit is an assessment process for evaluating the impacts of development, policy and budget choices given these existing injustices. In Massachusetts, the City of Springfield has partnered with academics to create a set of cumulative vulnerability maps and neighborhood-appropriate climate metrics. These steps are supported by the academic literature on urban climate justice which indicates that equity is best achieved through comprehensive approaches that address the needs of the most marginalized (Svara, Watt and Takai, 2015). This is because a community-informed understanding and mapping of vulnerability gives a certain amount of control over risk prioritization back to the community (Schlosberg 2012).

To Boston's credit, Climate Ready Boston presented an in-depth look at demographic vulnerability across the city. This was a necessary step towards just outcomes, and interviewees felt that the city could expand its baseline data to evaluate injustice in terms of access to food, efficient transportation, affordable housing and energy, and a clean environment. Access to city resources such as city information, assistance and funding is also crucial. Twenty-two community interviewees wanted information on how analyses and plans already completed are influencing city policy. How is Boston institutionalizing a justice framework in deciding how to act? What are its best practices?

Procedural Justice

Procedural justice entails true, prolonged engagement with substantive follow through (Bulkeley 2013). And in Boston, there is an overwhelming desire to be heard. Thirty-seven interviewees spoke of procedural injustices or put forth models and ideas for improving procedural justice. Among 16 interviewees who are active in grassroots struggles for justice, there is a feeling that the city is merely "checking off an engagement box" when it comes to their involvement. The city reaches out during (or even after) the policy formulation stage but then provides no follow up. Describing the redevelopment of a major road in the city, an interviewee noted that neighborhood involvement seemed unnecessary. After presenting the community with three street options, the community chose the option with the most tree coverage. Two options were subsequently taken off the table leaving the community to expect a new road with the least amount of tree coverage. Expert planning consultants were described as being "parachuted in" to deliver complex presentations at (rather than to) residents. Many wished they could find more information on climate actions, initiatives and contacts on the city's website. A few complained that they did not hear much from the Boston Planning and Development Agency (BPDA) or other non-environmental city departments, even though their roles in urban climate resilience were substantial.

This level of participation, which could arguably be called “tokenism” on Arnstein’s Ladder of Civic Participation, lent itself to a few individuals feeling their participation was only sought because outreach was a necessary requirement of a city planning grant. Participation was described as for show or “just for the grantors” by one interviewee. Another local activist described a feeling of invisibility wishing that her neighborhood “would show up on the city’s maps” (or in other words, that their local resiliency needs would be recognized). Inconsistent and incomplete outreach from the city is a main driver of widespread community mistrust. This view is fueling a negative feedback loop where a group or community that feels improperly engaged will seek to remedy the situation through direct action or public outcry, which could turn the situation into something confrontational. In order to build trust, a few interviewees recommended the city break down its decision-making silos through face-to-face relationships with community members.

Other interviewees had more positive experiences with Greenovate Boston and early climate action plans. Longtime activists spoke highly outreach for the 2011 climate action plan. The grant funded process was perceived by participants as a positive, substantive experience because it created mechanisms for truly local ideas to be captured in planning. Greenovate has until recently hosted a yearly Greenovate Summit, a type of climate fair where updates on the city’s plans would be discussed and where local experts, city officials and interested residents learn about each other’s local initiatives. Interviewees were generally supportive of Greenovate’s work, but framed the office as being underfunded and therefore unable to truly fulfill its outreach purpose. The city had a need for development - not of new luxury condominiums, but of grassroots relationships.

Building on a baseline evaluation of distributive injustices could be the city’s strategy for implementing and addressing climate impacts and community concerns. A frustration conveyed by 24 interviewees, even a few within city hall, was the lack of action or plan specificity. What is the timeline for implementation of both short and long-term projects? What are the concrete strategies

for reaching broad goals like carbon neutrality by 2050? Timeline and strategy are concerns other cities are also beginning to address, and are widely accepted by expert interviewees as among the hardest problems in addressing climate injustice. Boulder has laid out climate action commitments for each year from 2017 through 2020 (though it is not clear how they will be met). Portland and Boston have publicized updates on their plans which give some indication of whether a project is “in progress,” “complete,” or “not started,” with descriptions of any progress. Springfield is also wrestling with how to measure progress towards equity and implementation specificity.

