An aerial photograph of a city model, likely Boston, showing a dense urban area with various colored building blocks (brown, grey, white, yellow, red). A large river flows through the upper portion of the image, with a long bridge crossing it. A green park area with a blue pond is visible in the center-right. The title text is overlaid on the left side of the image.

Climate Justice for the City of Boston: Visioning Policies and Processes

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City of Boston



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I wish to express my gratitude to Councilor Wu's interns who assisted me on this endeavor. Thank you to Gabriella Germanos of Harvard University and Katherine Susich of Boston Latin School - and a big thank you to John O'Brien of Boston University - for their time spent researching the climate action plans of other cities, helping to digest Boston's many own plans, and for working with me to identify the key organizations, city officials, academics, and activists interviewed for this report. A special thanks is offered to all the interviewees for your valuable time, thoughtfulness, frankness, and important ideas and information that you shared with me. Your input taught me so much about the challenges and the promise of the city we all call home.

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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.”

- James Svara, Tanya Watt and Katherine Takai¹

Climate change is not coming – it is here. We are entering an era where the effects of climate change are already being felt in profound ways. In Boston, sea levels are rising three to four times faster than the global average.² An unusually large fluctuation 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 – almost a fourth of the state (including Boston) was listed as experiencing an extreme drought.⁴ Globally, 2017 is predicted to be the second hottest year on record (with 2016 being the hottest and 2015 now bumped to third hottest).⁵

On top of the scientific projections and the lived experiences of a changing climate, the Federal government’s stance has turned to one that questions the science - or at times denies it outright. The critical moment has come for local and state government to fill this political void. Thankfully, many cities have already stepped into climate leadership roles. Since 2007, the City of Boston has been publicly committed to taking action on climate change, particularly through emissions reductions. And yet, as many cities have come to understand, climate change mitigation and adaptation are not actions that lend themselves easily to a departmental silo, but form a

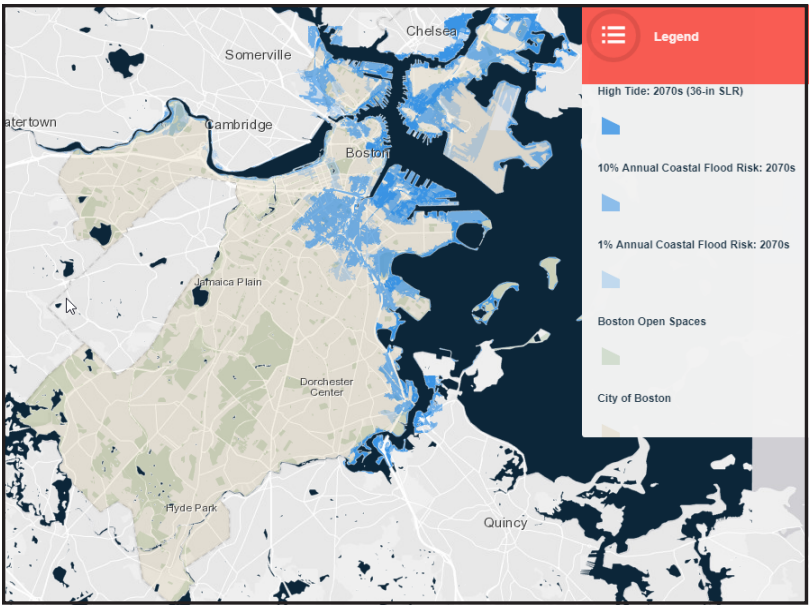
cross-cutting lens through which all city action should be seen.

As local governments plan for climate change, they must also consciously consider the ways in which their climate change plans, policies and processes can unintentionally exacerbate existing environmental hazards and social, political, and economic inequalities in the city. 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 what a city will do 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 – and will ultimately affect the long-term prosperity and sustainability of a city.

This report provides a brief overview of what future climate projections warn for Boston and its neighborhoods, the current status of Boston’s climate activities, and what social and economic vulnerabilities already exist in the city and how these inequities could be exacerbated if climate planning is not done in a thoughtful, long-term and inclusive way. It will detail the grassroots origins of climate justice as an issue, and how it is now expressed using three main principles: procedural justice, distributive justice, and just recognition. Crafting ideas and recommendations for how the city could approach climate change - while addressing existing inequities and creating a more just future – demands that the voices of vulnerable residents and communities are heard to illuminate their present-day concerns and desires for a more prosperous and equitable future. This report therefore presents the concerns and ideas collected from 47 interviews, with particular focus on 31 interviews with Boston-area community organizations.

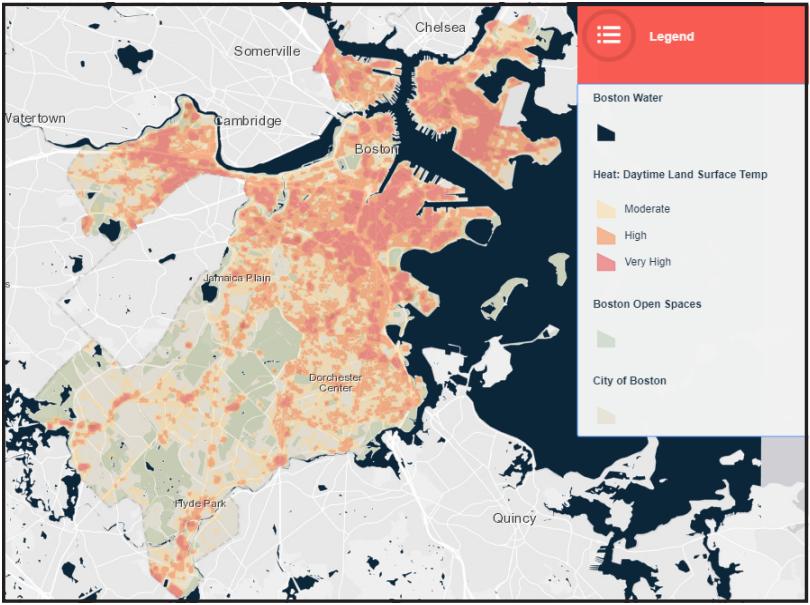
A resilient city is one that is both climate resilient and has intentionally created a resilient social and economic fabric to weather the coming storm. Drawing on the goals of the climate justice movement, academic literature, other cities’ experiences and local knowledge and ideas, the report presents recommendations for Boston’s City Council to explore in pursuit of a more resilient Boston. The report concludes with a summary of the most critical takeaways and limitations of the research project.

Climate justice is an expansive lens with far-reaching, systemic implications. As such, this report can only serve as one step in a larger and sustained dialogue between Boston’s community and local government. It is intended as a resource for those who wish to explore what just climate action could look like locally and describe possible policy, project and process avenues to explore. This report is also intended to be an educational tool that can help city employees, officials and residents alike form the foundation of a deeper understanding of what it means to be a climate just city.



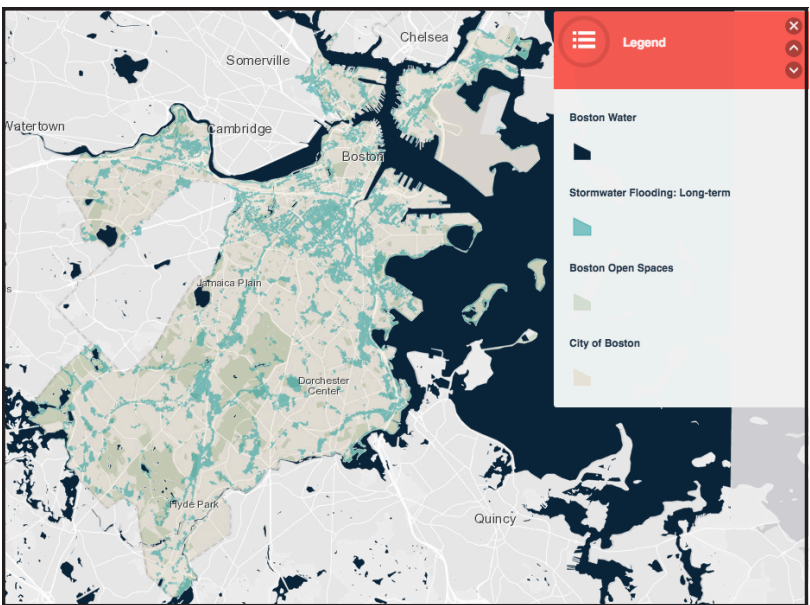
Coastal Flooding Impacts, 2070

This screenshot of the Climate Ready Boston Explorer mapping tool shows areas of the city vulnerable to high tide by the 2070s (dark blue), as well as areas vulnerable during storms that have a 10% and 1% chance of happening annually (medium blue and light blue, respectively). Data from [BostonGIS](#), 2017.



Current Daytime Temperatures during June and July

This screenshot shows a heat map derived from Landsat satellite data. Areas with elevated daytime land surface temperature averaging at least 1.25 degrees Fahrenheit above the mean daily temperature during late June/early July are shaded in yellow (moderately above average temperature), orange (high), and red (very high above average temperature). Data from the Trust for Public Land's [Climate Smart Cities](#) tool and Boston Climate Ready Explorer, 2017.



Predicted Stormwater Flooding Impacts, 2070-2100

Green areas show the approximate stormwater flooding extents from a 10-year, 24-hour rainfall event under various climate conditions, due to combined future sea level rise and extreme precipitation in the long term, or between 2070 and 2100. Data from Boston Water Sewer Commission Wastewater Facilities Study, Climate Ready Boston Explorer 2017.