Many of the interviewees acknowledged that coming up with a strategy, let alone the actual implementation of actions, are challenging endeavors. A couple felt there were too many plans, or that plans were too complex to follow and successfully implement. Instead of a long list of recommendations, interviewees were keen to see a strategy document or checklist that indicated what city was going to pursue and when. Comments reflected an interest that the city drill down to the next level of planning: who would be responsible for implementation? What actions were taking place this year, in the next five years? Ten interviewees, including two experts and even a city employee, connected a lack of plan specificity with a lack of political will to take bold action. They stressed that the political moment for local leadership is now.

Interviewees deemed it important that the city and community be able to evaluate the effectiveness of actions. Boston’s 2014 climate action plan proposed the city publish annual emissions data and progress updates on its tree planting, equity and climate preparedness targets. While some emissions data is available for municipal infrastructure and large privately-owned buildings through BERDO, the city does not publish progress on tree planting and equity. Boulder and Springfield are ahead of the game; they have resilience dashboards where residents can track city indicators such as housing, health, safety and zero waste and learn about initiatives in each issue area.

Some interviewees suggested the city draw on its wealth of local expertise by partnering with neighborhood groups, researchers and academics to independently evaluate progress. Over two-thirds of community interviewees spoke of the necessity to democratize access to city data and reports, particularly its progress towards stated city goals. Other ideas included an equity assessment, statement of principles, or policy screening toolkit that could be developed in coordination with community leaders. But relying on quantitative measures can give a false sense of accomplishment cautioned one interviewee, and so the city should be sure to supplement quantitative measures with qualitative community-driven evaluations to ensure the right needs are being met.

Reparative Justice

Reparative justice is focused on outcomes and embodies the corrective aim of returning communities to a state of well-being, rectifying the patterns of marginalization experienced by communities. In the literature, the provision of capabilities – access to opportunities and resources – is described as necessary to achieve justice (Schlosberg 2012, Walker and Day 2012). This is because the provision of resources is what allows individuals and communities to become full participants in designing their own future. In a nutshell, reparative justice is community empowerment. Participatory empowerment, financial empowerment, community climate education and access to resources were four emergent categories raised by interviewees as necessary to creating a just city.

Of 47 interviews, 33 raised aspects of reparative justice. For many activists and organizations, climate change is too big an issue to digest. Their constituents need something to be hopeful about that addresses their priorities. Where would they find supplies and shelter during extreme heat events? One of the interviewees had followed city evacuation signs but were troubled when it led them to a dead-end street, while another noted their evacuation routes flooded periodically. Who was monitoring and communicating evacuation routes? A few interviewees

expressed frustration with a city seen as “moving on” to the issue of climate when their organizations were still trying to meet daily needs.

Deep feelings of invisibility and marginalization on behalf of communities were summarized by one interviewee as a history the city needs to recognize in order to overcome. A similar conclusion was reached by Portland’s Equity Working Group. Equity work requires acknowledging the power dynamics between city departments, organizations and different neighborhoods and mending mistrust through the city providing technical, logistical and financial support. A few interviewees questioned whether the solutions presented in city plans and policies come from the community, from experts or big organizations, or are transplant ideas from other cities. They expressed a need for the city to put effort into reaching people beyond the easier-to-reach “same olds” because the city could not expect all interested parties to have the time and ability to come to city meetings. Given this lay of the land, interviewees argue that the city could make decision-making more accessible and create pathways for enhancing individual and community stability. Stipends, food, childcare and transportation to larger summits and city meetings; translating materials on city programs and plans; tools and funding to host climate events; training programs; and resources to build a more closely networked community were among the resources mentioned.

The way the city conducts its outreach is largely dependent on the funding earmarked for outreach and the participatory values of those in charge, whether it be consultants or officials from a city department. Interviewees felt that if the grassroots were able to participate more fully, the framing of climate action could be improved. Twelve community interviewees spoke of an inability to participate in decision making because events and meetings are held during the workday, located outside the neighborhood, do not include necessary services, or do not seem designed for engaging the community. Many languages are spoken in Boston and language access was described as a big barrier to effective education and participation. Providing transportation, childcare, food and

translation are among the services that would enable residents to take part. Recalling the outreach for Imagine Boston 2030, others suggested employing multiple avenues for engagement such as online feedback forums and community liaisons (in addition to meetings in the neighborhood). More importantly, the city can reframe its outreach from a discussion *to* the community in favor of a discussion *with* the community. Three interviewees suggested the city integrate its outreach on climate actions into existing neighborhood meetings and discussions to avoid planning fatigue.