Climate Change in Boston

“Because the costs of inaction are high, because Boston has ambitious goals, effective climate action requires the help of every Bostonian.”
- City of Boston 2014 Climate Action Plan Update⁶

I. Predicted Climate Impacts

When it was founded in 1630, the City of Boston was roughly half the size it is 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.⁷ 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 a few tiny islands. And yet sea level rise is merely one manifestation of the many climate change-induced environmental impacts that the city will experience. A recent [report](#) by the Boston Research Advisory Group and the city’s 2016 Climate Ready Boston report group future hazards into **1** increased extreme heat; **2** increased extreme storms and precipitation; **3** stormwater flooding; and **4** sea level rise and coastal flooding. Each of these hazards will impact each neighborhood 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 what will be 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.⁸ 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.⁹ With heat waves come urban heat islands, or 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. This built environment is not only warmer during the day, but retains heat longer, meaning that urban areas are slower to cool at night as well. This is the urban heat island effect. In parts of Chelsea, Boston's neighbor to the east, building roofs in the city's urban heat islands can typically rise up to 140 degrees Fahrenheit during a hot summer day.¹⁰

The city also experiences higher rates of hospitalization during heat waves, because extreme heat and urban heat islands create dangerous situations for those with preexisting medical conditions. Over the past thirty years, heat was related to 3 out of every 100,000 deaths in Boston. But by 2100, that number is estimated to increase nearly sevenfold to 20 per 100,000.¹¹ Another report from the National Resources Defense Council predicts that by 2090, roughly 1,340 annual heat-related deaths are predicted for Boston if no mitigation or adaptation measures are taken.¹² 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.¹³

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 2014-2015.¹⁴ During three complete MBTA shutdowns

and throughout the lingering problems thereafter, an estimated \$2 billion of economic activity was lost. Particularly impacted by the MBTA closures were hourly wage workers who lost their only method of commuting. School closures also required parents to take off work or find child care.¹⁵ Boston's low-lying, coastal infrastructure and neighborhoods are particularly vulnerable. Had Boston been hit by Superstorm Sandy, every coastal neighborhood would have been affected and up to 6% of the city's land-mass would have been inundated.¹⁶ Of particular note is the increase in precipitation Boston is already experiencing. Since 1958, there has been a 70% increase in the amount of precipitation on Boston's rainiest days - a trend expected to continue.¹⁷

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, including transportation corridors, drainage areas that are at or above their 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.¹⁸ The city's built environment is highly impervious, leaving stormwater with no place to dissipate, and overwhelming the drains and pipes which can lead to backflow, huge street puddles and even streams on the road. By 2050, as much as 7% of the city's land area may be exposed to 24-hour extreme precipitation events.¹⁹

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.²⁰ Severe flooding along these routes not only affects residents' and commuters' ability to travel and work, but many of these same routes are currently designated as evacuation routes in times of emergency, leading to questions of their efficacy in such situations.

And while comparatively sea level rise may feel like a distant problem, Boston has already experienced nine inches of sea level rise over the twentieth century.²¹ 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 estimates on the high end predict between 7 and 10 feet by the end of the century. 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 emergency shelters from coastal flooding.²² 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.²³ Between 2050 and 2100, flooding will expand into other neighborhoods such as Dorchester. Even so, these predictions cannot describe or truly quantify the personal and psychological toll such events would undoubtedly have.

II. Existing Vulnerabilities

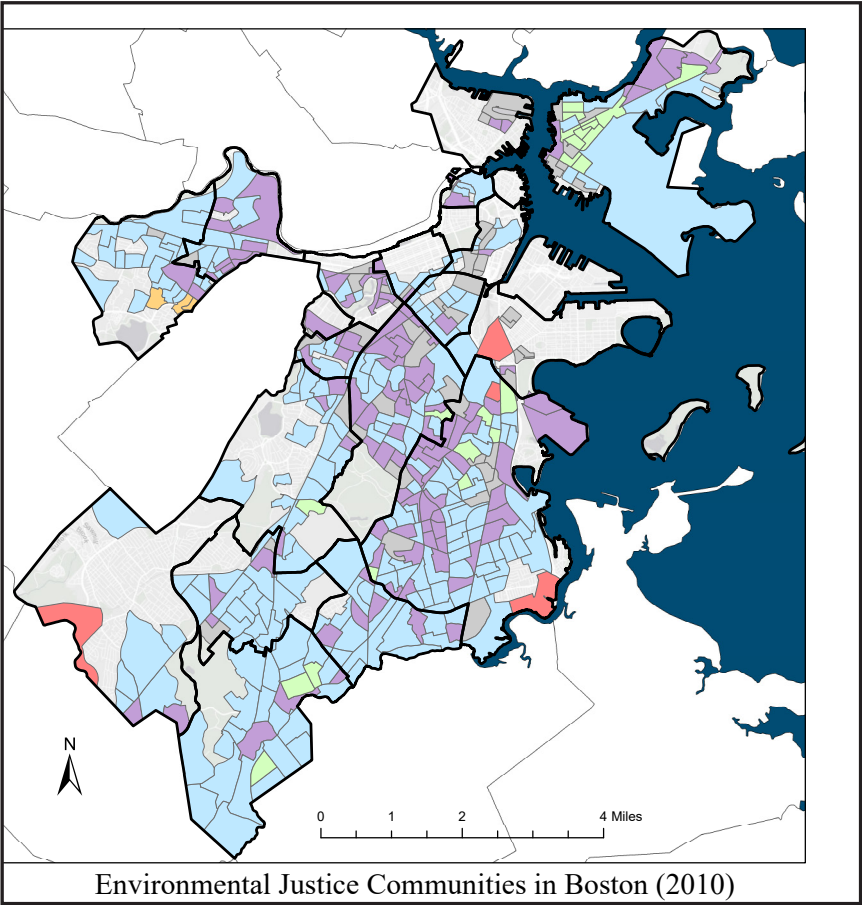
To flesh out a complete picture of community vulnerability and resilience it is essential to also take into account the underlying inequities present

across the City of Boston. These inequities have a veritable cornucopia of different manifestations, from a more traditional understanding of disadvantaged communities to framings that take into consideration lack of access to services and opportunities. Vulnerability is not meant 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.²⁴

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 assistance) and lack representation (in decision making processes and public outreach practices). The term "social vulnerability" combines these manifestations of vulnerability. Boston's own Chief Resilience Officer, Dr. Atyia Martin, has 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 recover from the impacts."²⁵

To understand the complexity of social vulnerability, a natural place to start is with environmental justice populations. Environmental justice populations are those individuals or communities that – due to discrimination and marginalization - have experienced a disproportionate share of environmental burdens throughout history. Examples abound, including neighborhoods that were divided by the construction of interstate highways, as well as those cited for trash transfer stations, toxic waste sites, polluting industrial facilities, bus depots, or power plants. Environmental justice populations simultaneously lack access to environmental assets.

Environmental Justice Communities in Boston
(2010)



Environmental Justice Population Characteristics

Boston Neighborhoods	Minority
Language	Language and Minority
Low Income	Low Income and Minority
Low Income and Language	Low Income, Minority and Language

The 2010 Census showed that Boston was home to approximately 327,000 non-white residents (53% of the total population), 279,000 residents with Limited-English Proficiency (39%), and 176,000 residents with low- to no-income (29%).²⁷ However, multiple studies (including the city’s Climate Ready Boston report), include other vulnerable populations such as children, youth and those over 65; people with disabilities; immigrants; those with mental illnesses, and the socially isolated.²⁸ Some, if not many, of these factors overlap, compounding the social, economic and environmental risk for those particular residents and communities who have comparatively few resources to adapt to a changing climate.

Created by Christina Schlegel,
December 11, 2017.
Data from MassGIS (2010)

In Massachusetts, environmental justice communities are rather narrowly defined as having one, two or all of the following characteristics: an annual median income that is equal or less than 65% of the state’s median income (\$62,072 in 2010), where 25% or more of the residents identify with a race that is not white, where 25% or more of residents over age 14 speak less than fluent English.²⁶

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 includes 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), living in a high crime area, living in areas with low voter turnout and political participation, and lacking technological savvy (which limits ability to participate in decision-making).²⁹ 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 and polluting facilities.

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, resulting in 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 one tool that can help cities better align future actions with community needs and desires for not only equitable, but just outcomes. However, there is a concern embedded in these metrics: it is highly questionable that communities can be broken down into purely quantitative data and furthermore, metrics can hide the institutional drivers of vulnerability.³⁰ Metrics should enhance – not replace - community participation and leadership.

Integrating Justice into Local Climate Action

The impacts of climate change are likely to affect those with heightened social vulnerability first, and often, also most intensely. Therefore, some to refer to climate change as, “an ... instigator of corrosive disadvantage,” creating or reinforcing patterns of vulnerability.³¹ The broad goal of a climate justice agenda is to interrupt and disrupt this corrosive disadvantage by creating pathways for individual and community resilience that prioritize the most climate vulnerable while recognizing and countering patterns of past and present injustice. The role of government then is to look for procedural and policy pathways that create access, opportunity, recognition and resilience in partnership with the community.

I. A Primer on Climate Justice

Among activists, climate justice began as a grassroots movement calling for more radical and systemic responses to climate change at the international level. The beginnings of what would come to be called the Climate Justice movement crystallized in at the turn of the 20th century as a response to international governmental meetings that had disassociated the problem of climate change from its root causes in longstanding and systemic political, social and economic injustices. Climate justice was seen as an approach

that held corporations accountable for their role in exacerbating global warming, stressed giving support to impacted communities and the most vulnerable to environmental disasters, drew on strategies from the Environmental Justice movement to counter fossil fuels and move towards a just transition.³²

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.³³ Included among the Bali principles are that communities have a right to be free from the impacts of climate change and ecological destruction, the acknowledgment of the need to reduce greenhouse gas emissions, a call for the creation of local and renewable energy sources, warning that solutions are needed which do not externalize environmental harms onto any community, a call for the education of youth on climate justice, and a demand that policies be based on mutual respect and be free from discrimination.³⁴

In the academic arena, issues of justice and equity in climate change discourse began with the somewhat narrow understanding of these terms as a fair distribution of responsibilities and obligations when acting on a common resource problem like climate change.³⁵ But environmental justice scholars argued for the inclusion of procedural justice into the 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 have a profound effect on policy outcomes and who the outcomes benefit.³⁶ Added to this was the concept of justice as recognition, where social, economic and political injustices of the past and present are linked with

a failure to give underrepresented groups the proper recognition.³⁷ In this sense, recognition refers to an acknowledgment of how past processes and policies have impacted these communities and individuals in ways that have led to an unequal distribution of resources, access, opportunities and power at their expense.

This principle of recognition requires a deeper analysis of how both past and current processes of decision-making and participation can intentionally or unintentionally further these underlying injustices and even exacerbate community vulnerability and social stratification.³⁸ Recognition in climate justice research has also echoed a more activist approach in not only calling for a critical examination of the processes that have created and maintain climate injustice, but in challenging these processes and exploring alternative pathways for just climate action.³⁹

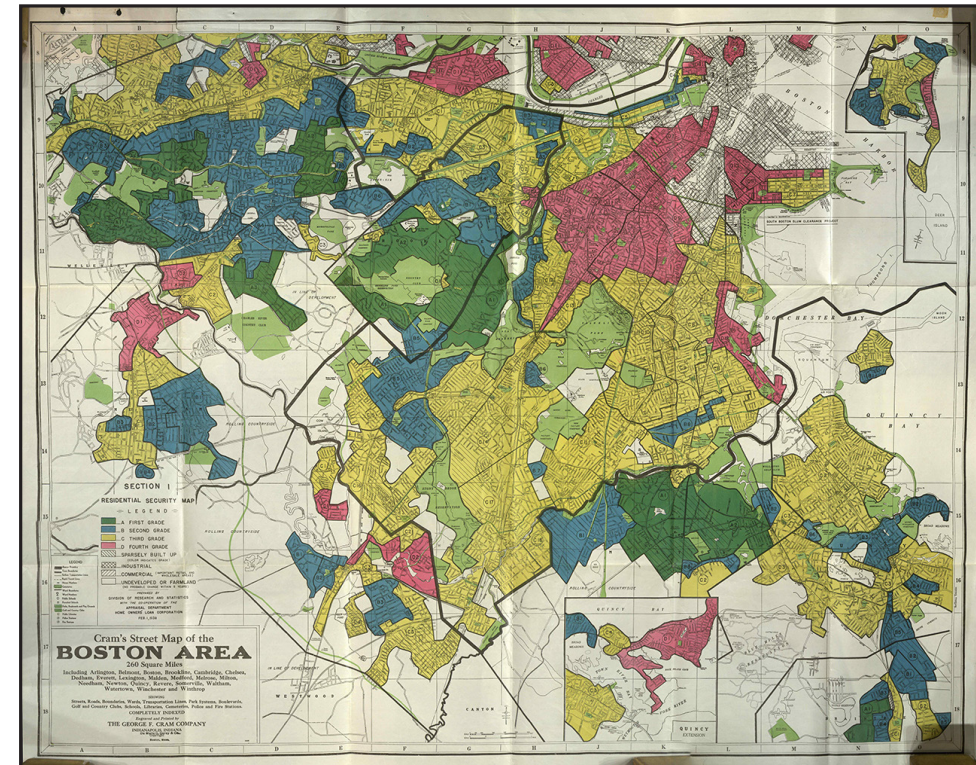
II. Justice, Equity or Resilience?

The terms justice, equity and resilience abound in the climate justice literature and have also made their way into municipal climate action plans as cities become more aware of the climate change as an “instigator of corrosive disadvantage”. While these words are similar, they are not interchangeable. Resilience is the ability to bounce back or recover from sudden shocks (hurricanes, winter snow emergencies) as well as longer term stresses (such as sea level rise), and can extend beyond environmental incidents. The word “resilience” is seen as a more universally palatable (but also politically neutral) term⁴⁰ that does not explicitly call out past and present injustices, and can therefore lack the element of justice as recognition.

The central aim of equity, however, is achieving fair outcomes for all. The term originated in the courtroom where it was used to provide remedies for an otherwise unjust distribution of benefits or burdens.⁴¹ 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.⁴² Equity is therefore concerned mainly with issues of distributive justice, and does not capture the other principles of climate justice, leaving it incomplete. And while less so than resilience, it is a politically neutral term as it can be seen to sidestep the root causes of existing injustices. However, equity is a much used term in policy circles. In contrast, “justice” is a term that encompasses the distributive, procedural and recognitional elements necessary for just climate action. It is also a term that comes more from the environmental justice movement than public policymaking. Whereas equity can sound aspirational and future-focused, justice embodies a demand for remedies and corrective action of past wrongs.⁴³

III. Urban Climate Justice

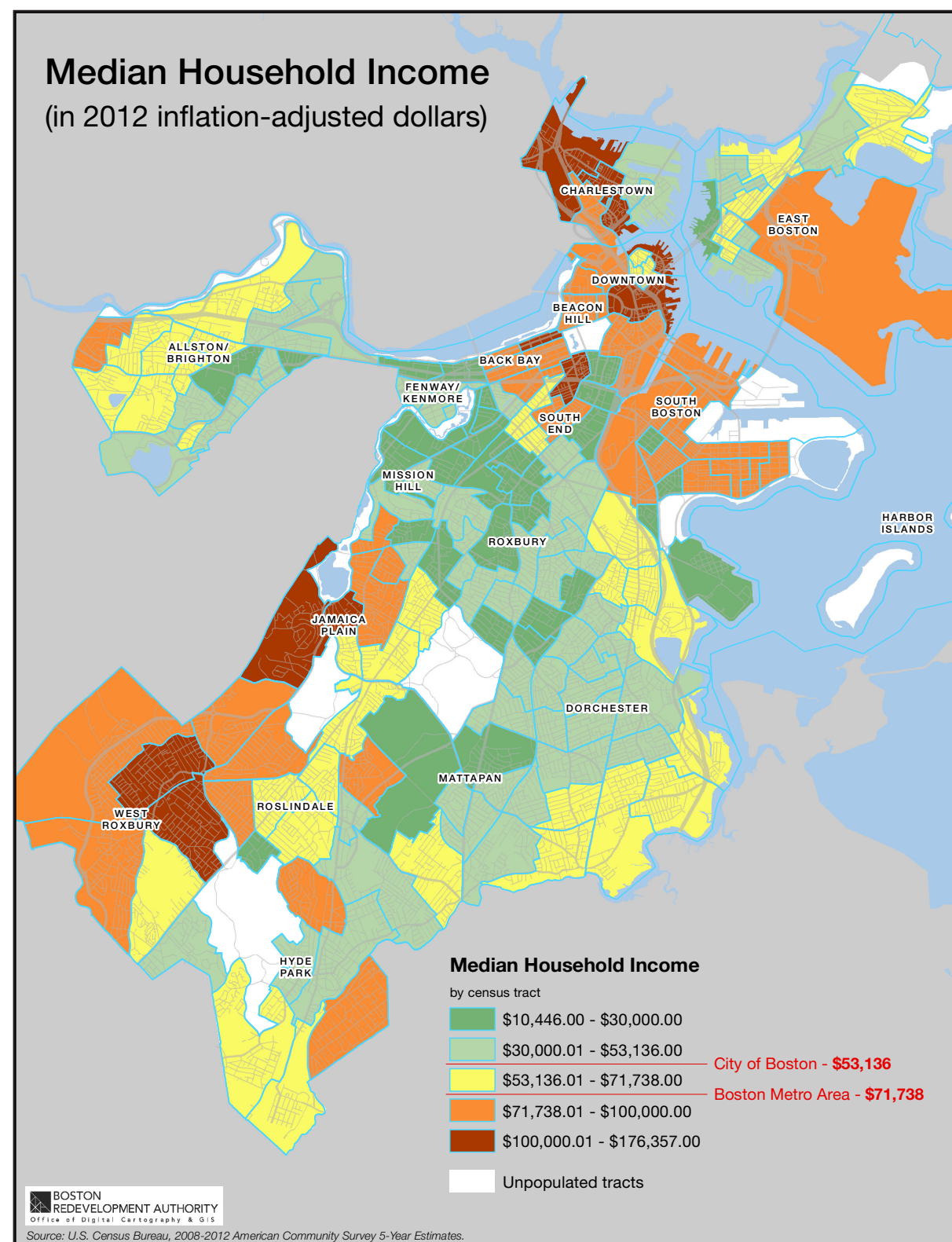
Given the monumental breadth of climate justice, how is it actualized at the level of the city, and how have cities approached the unequal impacts of climate change? It was in Cleveland in 1969 that the first meaningful equity-based approach to urban planning occurred in America,⁴⁴ but the integration of concepts like “equity” and “justice” into planning and policymaking locally have themselves been incredibly uneven. Urban planners and policymakers have more often adopted the term equity, or the



The “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). White residents were encouraged to settle in green and blue areas, and people of color were directed to yellow and red areas. Image from [Urban Oasis](#).

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.⁴⁵ 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 task 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.

Climate adaptation planning in the Northern hemisphere 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 the development of community social capital or relatively short-term solutions like emergency contact lists, cooling centers and providing information to



Boston Resident's
Inflation-Adjusted Income
in 2012. Image from [BPDA](#).

the public in multiple languages.⁴⁶ These 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 and widen disparities in the city.⁴⁷ In contrast, climate actions in the global 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.⁴⁸ In the global South, climate adaptation is collectivist.

It is not possible to design our way out. Climate change requires that cities consider more integrated planning and transformative actions to stop further injustice. 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.⁴⁹ Allowing them to decide what actions should be deemed most important and to be engaged in the visioning of adaptation and mitigation policies also creates procedural and recognition 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 avoid being a halfhearted attempt at full participation. A global South-inspired, communitarian approach to climate change which recognizes both systemic barriers to justice and the right of all residents - particularly the most at risk - to participate in all stages of planning and policymaking may go a long way towards creating just climate action.

An Overview of Climate Action in Boston

As climate change begins to negatively affect residents and neighborhoods, the City of Boston has not been sitting idly by. The city published its first Climate Action Plan in 2007, and updated plans are released about every three years, with the latest climate report having been released in December of 2016. In addition, the city has an abundance of related long-term plans and vision documents focused on transportation, housing, racial equity and other concerns that are all connected under [Imagine Boston 2030](#), Boston's first citywide plan in over 50 years.