Community agency also requires financial means. How can the city institutionalize financial support at the local level? In the west coast cities, funding has come from foundations and municipal taxes. The Seattle Foundation partnered with the city to launch an Environmental Justice Fund, which is a competitive grant process by Seattle's EJ Committee that provides between \$10,000 and \$40,000 to local justice-oriented nonprofits for community-led projects that align with the four goals of Seattle's Equity and Environment Agenda. Boulder is ahead of the game. For 12 years, the city has had a carbon tax that generates approximately \$1.8 million in revenue annually. The revenue is used to fund Boulder's climate plans and initiatives, and \$300,000 has been allocated for community solutions to reduce emissions and significantly increase solar installation across the city. It is a municipally controlled alternative to foundation-led funding.

Whereas climate action planning and projects in other Massachusetts cities like Somerville are funded entirely from the municipal operating budget, Boston's activities are partly funded with foundation grants, with additional grant funding when a new plan is being created. Five interviewees described the city's reliance on foundations as a concern; how committed was the city to climate action? One longtime environmentalist remarked that the city needed to wean itself off of the foundation model and put its own skin in the game. Another interviewee suggested the city earmark some of its Community Preservation Act revenue for EJ projects.

Capability is encompassed by a whole toolbox of resources, including knowledge about local climate impacts and initiatives. Technical expertise to realize complex projects is another tool, along with workforce training programs, to help residents become part of the just transition. The provision of legal and policy expertise for projects that require an understanding of state and local regulations is also needed. Among these, ensuring that residents and neighborhoods have a solid understanding of the causes and impacts of climate change is viewed as a priority.

This education could take many forms. Boston Public Schools has recently instituted a climate curriculum citywide. Schools are also seen as an ideal “testing ground” where students can experiment with solutions to local climate issues. City departments could host sustainable design training for residents in the construction trades or set up community preparedness training in each neighborhood. Interviewees also suggest that the city institutionalize a pathway for information to flow from communities to city government and vice versa, either through neighborhood liaisons focused on issues of social and environmental justice or through an online communication platform.

Making information on city programs and initiatives readily available, along with assistance on accessing resources for climate resiliency, was deemed vitally important by 25 community interviewees. Three experts felt the same. Interviewees offered a plethora of specific ideas regarding how the city could help empower communities. Some see the need for technical and workforce training to help individuals in the trades become part of the leading edge in green construction or renewable energy systems. The city could serve a networking function to connect hyper-local needs and abilities. For example, many Boston public schools do not have kitchens; school lunches consist of frozen food shipped in from out of state. Since there are numerous local farms and community gardens, the city could help bridge the farm-to-school gap. Or it could provide the support needed to build out a neighborhood network of emergency response centers and businesses. The need to grow capabilities will always be an integral part of achieving climate justice. Addressing these kinds

of local resource gaps allows individuals and groups to move beyond the issues that have oppressed them, because ultimately, enhancing community capabilities is about growing community power.

Transformative Justice

This final principle is essential for social, economic and political justice over the long term. A transformative and emancipatory approach to urban problems acknowledges and challenges the ways in which (systemic, institutional and even individual) patterns of injustice have held communities down for centuries and actively seeks to achieve freedom from oppression for communities and nature. This emancipation is achieved by reforming or dismantling systems, structures and processes that result in unjust outcomes through a conscious redistribution of power and resources back to communities. Administrations will change and policymakers and their plans will come and go, but if urban economic power and political agency are sufficiently decentralized and leaders are held to account, the city can more proactively mitigate climate change's effect as an "instigator of corrosive disadvantage."