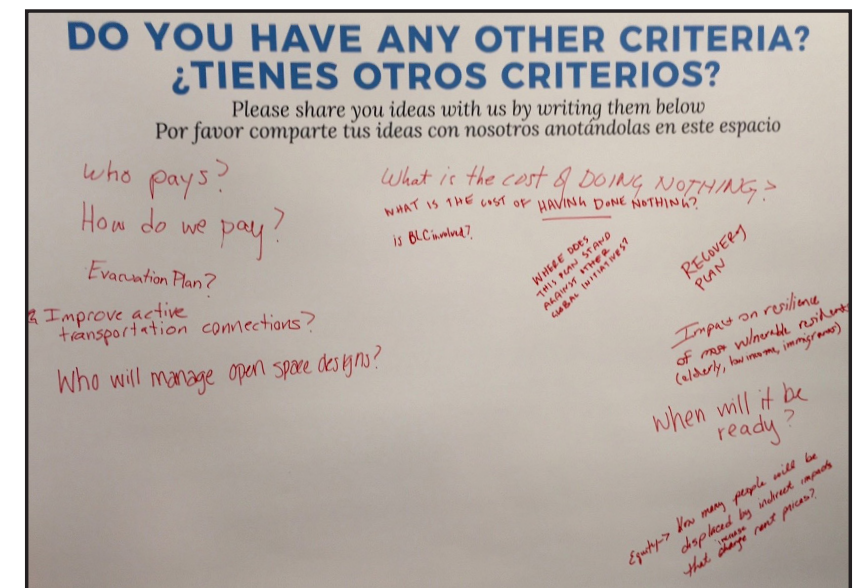
The [2014 Climate Action Plan](#) (or CAP) was released approximately a year after Boston's current Mayor Martin Walsh took office and reflects input from both the current and previous administrations. Priorities were grouped into five sections: neighborhoods, large buildings and institutions, transportation, climate preparedness and achieving 80 % greenhouse gas emissions reductions by 2050, with cross-cutting themes including community engagement, social equity, public health and safety and economic development.⁵⁰ The city defined social equity to mean, "that minority and low-income communities must not be disproportionately impacted by climate hazards"⁵¹ but also that, "benefits from climate mitigation and preparedness efforts should be shared equally among all groups of people." The city departments tapped with prioritizing the health and resilience

of at-risk residents in their operations were primarily the Boston Public Health Commission and the Office of Emergency Management (to ensure emergency shelters and cooling centers were accessible and operational), whereas a citywide approach to social equity was crafted later through the [Rockefeller 100 Resilient Cities initiative](#).⁵²

To provide greater equity in the implementation of climate actions, the 2014 plan included an assertion that the city would publish data annually towards the city’s greenhouse gas emissions targets that provided information on current actions and how to participate. Later, the online information was to include progress towards tree planting, equity and climate preparedness targets as well.⁵³ While the CAP was a comprehensive effort by the city towards distributive justice, it did not embody either true procedural justice or just recognition. Since it was viewed in part as an update to the city’s previous plans, public engagement was considerably less expansive and inclusive compared to past climate plans.

The proposed actions include supporting local climate action programs and projects in partnership with community leaders and organizations, working with public health organizations servicing vulnerable residents, identifying financial and technical resources for vulnerable populations, investing in small-scale resiliency projects in environmental justice communities, and improving and facilitating access to green jobs. Furthermore, the plan recommended the coordination of regional action by providing public access to climate data and projections, establishing preparedness indicators for Boston’s neighborhoods, convening a regional climate preparedness summit to better coordinate metro-Boston municipalities, and fostering partnerships between the city and local universities to harness

Community feedback at an East Boston workshop for Climate Ready Boston, 2017. Photo by Christina Schlegel



local expertise.⁵⁴ Additional actions called for “improved and expanded neighborhood engagement,” which was not well defined, and the creation of a “neighborhood climate action network,” which may be what has become Greenovate Neighborhoods – a monthly meeting of climate-concerned residents in Boston.

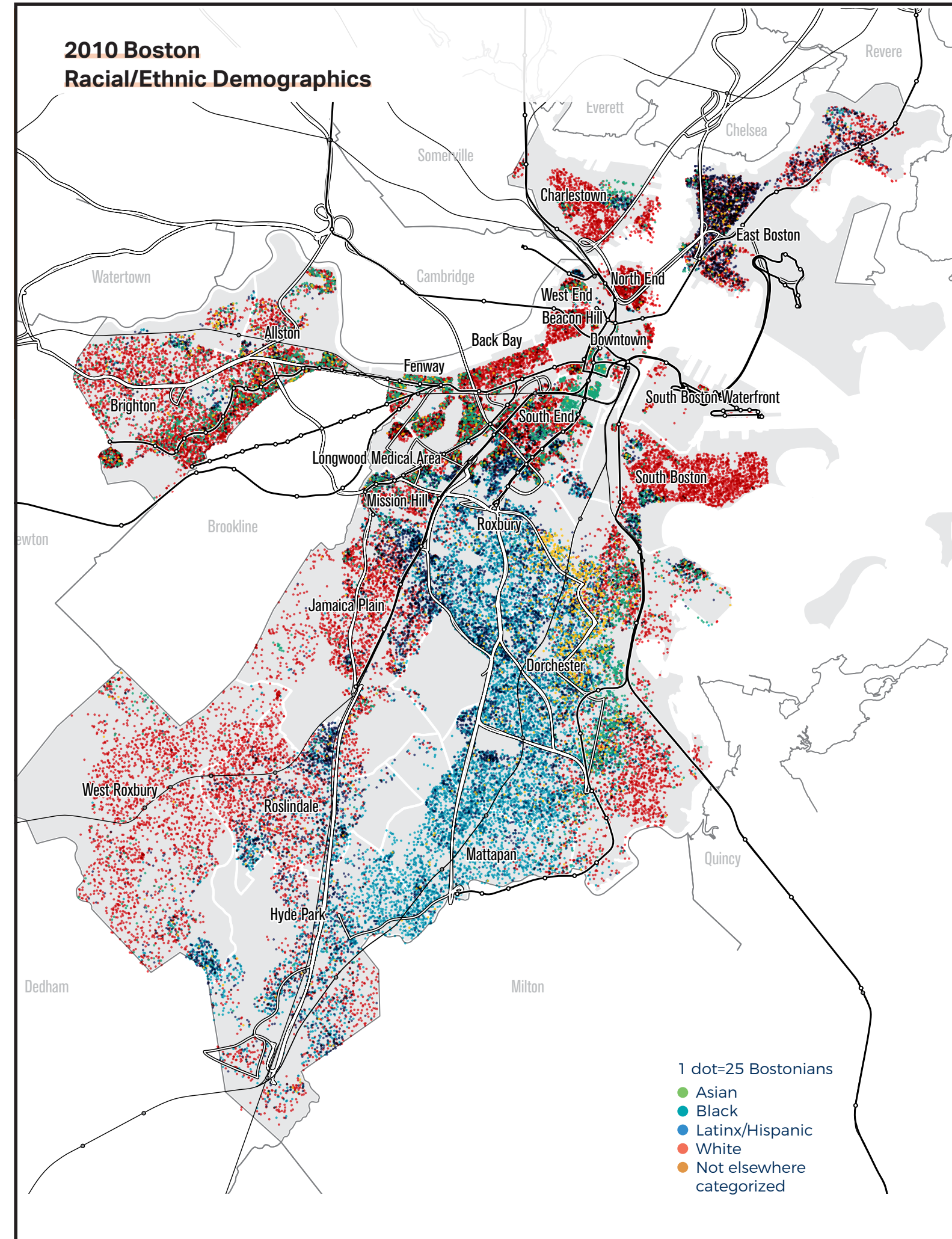
About a year later Mayor Walsh launched [Climate Ready Boston](#), an initiative to “help Boston plan for the future impacts of climate change.”⁵⁵ Climate Ready Boston has been tasked with creating a framework for climate action in the city, and is supported by the Massachusetts Office of Coastal Zone Management and partners with the [Green Ribbon Commission](#). The initiative helps to coordinate the actions of various city departments including: Environment; Emergency Management; Transportation; the Public Health Commission; the Boston Planning and Development Agency; and most recently, the Mayor’s Office of Resilience and Racial Equity.

It was under Climate Ready Boston that the city’s most recent climate report (also titled [Climate Ready Boston](#)) was released in December 2016 to provide the public with updates on climate impacts and vulnerabilities across the city. Like earlier climate plans, the city’s private foundations (the Barr Foundation and Leventhal Family Foundation) played a central role in funding outreach and creation of the [Climate Ready Boston](#) report.

While not a city climate plan update per se, the report details updated climate impacts for different neighborhoods, expands and outlines different

types of social vulnerability, and proposes dozens of initial strategies and ideas for building resilience. Notably, creation of the report was weighted heavily towards the business and scientific communities. Climate experts, local employers and institutions, large nonprofits, area utility companies, design consultants and city departments all played a role; the community was represented by members of eight neighborhood organizations serving on a Community Advisory Group.⁵⁶ And while development of the report's initiatives were based in part on information gathered from interviews and focus groups conducted with a broad range of local stakeholders,⁵⁷ no details are provided to describe the quality and breadth of 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, or the "built environment".

A robust, citywide understanding of social equity and justice are alluded to but not discussed in these plans. Enter [Resilient Boston](#), a wide-ranging strategy for addressing the systemic racial inequities in the city. The Resilient Boston strategy was created under the leadership of Dr. Atyia Martin, the city's Chief Resilience Officer. Initial funding for the Strategy and Dr. Martin's position came from Boston's selection as one of Rockefeller's 100 Resilient Cities in 2014. Dr. Martin is part of the Mayor's cabinet, with the thought being that creating such a cabinet position would help other departments integrate racial equity into their own work. Resilient Boston, released in July 2017, is the culmination of over two years of community engagement and the work of the Boston Resilience Collaborative (large workshops with representation from an expansive array of justice-oriented organizations, city offices, institutions, the faith community and others). Of these gatherings, approximately 180 ideas were put forward (which in



Resilient Boston were combined to create 70 final initiatives). The ultimate purpose of this Strategy is to provide an overarching framework for building local resilience through what in essence is just recognition, realizing the roles that structural and institutional inequities have played in maintaining or even increasing the economic, racial, economic or social vulnerability of residents.

Acknowledging the unequal exposure of environmental justice communities in the city to environmental stresses and lack of political power, 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.⁵⁸ Resilient Boston recommends the creation of local adaptation plans (likely referring to the similar initiative proposed in Climate Ready Boston), the expansion of pilot projects for microgrids and distributed energy in low-income communities of color such as Lower Roxbury, and heat adaptation projects and vulnerability mapping. It includes neighborhood-level stormwater and coastal flooding management plans, integrating questions of resilience and racial equity into future development projects and approval processes, and the creation of a Climate Risk Engagement Campaign and Community Resilience Fellowship Program (communications programs out of Dr. Martin’s office designed to engage specifically with highly vulnerable communities).

For each of the approximately 70 initiatives put forth, the Strategy gives a timeframe for implementation and lists which city departments will be responsible for overseeing implementation, and who their local or neighborhood-based partners will be.⁵⁹ Additionally, the broader Boston community

can follow the city’s progress towards these initiatives through an online Interactive Resilience Platform, which will provide the full scope and status of initiatives, and is set to be launched later this year.⁶⁰

Resilient Boston is also explicit in defining equity, justice and resilience. Equity is described as the respectful treatment and fair involvement of all people in a society. It is the, “state in which everyone has the opportunity to reach their full potential.” Consequently, equitable policymaking is the, “fair, just, and equitable management of all institutions serving the public directly or by contract; the fair, just, and equitable distribution of public services and implementation of public policy; and the commitment to promote fairness, justice, and equity in the formation of public policy.”⁶¹ Justice is not restorative, but is described as, “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).”⁶²

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 frame which demands that institutional and systemic inequities within the city be addressed. And social resilience is seen as foundational to all other types of resilience, including the natural and built environment, critical infrastructure and the economy.⁶³ The Strategy represents a new kind of planning for Boston, one meant to be an iterative, “living document”. It is designed to be highly responsive to the concerns of residents and cognizant of the many causes and ongoing expressions of injustice in the city. Its approach is far-reaching, and on paper, it is the most climate just plan the city has ever created.

Community Outreach and Conversations

Climate actions sit on a continuum that begins with dialogue and visioning, moves through a planning and decision-making stage, and ends with implementation and evaluation. The physical Climate Action Plans represent one moment in time along this arc, and often do not provide the full picture of climate action as it stands today.

To gather feedback on the state of climate action and climate justice work in Boston, and to begin to unearth what concerns remain, 47 different interviews were conducted between May and August of 2017. Of the 47 interviews, 31 were with community-based organizations, justice-oriented organizations, volunteer climate action groups, community development corporations and neighborhood organizations representing most of Boston's neighborhoods. Nine more were conducted with officials from various offices within City Hall. Seven interviews were held with either academic experts or planners from other cities that have also been working on integrating a better justice narrative into their local climate actions. A full list of city offices, experts and organizations that were interviewed can be found in the Appendix.

The interview questions were meant to uncover how the organizations currently incorporate local climate change concerns into their work, and if

climate justice is part of their framing. Questions also sought to illuminate how they have been engaged with the city in its planning efforts, the concerns they have regarding the city's work implementing these plans, and finally, the ideas and recommendations they have for a more climate just approach by the city. Similar questions were asked of city officials, but were directed more towards what has already been accomplished by the city. Interviews with experts and city planners elsewhere in the U.S. were to bring in additional ideas for just action as well as common issues to consider in the realization of this work. The answers to questions were then grouped into two broad categories: concerns and ideas. From these categories, comments were further defined depending on whether they spoke to distributive justice issues, procedural justice issues or issues of just recognition to further frame how their answers relate to the concept of climate justice and just climate action.

It must be noted that there is considerable overlap between the three types in practice, particularly as just recognition provides a strong foundation for true procedural and distributive justice. The concerns and ideas described below primarily reflect the commentary provided by community organizations and groups, with expert and official knowledge used to enhance arguments or provide examples. To protect the professional privacy of any one individual or organization their feedback has been anonymized, and the number of interviewees raising similar points is listed instead.

I. Community Concerns around Current Climate Actions



Procedural Justice Concerns

- **Greater clarity of the position of government, the structure of climate planning and official roles is desired.** For the majority of interviewees, there is general confusion around how the Office of Environment, Energy and Open Space (EEOS) is organized. A number of community-based interviewees were not aware that Greenovate was the community outreach arm of the department, with at least three interviewees feeling the EEOS department is underfunded relative to the task it has been given.
- **There is concern around the city's commitment to climate action.** The concern was raised among interviewees of how much of the city's environmental outreach, planning and projects are funded by non-government actors such as foundations. A few interviewees expressed the wish that the city put more of its own "skin into the game." One interviewee mentioned that at times while the term equity is used in planning documents, it is also used as an argument against bolder environmental initiatives because the initiatives have been framed as potentially hurting low-income residents.
- **It is unclear how actions described in the plans will be translated into implementation.** There was a palpable sense of planning fatigue among a number of interviewees, and a desire to hear from the city how many of the recommendations from various plans had been or were being implemented. Among a few community based organizations there was some expressed exasperation and disillusionment with the planning process that is seen to

include some vulnerable communities, but primarily on the front-end of plan creation, and not iteratively in more of a partnership fashion. One interviewee stated they felt like the city was merely checking off an environmental justice community engagement checkbox.

- **There is a desire to see a climate action timeline, or implementation roadmap.** Go Boston 2030 and Imagine Boston 2030 create a vision of what the city could be in 13 years, and some of the city’s major emissions reduction goals are for 2050. Feedback – particularly from experts and longtime activists – included the need to think thoughtfully and strategically about how to reach these end goals within the goal timeframes. One interviewee wondered if the city could meet its carbon neutral goal by 2050 if much of the new development in the city was powered by natural gas.
- **It can be difficult to find information and updates on the city’s climate actions and projects.** One interviewee noted that it was fantastic that the city translated materials into five languages, but that they are not usually informed of the posting of useful information and documents in the first place. Other interviewees expressed concern around how the information does not trickle down to the community. Stated another way, outreach around resources, programs and data from multiple offices was perceived to be inconsistent.
- **How the city’s plans interconnect, and how non-CAP plans in the city take into account predicted climate changes for Boston, is often unclear.** Feedback from many interviewees included confusion around how the city’s plethora of recent plans relate and connect to one another. Some expressed a feeling of dismay that the planning processes happen in

silos, and noted their organizations had been contacted by various departments around planning but that the departments themselves were unaware of this duplicative outreach. At least three interviewees expressed concern that non-climate focused city plans and projects were not aligned with the forecasted climate impacts described in Climate Ready Boston. Similarly, consideration of the climate and equity implications of any project or action has not been institutionalized through practice or regulation throughout the city, however the Mayor’s Office of Resilience and Racial Equity (MORRE) is seeking to change practices with respect to equity.

- **The process through which the city engages with residents is inconsistent, and often could draw more on community assets and partnerships.** Notwithstanding plans like Resilient Boston and GoBoston 2030, engagement strategies and the extent of outreach was seen as mixed. A few interviewees said that the city often talks to residents in “expert-speak”, or in other words, complex concepts and processes are not fully explained or summarized. This creates barriers to full participation, particularly from residents that are not familiar with the issue. In addition, the majority of groups recommended that the city take better advantage of local community-based leaders as disseminators of city information.

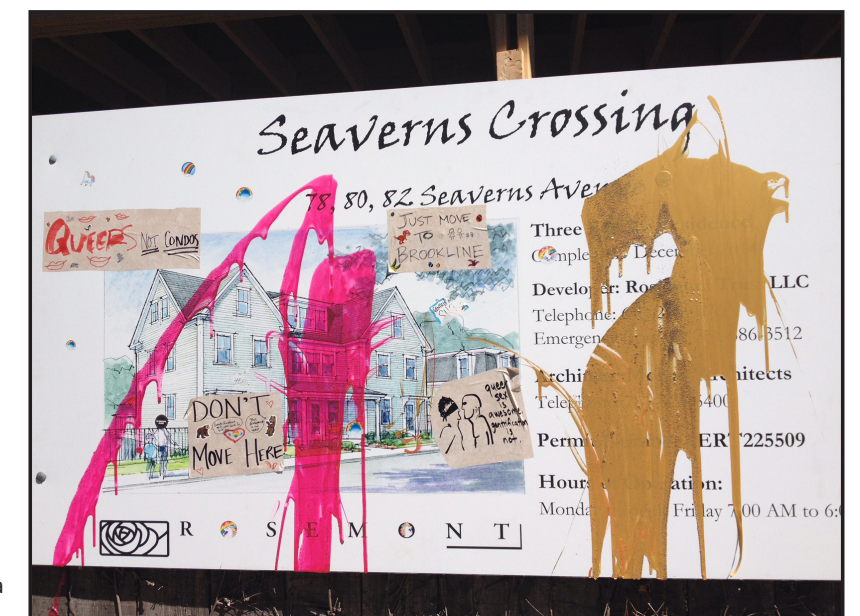
Distributive Justice Concerns

- **There is widespread desire to create greater access to energy efficiency and weatherization programs.** Extreme summer heat or freezing winter temperatures can hit vulnerable communities particularly hard as their energy usage and bills increase, creating energy insecurity. Renew Boston currently helps residents by offering no-cost home energy audits and provides recommendations for efficiency improvements through its partners. However, at least three interviewees mentioned that these programs are not very accessible for low-income residents and residents with limited-English proficiency.
- **The distribution of trees across neighborhoods in the city and their care is of concern.** In higher-income neighborhoods there was dismay around the significant number of street trees planted by the Parks Department that would end up dying. Most residents are not aware that the city does not indefinitely maintain these trees, and indeed, hopes that residents will assume the responsibility of taking care of a tree the city planted.
- **To many organizations, there is a feeling that the city is overly focused on development rather than building true climate and community resilience.** To multiple organizations engaged in transportation and development projects in their neighborhood, there was widespread concern that at a city level, addressing climate change is still largely relegated to the environmental silo. One interviewee remarked that the city could “push harder” in terms of development standards, and also explore grant programs for builders to encourage energy efficient construction in both affordable and market rate units.

- **Historically and presently vulnerable neighborhoods want to see the emergency evacuation plans and routes updated and that information communicated to residents.** Three interviewees that were familiar with the Evacuation Route signs posted in the city expressed unease at not knowing where the routes led. One interviewee followed the evacuation route in his neighborhood only to be led onto to a dead-end street. Further concern centered around how effectively evacuation and emergency information was being distributed to organizations and residents, and where this information could be found.