Transformative justice can be seen as complementary to the other three principles by approaching justice from a preventative and power lens in contrast to the other principles which focus on restoring rights to marginalized communities. But it is also foundational. It illuminates structural processes that create cumulative inequities, thereby improving the efficacy of actions promoting reparative, procedural and distributive justice. This is supported by the data; 38 of 47 interviewees made comments or suggested actions that can be described as embodying aspects of transformative justice. The interviews uncovered three approaches to actualizing transformative justice: 1) ensuring communities are able to lead change from the grassroots; 2) creating transparent accountability mechanisms for municipal actors; and crucially, 3) prioritizing solutions that undermine the root causes of continuing injustice.

According to interviewees, addressing corrosive disadvantage in Boston means focusing first on daylighting deeply embedded issues of structural and institutional injustice so that climate change mitigation and adaptation measures sufficiently reparative. The majority of interviewees felt this could be actualized by changing the way in which the city communicates with its residents, which oftentimes is seen as an incomplete practice that further embeds urban inequality. Interviewees want the city to recognize the serious structural problems impacting the day to day lives of residents and be humble about its role in exacerbating these problems.

Like many urban areas, Boston has a long history of housing discrimination. Historical practices of redlining, racially motivated evictions and unequal infrastructure development have in large part been replaced with uncontrolled gentrification, low levels of affordable housing, low development standards, a lack of renter protections, and persistent issues with the housing stock that *is* affordable – including mold, low insulation, high heat costs, and leaded paint or pipes. Gentrification is the most widespread concern across many of Boston’s communities, including Roxbury, Allston/Brighton, Dorchester and Jamaica Plain. But others include high energy costs and rapid development, access to city services and amenities, neighborhood health, and public transportation. Interviewees working in EJ communities spoke of the dual injustice of the high cost of energy for low-income residents (which has serious health and financial impacts) to the illogic of building luxury high-rise buildings requiring entirely new fossil fuel infrastructure.

The concerns raised by interviewees exemplified how they saw current planning as a potential tool for addressing longstanding issues of discrimination, but also revealed their hesitancy to trust local government to do the right thing. If the city was considering a higher mix of renewables in its electricity purchasing, why does it continue to allow natural gas infrastructure that contributes to climate change, the cost of which is displaced onto existing gas customers? If the city and state wanted to add bus routes where the city had originally promised rapid transit rail, any work

done should address the extent of users' concerns, which is not always access, but often reliability. In addition to structural issues there are institutional ones. How can the city ensure housing and land affordability when the agency in charge – the BPDA – is a quasi-public agency whose budget relies in part on the sale and development of city land and has a long, storied history of corruption? Why are individuals within City Hall arguing against renewable energy by asserting that it is unfair and expensive to low-income residents when area experts repeatedly show this is a misleading argument?

Cumulatively these manifestations of systemic, institutional and political injustice amount to a continued extraction of wealth from the city's marginalized residents, and fundamentally impact the future capacity of communities of color and working class communities to respond to climate change. Time and again, when interviewees were asked what the city could do to better address the unequal impacts of climate injustice they would describe the problems they see every day. To do so, the city will need to refocus its traditional approach to planning and policymaking to encompass the issues and people that are either so complex or so invisible that they fall through the cracks.

For climate action to be transformative, it requires concrete leadership, accountability, and ultimately, commitment to transforming complex and embedded structures, systems and institutions that do not create equitable outcomes. Twenty-four interviewees shared views that described the city not as in “implementation mode”, but rather on an endless Mobius strip of planning and re-planning that showed a lack of understanding how this process itself was unjust. Officials talked about needing to address climate change while the city's plans detailed interesting “potential” initiatives. But there is often no follow up or follow through, leaving interviewees and the communities they represent without information on next steps, let alone which actors would be responsible for those next steps. Some expressed exasperation at the idea of spending more energy actively trying to get answers or pressuring city officials and departments, when what they want to see is a clear initiative

to pursuing a specific strategy from their local government. Twelve interviewees spoke of the necessity of transparent and enforceable metrics to institutionalize taking action.

Collective action was generally favored over individual responsibilities and there was widespread support from the interviewees for interventions and opportunities that develop new community partnerships with the city. Different organizations proposed the idea that the city decentralize its decision-making and implementation processes by providing community groups the tools to address the climate impacts most relevant to them. Others wished the city would evolve its viewpoint from one that saw residents in terms of their passive vulnerability to viewing neighborhoods, small businesses and groups as local nodes of community resilience and expertise. One interviewee expressed a desire to see something similar to Springfield's grassroots Climate Justice Coalition exist in Boston - cultivated with support from the city.

In the eyes of community activists, the city still relies too heavily on voluntary checklists, guidelines, resolutions, and policies that did not mandate a change in business as usual but rather "nudged" developers and departments take pro-environmental and pro-community actions. This was described as reaching only for the low-hanging fruit. Interviewees concerned with the effect of gentrification on their neighborhoods feel that the city had much more power than it was currently wielding to require more holistic, sustainable development. One interviewee mourned the fact the city and community leaders had co-created a visionary bike infrastructure plan in 2013 but that implementation of its recommendations had not yet begun. In fact, some bike safety programs have since ended. These are problems not unique to Boston. Springfield previously had neighborhood councils that served as an accountability check on the city. They no longer exist. Local activists in Springfield also recently threatened to pull their support of the upcoming climate action plan if it did not include an implementation strategy.

Six interviewees explicitly laid the responsibility of leadership at the mayor's feet. Since Boston had a strong-mayor governance structure, if he or she did not care, who would? Successive mayoral administrations often have different priorities; plans released under one administration are not necessarily going to be upheld or implemented by the next. Other interviewees did not necessarily see the mayor or city departments as the ultimate actors when it came to addressing climate change. Instead, leadership and responsibility could and should be shared with community leaders willing to step into those roles. One interviewee suggested the city familiarize itself with the landscape of local leaders and provide funding and resources to those willing to play such a role. Many others offered similar comments, asserting that there was a high level of local interest in taking on leadership or partnership roles, provided they are given suitable resources (technical, financial, educational) from city government or funders. Decentralized leadership is a necessary aspect of holding municipal leaders to account.

Finally, transformative justice encompasses the ability of communities to, in the words of the late EJ activist Dana Alston, "speak and act for themselves"¹⁹⁴ and lead change from the grassroots. This is an organizing approach from the EJ movement where direct participation in problem and solution identification is framed as a way to break down the systemic barriers imposed on vulnerable communities (Faber 2008). A decentralization of power would only be useful if it implemented and incorporated local actions and feedback into the larger city scale. Springfield's organizations organically coalesced into a grassroots coalition, but in Seattle and Portland community participation was institutionalized through structural change. The mayor of Seattle appointed sixteen community leaders to form a Community Partners Steering Committee who lifted up community experiences and ensured the city's climate action plan was viewed through the lenses of racial, social and economic equity. Portland's Equity Working Group became a vocal and assertive participant in city planning. The Group created its own set of equity considerations and put forth strategies for city-

community partnership. Boston-area interviewees suggested various structures to encourage grassroots leadership: issue-area working groups, online participation opportunities, standing committees that had resident and neighborhood representation, workshops, and reshaping Greenovate as an event to promote two-way discussions between the city and community.

Twenty-nine community organizations, three experts and four city officials shared a desire to see the city and its officials support local projects and contextualize these local actions as a way to meet larger city goals. They expressed enthusiasm for municipal support of projects of varying size at the neighborhood level through community grants, participatory budgeting, a dedicated virtual or physical space for organizations to connect, and technical or educational support from city experts to fill any resource gaps. A couple interviewees raised the idea of the city fostering small business and organizational networks by creating physical or virtual convening spaces and through technical and logistical assistance. Other bold ideas included yearly grants from the city that could be used as initial capital investments for projects like district-scale solar or expanding neighborhood food supply chains. Awards for builders that design to meet net zero or Passive House standards would show the city supported environmentally sound design.

Others envisioned more extensive transformations which fundamentally reorganized municipal systems and resource allocation. A few raised the idea of restructuring departments including the Environment Department to be more explicitly intersectional and reforming the BPDA so that it would come under city control and be more accountable to the people. Three interviewees saw municipally owned resources, like electric utilities, as a way to address two issues at once. Expanding public control ensured the utility had greater responsibility to its customers and gave residents power in decision making while increasing the city's use of renewable energy.