Just Recognition Concerns

- **Some neighborhood-level organizations and experts expressed the need to more explicitly link the housing issues and gentrification that Boston faces with climate change and development.** Between future climate impacts and having an affordable place to live, housing in Boston is seen as the more pressing and widespread crisis for many community-based organizations. Housing usually wins, as the impacts of climate change are considered too far off to be a top priority. Interviewees cautioned that the city should be aware that even thinking about the impacts of climate change is a



Anger over luxury development in Jamaica Plain, 2015. Photo by Christina Schlegel

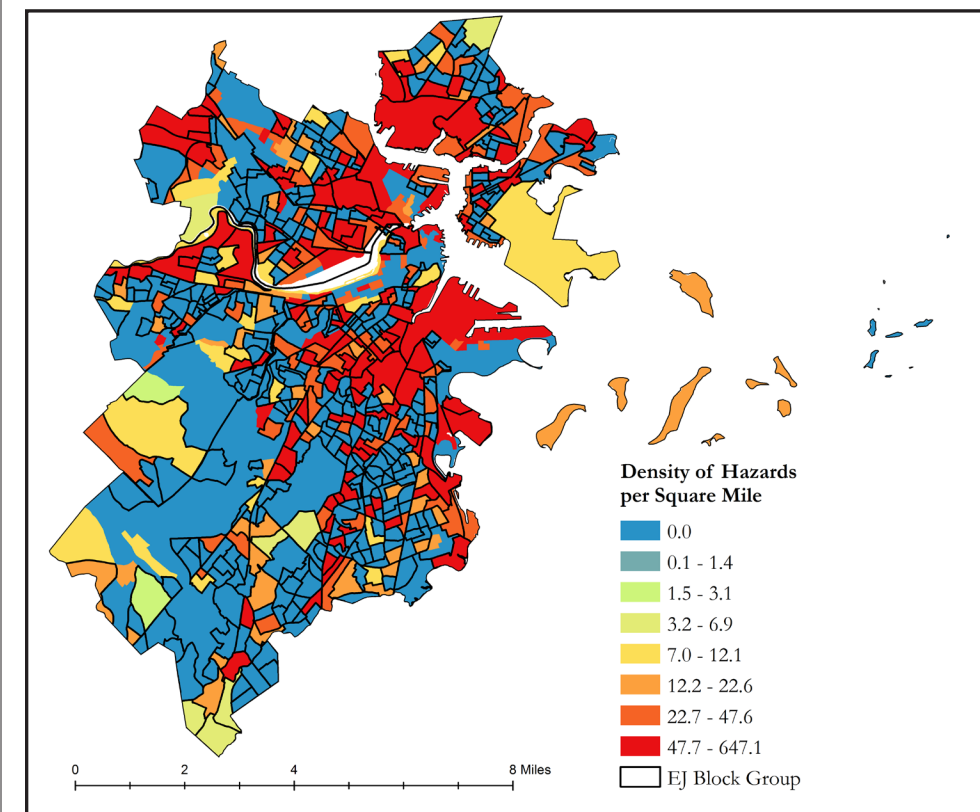
privilege because it assumes a certain level of existing personal or neighborhood stability. Many interviewees cautioned that future development in the city cannot be “development as usual”.

- **Additionally, many more organizations wished to see the city more explicitly incorporate existing environmental issues, as well as lack of access and opportunity concerns, into future climate planning and projects.** In the Chinatown neighborhood, residents are in close proximity to major roadways including Interstate 93, which negatively affects air quality and resident health - particularly on hot summer days. In fact, between 2009 and 2013, the incidence of asthma among children at one elementary school in Chinatown rose from 18% to 25%.⁶⁴ In Mattapan, residents have faced increased heat waves and stormwater flooding on main roads, but also have preexisting environmental concerns around the Neponset River and Hollingsworth Dam. The Neponset river has had ongoing issues with E. Coli bacteria and Polychlorinated Biphenyls (chemicals known as PCBs) related to historical and current factory operations along the river. According to two interviewees, the Hollingsworth Dam is in danger of failing and spreading the waterborne toxins yet there have been no additional resources from the EPA, the state or the city to address the issue.

In other environmental justice communities across the city another concern centered around employment opportunities. Boston’s unemployment rate is around 5%, but in parts of Dorchester and Roxbury, it is three times as high and incomes have not increased. At least four interviewees wished to see employment and workforce training programs that helped those without work transition into green jobs – particularly local green energy and green construction positions. Two other interviewees brought up the

Density of Environmental Hazards in the Boston Area by Block Group, 2010

(INCLUDES CHELSEA, EVERETT, SOMERVILLE, CAMBRIDGE, BOSTON, BROOKLINE)



In Massachusetts, environmental hazards include facilities such as trash transfer stations, landfills, Superfund sites, incinerators, power plants, and heavy industrial activities. It is evident that environmental justice communities remain among the most overburdened in the state when it comes to a whole host of hazards. (Environmental Justice block groups as defined by the state are outlined in black.) Map by Christina Schlegel. Data from MassGIS, 2010-2016.

impacts that even current extreme weather events had on vulnerable residents. During heavy snowstorms, a number of senior citizens had been trapped in their houses in Mattapan, unable to shovel themselves out. When severe weather affects public transportation, workers who are paid hourly lose a significant portion of their income. These impacts disproportionately affect lower-income populations. And with old infrastructure it is easy to push over that first domino of vulnerability.

- **There is a desire to have small and local businesses brought into climate adaptation and mitigation planning and be seen as partners.**

Local businesses expressed interest in being part of the city’s response to climate action. For instance, businesses could serve as emergency shelters and help the city to distribute goods during storms. At present, a lack of consistent outreach has led small businesses to feel underutilized and uninformed, and the branding of climate action is perceived to primarily focus on large corporations and institutions as actors.

- **There is concern over what is perceived as inconsistent leadership and framing of climate change and justice between different city officials, departments and events.** An interviewee felt the BPDA was steaming ahead with building as usual despite the significant warnings in Climate Ready Boston, noting that the city’s rush to build is a form of injustice. Interviewees also sensed a change in framing and a softening of the city’s adaptation and mitigation-related ambition since 2010. Two interviewees were concerned that in the seeming absence of wholehearted city support of climate action, the city’s private foundation partners were in large part deciding what should and could be done with respect to climate change adaptation and mitigation.
- **Similarly, moving from a somewhat reactive to proactive approach around resilience building and climate change is desired.** Some of the smaller and more immediate problems addressed by the city are through 311, a phone application where residents can notify the city of problems that was created by the Mayor’s Office of New Urban Mechanics (MONUM). One interviewee, while grateful for 311, said it was symptomatic of how the city approaches larger issues as well: in a largely reactive way when the community expresses their unhappiness instead of in a more proactive way.
- **There is a wish for greater emphasis on solutions at the municipal and collaborative level in addition to individual actions.** Both local interviewees and interviewees familiar with other city climate action plans and projects expressed concern that too much adaptation and mitigation initiatives expect individual residents to be the actors or change agents rather than municipal-level or community-level action. The concern from at least three interviewees is that a resident’s personal agency and ability

to make lifestyle changes depends largely on their existing level of vulnerability and also on whether or not there are larger structural support mechanisms and programs to help make their choices easier.



It is clear from the comments that while community organizations are generally very supportive of the city’s climate actions and climate-focused offices, there is also a desire and expectation for the city to have more ambitious goals. If Boston is to move more deliberately towards climate just planning and policymaking, any actions taken must seriously consider some fundamental questions. *How* are these solutions created? *What* do they look like and *what* problems or inequities do they address? *Who* created them, and *who* are they for? 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.

Through offices such as Greenovate and MORRE, the city is actively seeking to address persistent inequities. Additionally, the interviews conducted for this report were also intended to highlight community-based ideas and visions – from specific climate projects to overall city strategy - that Boston could explore. Their comments and recommendations are described below, and are intended to serve as seeds to germinate larger and more in-depth dialogue between the city, its residents, businesses and organizations.

II. Community Ideas and Recommendations for Future Action

Promoting Procedural Justice

• **What is needed is a strategy document, or detailed implementation plan that is accessible to the community.** An activist called attention to a community desire to see a fleshed-out strategy from the city for how it would be implementing the actions Climate Ready Boston and other recent city plans. A detailed implementation plan would ideally include specific project timelines, the department managing implementation, list any community partners, and who to contact if there were concerns or comments. A static example of this is the City of [Portland’s Climate Action Plan Progress Report](#). However, the Mayor’s Office of Resilience and Racial Equity’s proposed interactive Resilient website may prove to be more dynamic, inclusive and accessible. A tool like this adapted for climate action would democratize access to the information residents and organizations need to inform their interactions the city. It would also help create projects that are responsive to ongoing community feedback.

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.	C C C C	City: BPS County: OS	Existing and/or ongoing
		S E		
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.	C C C C	City: BPS County: OS	Near-term
		S E		
3C	Community Solar — Support the development of community solar projects that benefit all residents, particularly communities of color and low-income populations.	C C C C	City: BPS	Existing and/or ongoing
		S E		
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.	C C C C	City: BPS County: OS	Existing and/or ongoing
		S E		
Potential impact		C C C C C	Magnitude of carbon emissions reduction	
		S	High potential to support jobs and prosperity	
		E	High potential to advance equity	
			High potential to improve local environmental quality	
			High potential to improve health	

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, page 68.

- **Consider participatory budgeting for some pilot climate projects.** Through programs started by Mayor Menino and continued by Mayor Walsh, Boston’s youth have been allowed to vote on which projects a portion of the city’s yearly budget would be spent. The idea of extending a participatory budgeting process to urban climate actions was brought up by two interviewees. Through a participatory budgeting process, a specific neighborhood or even the city as a whole could be engaged in presenting project ideas and in prioritizing what projects are most meaningful and impactful for residents. Furthermore, participatory budgeting may help to mend some of the distrust felt towards government in traditionally more marginalized neighborhoods.
- **Create avenues through which residents can learn about climate impacts and their energy use.** Multiple interviewees floated the idea of incorporating local climate change impacts, energy literacy, and resilience education into the Boston Public Schools (BPS) curriculum. Education also meant providing neighborhood organizations with the information and resources they needed to pass on information regarding the renewable energy, energy efficiency, and weatherization programs available to area residents. This includes making programs like Renew Boston more accessible to low-income residents and residents whose primary language is not English and helping to connect local renewable energy companies with Bostonians interested in community shared solar or other programs.
- **Ensure there are multiple avenues for vulnerable communities to engage with planning and implementation processes, and ask each community for their ideas on best practices for outreach.** A sentiment that was voiced by at least four interviewees was the desire to see the city iden-

tify and partner with local community leaders that could serve as trusted community liaisons in order to reach and engage Boston's most vulnerable residents. Another interviewee recommended Boston explore a process like that used in Seattle, where the city organized events for local organizations to first engage in an assessment of the state of their neighborhoods. Later, this conversation was expanded to brainstorm what could be done through local partnerships to address the concerns raised.

- **Diversify the time and location of public meetings and hearings so they are made more accessible.** A number of interviewees took particular issue with having city council meetings on Wednesdays at noon. This is a time when most residents and activists must be at work, and those who work hourly would need to weigh the cost of taking time off from their jobs to participate. Other constraints that emerged from the interviews was that more attendance could be possible at meetings if food, translation services and childcare were provided. More generally, there was a desire to see important meetings take place in the community that would be affected, and held after the work day or on Saturdays.

- **Encourage greater formal and informal collaboration between city departments before a project or policy is implemented.** Among community organizations, there is still a widespread sentiment that government offices work in silos. Climate change will impact housing, transportation, food access, access to employment, health and development to name but a few topics which have their own offices or departments in Boston. This kind of approach is akin to how MONUM approaches problems – by bringing in departments that are in some way affected by an issue and can provide their area expertise.