There were also financial means for instituting fundamental change. City departments could contract out an increasing percentage of work to small businesses and community organizations for

social and environmental services rendered. Some interviewees went further and suggested that the city offer financial support for participation in city policymaking similar to Portland's Equity Working Group. A couple interviewees suggested instituting participatory funding to support various campaigns and projects proposed by local groups and small businesses. One interviewee suggested that if there are many projects, it could be turned into a citywide competition where the public would cast votes on the projects they wanted to see implemented.

These solutions are proactive and possible. Seattle's Equity and Environment Agenda explicitly calls for fostering community networks and supporting local environmental justice leadership and collaboration. Through a partner foundation, Seattle already awards grants of \$10,000 to \$40,000 to realize the implementation of local, sustainable projects. And participatory budgeting is not a radical idea. In fact, Boston has been doing it for many years through its "Youth Lead the Change" budgeting process, which gives youth ages 15-25 a say how the city will spend \$1 million dollars by voting for their favorite project.¹⁹⁵ Such solutions serve to reconnect local government with the people and mirror collectivist climate actions happening in the Global South.

These ideas offer avenues to address many aspects of transformative justice. Echoed here are Schlosberg's (2013) and Malin's (2019) framing as justice as recognition, where historically excluded groups are brought into decision making and implementation processes as leaders with agency. Addressing the segregationist, classist and other histories of this city is essential to an intersectional understanding of climate justice described by Ranganathan and Bratman (2019), which sees the link between yesterday, today and tomorrow. But actions themselves do not ensure emancipation from system of oppression. That can only be achieved through a deeply institutionalized mentality that sees climate action as an opportunity to rehumanize marginalized groups and achieve freedom from injustice for nature and community through systems-level change.

Chapter 7: Takeaways

I. Major Interview Takeaways

Of 47 interviews, 31 were with community organization representatives, eight with city staff, and eight with planners, experts and academics. Interviewees from all three groups expressed shared concern for the eight major takeaways summarized in Figure 11 below.

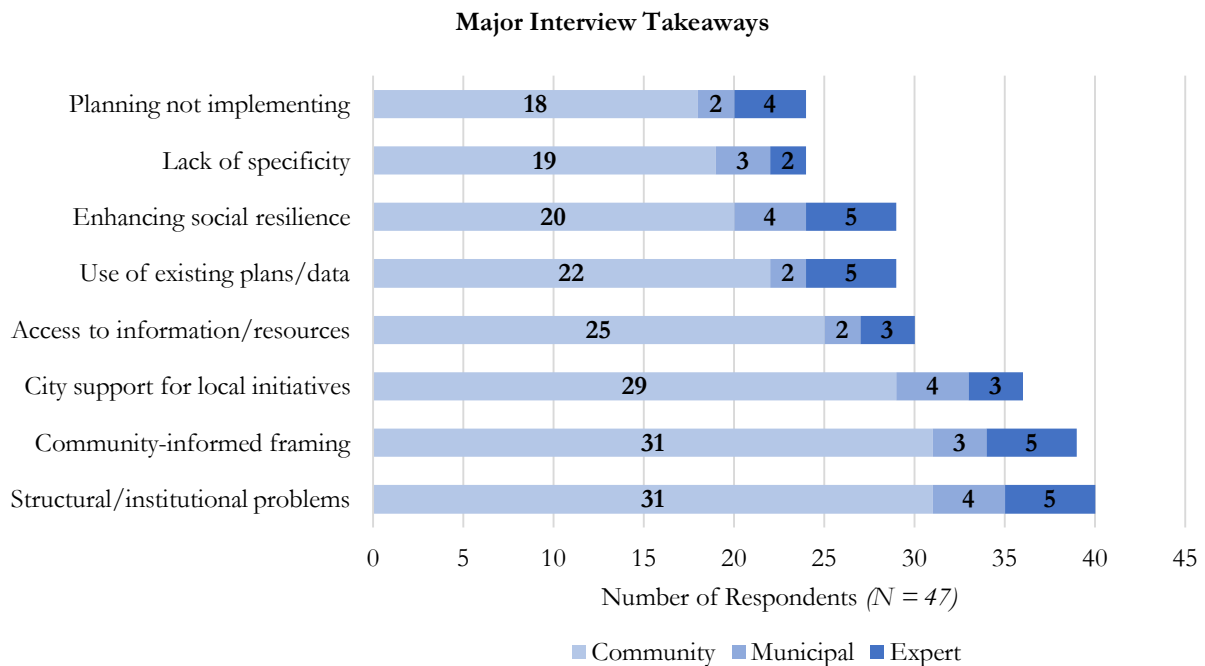


Figure 11: Eight major interview takeaways, categorized by interviewee type: community, municipal, expert. Source: Christina Schlegel.