Promoting Distributive Justice

- **Consider the creation of an equity checklist to which future projects must abide, particularly construction projects.** An equity checklist would be a list of considerations that must be adequately addressed when contemplating a future project, but particularly new buildings and land use development in the city. Such a checklist could help direct projects and policies to repairing past injustices and promoting future resilience. Considerations could include how a project might impact the existing community, for example if it contributes to increased gentrification, whether the project is built to withstand the predicted climate impacts for that locality, what the impact on local infrastructure, health and environment the project will have on the community.



Booming development in the Seaport district, 2014. Copyright Sarah Nichols.

- **There are many co-benefits to creating deeper and more formal partnerships with local community-based organizations supported through municipal grants or resource sharing.** The sentiment from at least five different community organizations was that it would be ideal if the city was providing resources directly to community organizations for local resilience projects and resident education. One interviewee brought up the idea of yearly climate justice grants provided by the city to local organizations for projects that are based in the neighborhood but address both social justice concerns and are in line with the city’s climate resilience goals. In terms of providing educational assistance, three interviewees noted the need for better outreach to limited-English speaking residents. Organizational staff are often fluent in one or more languages spoken in the community and can translate program details to residents on behalf of the city, given the proper resources to do so.

- **There is great desire to see quick implementation of Community Choice Energy (CCE, also referred to as municipal aggregation), and a desire to see greater municipal support of community energy generation projects.** Now that the CCE order (which would set the default mix of renewable energy for residents and small businesses at 5% above the standard set by the state and offers a 100% renewable option) has passed the City Council and been signed by the mayor, many organizations interviewed were in support of expediting its implementation. However, a few activists and organizations expressed wariness that CCE was a campaign primarily pushed by wealthier neighborhoods, and hinted that it did not enjoy the same level of interest from lower-income communities and communities of color. This was seen as an important concern to be addressed in the rollout, outreach and design for the new program. Additional concerns



Photovoltaic solar arrays already help generate electricity for the Boston Nature Center in Roxbury. The Center has also created an educational experience out of their array . Photo by Christina Schlegel.

were raised around the framing of municipal aggregation in Boston, in particular, how it has at times been framed as having a detrimental financial impact on marginalized communities through increased energy costs - which was seen as a misrepresentation of the data. Both local environmental organizations interviewed and [expert testimony and research](#) delivered at the October hearing on CCE tell a different story – one of savings for residents. In this sense, CCE could be particularly beneficial to low-income residents and communities of color. Indeed, [recent research](#) suggests that in the Massachusetts cities and towns that have already adopted CCE, the energy savings in those communities for the first half of 2018 will be approximately 19% per household.

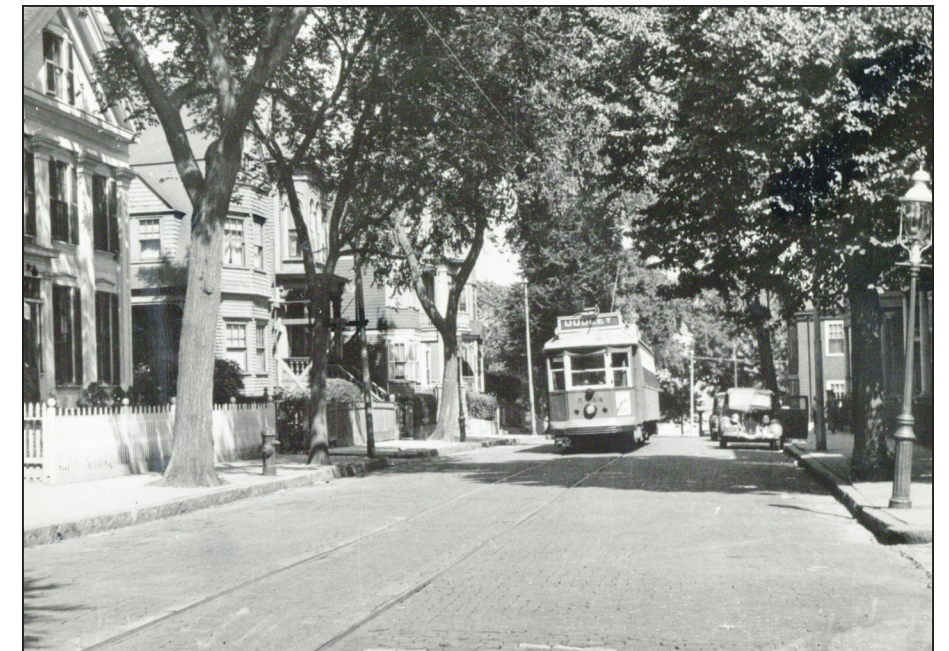
To make renewable energy installation more affordable, one interviewee asked how the city could encourage rooftop solar in communities where

homeowners may not be able to afford the upfront cost of installation since much of the current barrier to renewable energy installation is access to funding. A number of interviewees pointed to Codman Square as a successful community shared solar project that could be emulated.

- **Revisit Boston’s evacuation routes and emergency response plans in coordination with both community groups and local businesses.** One interviewee suggested that community resilience to disasters could be thought about in a hyper-local way through the creation of neighborhood hubs (community centers, but also local businesses) that were supported by the city to serve as shelters as well as information and emergency resource distribution centers. Localized networks for emergency management might be crucial to reaching those with the least ability to relocate. And while the city has an evacuation plan, no interviewees who discussed the topic were familiar with it. Multiple ideas were floated to make this information more accessible included the creation of an emergency shelter locator and preparation how-to mobile application or website.

- **Explore programs that would increase tree cover and the survival of newly planted trees.** Interviewees felt that neighborhoods such as Chinatown and Mattapan lacked tree cover relative to wealthier neighborhoods. Among the ideas that emerged for increasing urban tree cover, two interviewees wondered whether the BPDA could encourage tree planting through development requirements, such as one tree per floor, depending on a building’s square footage. The interviewee proposed that the city could use the yard waste it already collects and turns into compost to build more absorbent tree pits when the trees are first being planted, noting that the City of Cambridge has already implemented such a program.

- **Since transportation access is intimately tied with social, economic and environmental resilience in Boston, ensure that future transportation projects are both highly equitable and are themselves resilient over the long term.** Concerns around future transportation development were widespread. Two interviewees saw the issue as mainly a lack of funding for public transportation and suggested that future transit-oriented development also be required to contribute to a fund for public transit upgrades. Another interviewee questioned why Boston did not charge for resident permit parking stickers when nearby Somerville charges \$40 and Cambridge \$25 annually per car. In the Roxbury and Dorchester area, the sentiment was that residents do not bike in large part because there is just a lack of biking infrastructure. Two interviewees recommended that the city revisit the [Boston Bike Network Plan](#) from 2013. Other distributional justice ideas that emerged included better enforcement of the state’s idling law, a congestion charge, an increase in charging stations for electric vehicles, and transportation planning that incorporated into the design process better and easier access for nearby residents to environmental amenities.



Streetcar service on East Eighth Street in South Boston, 1940. It has long since been replaced with bus service. Copyright [City of Boston Archives](#).

- **Consider reinvigorating the Conservation Commission and directing some Community Preservation Act funds towards climate just projects.** The Boston [Conservation Commission](#), which is tasked with protecting the city’s urban wilds and wetlands and reviews projects in or near these areas, is not at present fully staffed.⁶⁵ Similarly, two interviewees suggested that the recently passed [Community Preservation Act](#) could be used to direct funding towards historically marginalized communities and projects that touched on climate change and justice, with the expectation that these communities would be part of the decision-making process.
- **Promote and support a local food economy that reduces Boston’s vulnerability in terms of food procurement, creates local employment opportunities and helps to reduce food waste.** The city is already requesting proposals for a [Zero Waste Plan](#), which will outline recommendations for the city, institutions, businesses and residents on how to reduce overall trash and increase recycling and composting. In addition, four interviewees highlighted ways in which the city could also support and grow local food production. One interviewee lamented at how complex it is to get departments to work together to streamline the urban farm approval process. Another interviewee recommended Boston follow the lead of other cities that collaborate with local farms and organizations and advertise that SNAP and other food credits can be used at farmer’s markets.
- **Create a hub or website where neighborhood programs, organizations and events can be found and collaboration can more easily occur.** Multiple organizations expressed enthusiasm for a localized source of information (likely a website) that catalogued information regarding what projects and topic areas other local organizations were working on, provid-

ed contact information and included an events calendar for both relevant city meetings and organizational events. One interviewee suggested that such an information hub could also be neighborhood specific, and would ideally provide updates on city and community-based climate (or other related) projects for activists and local residents alike.

- **Work with neighborhoods to decide what data can or should be tracked to evaluate the effectiveness of programs and policies.** Measuring the equity of program or policy outcomes is fraught with potential issues. An interviewee cautioned that metrics can get too technical, and can end up providing a false sense of getting things done, when in reality equity is very complex and qualitative. Qualitative and community-informed frameworks were seen as the preferred evaluation tools. Another interviewee suggested creating something akin to the [Whole Measures](#) evaluation framework developed by the Center for Whole Communities in Vermont, which incorporates measures for social equity, rights, economic vitality, civic engagement and ecosystem health.⁶⁶



Promoting Just Recognition

- **Recognize that climate change and climate justice are often topics considered too complex and too far off to effectively engage residents, and that the framing of climate inequities and impacts should speak to the existing, day-to-day challenges faced by residents.** The interviewees urged “back-dooring” climate change education and discussions: making the main focus a community’s immediately felt needs and concerns, and then weaving in how those needs and concerns and climate change are connected to help illustrate for residents how their day-to-day

lives could be affected by future weather changes, storms and sea level rise. Moreover, two interviewees urged the city to come to resident meetings ready to detail what climate resilient projects are already underway in that specific neighborhood.

- **Consider the co-benefits of greater regional collaboration with neighboring cities and the state.** One of the primary benefits of a regional approach is that it allows for the pooling of resources (staff time, expertise, community know-how) so that each city or town does not need to reinvent the wheel.⁶⁷ It also allows for a longer term strategic climate planning focus and ideally creates more effective solutions to regional concerns (such as sea level rise, evacuation planning, management of shared infrastructure and transportation access). At the executive level, the [Metro Mayors Climate Preparedness Taskforce](#) helps to coordinate regional planning, particularly around vulnerable areas and shared infrastructure. How groups and taskforces like the Metro Mayors have led to equitable climate actions can be better communicated to the Boston public at large.
- **Find avenues through which the city can be a community partner, and support the justice and climate work already being done in neighborhoods.** Multiple interviewees encouraged the city to come to a community ready to listen, and to ask, “what is it you want to see here?” The city should be ready to support local organizations with their projects that can simultaneously help the city achieve its larger climate goals. A common takeaway was that the city could put greater effort into partnering with community organizations, and could think more broadly when considering potential

partner organizations. This engagement is also vital for trying to mend any mistrust of the city that may exist at the local level.