It is significant that all 31 community interviewees saw municipal climate action as an opportunity to tackle structural and institutional problems and voiced concern that Boston's current climate action framing was not community-informed and did not adequately connect with people's lived experiences. Surprisingly, even a few individuals within city hall shared these views. Over three quarters of interviewees shared ideas for how the city could empower neighborhood and organizational-scale initiatives through various support mechanisms. Similarly, a fourth major takeaway was the widespread desire for data democratization so that small businesses, organizations and residents could have easier access to existing city programs, climate information and city data. A

common frustration from community groups and experts alike was not knowing how (or if) existing climate data and city plans – many of which have had significant community input – were influencing city policy and planning. Two thirds of community interviewees and most experts saw the need to expand the city’s built environment focus to an approach that encompassed strategies to improve social resilience. The final two takeaways speak to the same concern: the majority of interviewees wished to see a city that was more specific about what actions it was taking to protect their communities and critiqued the city for its lack of plan follow-through. The takeaways summarized below are detailed in Chapter 6.

II. Towards a More Climate Just City

The inherently intersectional and multiscalar nature of the quest for climate justice defies a simple and universal solution as any framework will be locally specific. Acknowledging these realities, what steps might the city take towards embodying a climate justice framework? In the research I conducted, six essential aspects emerged:

First, Boston can show a commitment to climate justice by meeting communities “where they are.” This means providing resources at a time and in a form that is appropriate for the community. The methods used to engage the public can institutionalize iterative community feedback on project implementation from the visioning stage through evaluation while describing how this feedback affects policy. Additional municipal resources would include funding and technical support for community-led climate projects.

Second, climate justice requires proactive efforts to build greater trust and two-way communication between the city, its departments, and the community. In Boston, many local organizations and activist residents are eager to engage with the city on climate resiliency through a justice lens but are wary of how seriously the city is committed to justice for vulnerable residents. Providing community leaders and their organizations with necessary information on neighborhood-

scale climate impacts and action implementation information is critical. These can be offered in different media and languages but should always be easily accessible and understandable.

Third, the city can further build community trust through a number of internal operational improvements. The most impactful changes include a commitment to setting specific goals, creating an implementation strategy and following through on proposed initiatives. This shift in the city's responsibility for taking action can be supported by smaller changes in institutional operations, including creating formal structures for cross-departmental communication and instituting employee training on racial, economic, social and environmental justice. Such actions would begin to move the city away from operating in planning and policy silos and toward consideration of the long-term and cross-disciplinary impacts of their day to day work.

Fourth, future city actions, processes and policies can tackle structural and institutional injustices, enhance social justice and build community power. This would require the city to broaden its climate work from an approach centered on distributional equity to an approach that embodies the principles of participator, reparative and transformative justice as well. By acknowledging its role in perpetuating injustice, by clearly defining its responsibility to take action and taking action in a way that redistributes resources and power to communities, Boston would be adopting a frame that takes the substantive actions desired by community members to dismantle cycles of oppression.

Fifth, effective local action tends to happen when the city's networks of grassroots organizations and activists are thriving. Other cities and interviewees alike have realized that a city that helps grow the power and collaboration potential of its local organizations is thereby building capacity for the city as a whole. This nurturing of grassroots agency increases community "capabilities," and empowers organizations to play a role in reaching municipal climate goals. This method of enhancing both reparative and transformative justice can take the form of longer-term partnerships, local contracting, municipal grants, or participatory budgeting for local initiatives.

Finally, locally-informed implementation strategies and metrics for evaluation are vital to moving forward. Among the cities that have moved towards a climate justice framework, moving from words on paper to implementation and evaluation remains a significant challenge. There must be a balancing of quantitative metrics with qualitative, community-based goals that can provide a more accurate picture of progress. Here in Boston interviewees were frustrated with the mismatch between community visions and current city actions. Incorporating neighborhood-scale initiatives and empowering residents, organizations and small businesses to help reach common goals would greatly expand who has the power and resources to take action on climate change.

III. Study Limitations & Areas for Future Exploration

Urban climate justice is a rapidly evolving area of study and its application will have far-reaching, systemic implications. As such, this thesis can only serve as one step in a larger and sustained dialogue between community residents, activists, local businesses, local and regional experts, departments and government officials. The views and assertions represented herein, while informed by conversations with city employees, experts, and community organizations, are informed also by my own experience of this city and my preconceptions of the problems it faces.

I was unable to reach groups in all neighborhoods of Boston. All research was conducted in English, I did not have the resources to conduct interviews or outreach in other languages. I made additional effort to seek out interviewees that would represent those neighborhoods that have historically been underrepresented. Despite my best efforts, I was unable to include voices from the neighborhoods of Charlestown, Hyde Park, Downtown, West Roxbury, South Boston and Fenway. As some interviewees have warned, talking about the future impacts of climate change may be a topic that is seemingly too far removed from their current social, ecological, and economic struggles to warrant engagement. Talking about climate justice comes with some inherent privilege – a

security that allows for contemplation of the future. It is important to keep this reality in mind when framing just climate action and deciding when, where, how and who to engage.

The field of urban climate justice is relatively new and underdeveloped. Given the inherently multi-scalar nature of climate injustices, one area for future research could explore how both urban injustices and climate actions are influenced by processes and systems beyond the city – including political (state and national policies) and socioeconomic (the globalization of culture and capitalism) systems. Such research could investigate how much both the impacts of climate change and municipal actions are dictated by processes beyond local control, and how other scales can either assist or impede local struggles for climate justice.

Another research area might seek to explore how urban climate justice is affected by local or grassroots organizing for justice. Is a strong, coherent network of justice-oriented organizations or motivated activists required for a city to move beyond an energy efficiency and emissions reduction frame to one of climate equity? Does local organizing for climate justice, environmental justice or other manifestations of justice precede municipal action? Is it this local pressure that drives a city to consider a justice and equity framework, and if so, what is the nature of this correlation?

Finally, future research could delve into how the more activist conception of climate justice as “system change not climate change” – which demands an overhaul of existing socioeconomic and political structures – can enhance, and yet, conflict with climate justice as defined by governments (which must necessarily play within certain political and economic structures, processes and rules).

IV. Conclusion

If Boston is to move more deliberately towards climate justice planning and policymaking, any actions taken must seriously consider some fundamental questions. *How* are these solutions created? *What* do they look like? *What* problems or inequities do they address and *how*? *Who* do these

solutions really serve? This last question is particularly critical to climate justice, as it requires decision makers to be conscious of who has the privilege to be part of the decision-making process. This city has a deep history of racial and social inequity, of deep-seated mistrust between residents, neighborhoods, and government. Through efforts such as the community planning process for the city's 2011 Climate Action Plan and offices such as Greenovate and MORRE, the city is actively seeking to engage issues of inequity. But it is also evident that more is possible – and desired.

Climate justice requires not only the just distribution of municipal resources and better access to decision making for disadvantaged groups, but also wrestling with history and deeply embedded systems that perpetuate various forms of oppression. Boston has already taken steps towards building a more just and resilient city through the Mayor's Office of Resilience and Racial Equity (MORRE) Boston's organizations, residents, activists and local businesses have already started aligning their work with the principles of climate justice. Interviewees spoke of a Just Transition, and neighborhood urban farming and community solar projects that were both environmentally sustainable and socially just. Others heralded progress in other cities, such as Seattle and Portland. The city's own understanding of the intersectionality of climate change and preexisting inequities has evolved significantly. But it is a challenging goal. There never will be a silver bullet solution.

If we were to boil down urban climate justice to its essence, two fundamental truths emerge. Climate justice demands more than “checking off a participation box.” It is a commitment to engagement and partnership that is accessible, particularly to the most marginalized among us. Climate justice requires that benefits be shared equitably, and that past harms is recognized and processes that seek to recreate vulnerability are reformed to restore power and capabilities back to neighborhoods and communities in a way that is truly emancipatory. Climate justice is about climate change, but more fundamentally it is about growing community power.

Appendices

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