- **Make a more robust link between the racial equity work being done by Mayor’s Office of Resilience and Racial Equity (MORRE) and Boston’s predicted climate vulnerabilities.** Multiple interviewees expressed enthusiasm and support for MORRE and the Resilience Strategy, and hoped that the city would create an even stronger link between underlying social, economic and racial inequities and climate change going forward. Urging the city to more thoughtfully approach the intersectionality of existing and future issues – for example, how climate change affects housing displacement, transportation access, food access, and racial and economic equity – was seen as an immediate area for improvement and engendered widespread support from interviewees.
- **Update onboarding training for city employees to include tools and learning communities to think about their work through the lenses of climate change and justice.** At least two interviewees felt that, at times, the city’s engagement with marginalized communities amounted to “checking off an ‘Environmental Justice’ checkbox”. Additionally, it was unclear to these interviewees how the feedback from justice-oriented organizations was being integrated into the city’s policies and processes. Another interviewee recommended that Boston have training for city staff (including planners, department heads and interns), which provided them with the tools to approach their work through the lens of equity or justice. Such training could take place during the hiring process and be supported by an ongoing program that cut across city departments.

- **There is a general desire among community organizations for the city to share more of the data it uses internally and to work with neighborhoods to establish baseline data.** An interviewee remarked that the city sits on a lot of data that would be useful to residents and organizations at a more local level if it was shared. Among local organizations, there was a consensus that if the city publicized data related to policy changes, development projects, and infrastructure investments that residents would be better able to provide input and feedback to the city, particularly on the impact of these changes on their lived experience. Another benefit would be giving residents and organizations the tools to pinpoint geographical hotspots.
- **Seriously consider creating a web platform similar to (or integrated into) the one being created by MORRE for residents to monitor and comment on the implementation status of climate projects and policies.** To further data democratization and transparency around project status, one interviewee suggested that progress towards climate actions and projects could be integrated into the online implementation tool currently being developed by MORRE. By adding planned climate actions and projects to such a tool, the links between existing concerns, systemic injustices and future resiliency planning can also be more easily made for residents and city officials alike.
- **Consider divesting city pensions from polluting companies.** Since these pensions are in part funded through local taxes and fees, one interviewee suggested divesting city pensions from fossil fuel companies that have contributed to climate change. The environmental externalities (air pollution, asthma and other local health impacts, climate change) caused

by these companies harms all of Boston residents - but particularly environmental justice communities - so the move to divest would signify that the city refuses to profit when its residents are negatively affected.

- **Create a Community Climate Justice Committee.** Going forward, four interviewees stated that one way of bringing the concerns of the city's most vulnerable residents to the forefront was engaging them in the planning process in a substantive way through something like a permanent Climate Justice Committee. Such a committee would include representatives of local justice-oriented and climate advocacy organizations. Committee representatives would be compensated for their time, but would also be held responsible for serving in a liaising role between area residents and the city, tasked with elevating concerns of marginalized residents and also with hosting community meetings (or finding other effective ways to educate and update residents) on any relevant projects.



I Jackson Square Mural. Image by Christina Schlegel, 2015.

- **Explore ways the city can use its resources to help connect local producers with local markets, and consider requirements for worker safety and environmental protection among contractors.** One interviewee expressed concern that workers in the local recycling and waste industry are often lack health and safety protections and that the city’s Living Wage Ordinance does not extend to its recycling contractors.⁶⁸ Another interviewee asked whether the city could play an expert or facilitative role in helping local food growers contract with and institutions, businesses, grocery stores, or even with the city itself.
- **Weigh the benefits of a climate rights ordinance. Boston passing an ordinance that outlined the city’s commitment to climate justice was seen as having both benefits and drawbacks.** Two interviewees expressed little enthusiasm for an ordinance that could amount to nothing more than words on paper. However, other interviewees saw the potential for a climate justice ordinance to be seen as a clear and public statement of the city’s principles.

Recommendations for the City Council

I. Putting City Council Action in Context

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, municipalities have experimented with policies such as carbon taxes, rebates, altered building codes, public-private partnerships for climate planning, innovation incubators, and streamlined permitting for renewable energy projects.⁶⁹

Cities across the U.S. are realizing their responsibility to be climate change mitigators: and 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.⁷⁰ And as the level of government closest to the people, cities are in a unique position to be the government most receptive to participation⁷¹ and responsive to the needs of its constituents.

Climate justice requires not only access to decision-making for disadvantaged groups, but also just distribution of the benefits of climate resilient

action. To do both properly demands that those in power acknowledge past and current injustices, recognizing that truly sustainable communities are built when no one is left behind. Boston has already taken steps towards building a more just and resilient city through Climate Ready Boston, Greenovate, the Mayor's Office of Resilience and Racial Equity (MORRE) and the Mayor's Office of New Urban Mechanics (MONUM). But it is a challenging goal; there is no silver bullet. One ordinance will not cut it, nor can a single program. Creating a climate just city is not a task that fits neatly within the silos of a single department or community engagement process. Nor should it.

There is a popular African proverb that states, "it takes a village to raise a child." It is no different with transforming Boston's approach to climate change, inequity, energy, food, emergencies, transportation, housing and development, and even the process of governance itself. Locally, transitioning to a climate justice framework for action will require the support of city departments, municipal employees, the City Council, the mayor, local organizations, Boston's business community and its residents. We cannot continue to do business – or development, or governance – as usual. It will require collaboration on a grand scale, and a wholehearted commitment to justice from all parties in the decision-making and policy implementation process. Let there be no doubt that this is a daunting task. It is important to avoid assuming that climate justice can be realized by government alone - it will take a city to build the future we want.

The question then becomes... how? In Boston community organizations, concerned residents, environmental activists and local businesses have already taken action to better align their work with the principles of climate

justice. And the city's understanding of the intersectionality of climate change and preexisting inequities has evolved significantly. But there is more that the city can do.

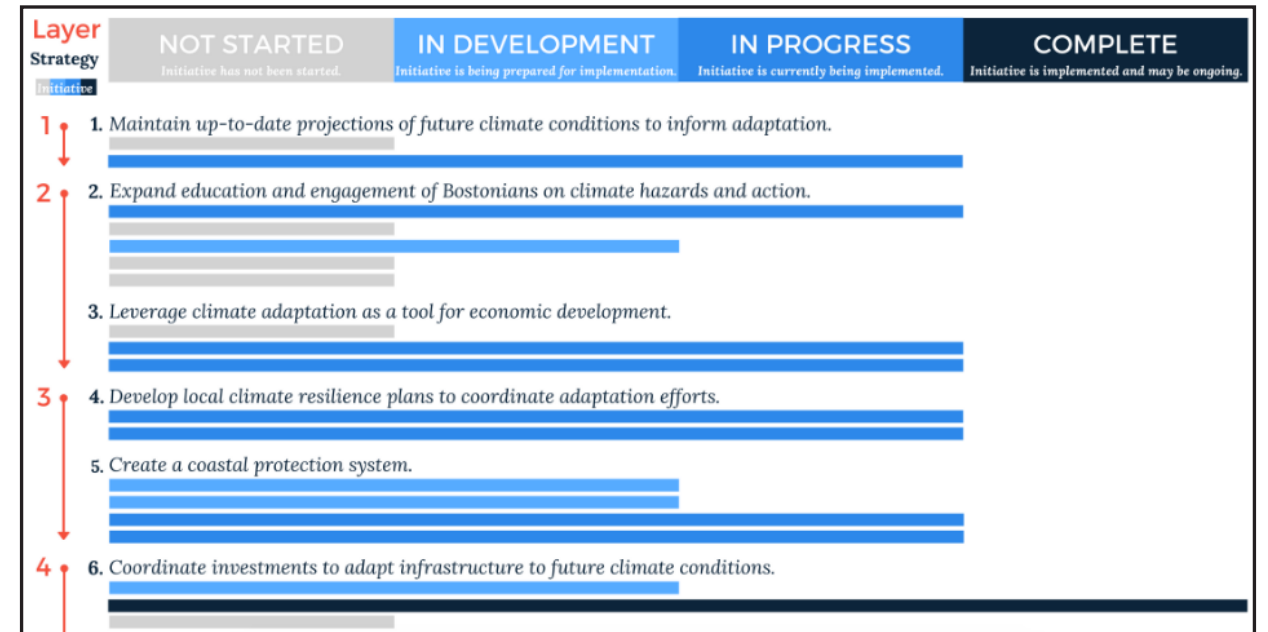
The section below describes a number of actions that the Boston City Council could explore in its role as a representative body for the people to promote climate justice locally. The ideas for action are informed by the interviews conducted for this research, as well as the academic literature on climate justice and the experiences of other cities across the nation. Actions have been framed to fit within the powers of the Council, which include passing ordinances (local laws) and resolutions (a formal expression of municipal principles or will), and holding working sessions (to revise legislation and review reports from Council committees) and public hearings. However, these designations are suggestive only. They are meant as openings to enhance how climate justice is realized in the short term, and as avenues to elevate this conversation with communities across the city.

II. Procedural Justice: Making the Decision Table Accessible

Ordinances

- **Create a Community Working Group or Advisory Council for Climate Justice.** The experience of other cities exemplifies how crucial the involvement of local leaders is to integrating justice into climate work. Seattle, Oakland and Portland have all created standing community committees with a focus on climate and equity, whereas Boulder and Springfield have benefitted enormously from organized environmental activist coalitions outside their city halls. The purpose of such a standing group of community members and organizations would be to more equitably distribute power in the decision-making process and prioritization of climate projects.

A working group or advisory council would provide an additional and permanent avenue for the community to voice their concerns to the city. Not only that, it would aid in building greater trust between city government and local communities, which is crucial for any further partnership. And finally, it would make good on a promise made in 2007, when creating Community Climate Action Committee was first proposed by former Mayor Menino. There is no shortage of local neighborhood, justice and environmental organizations and alliances that could be consulted to determine the appropriate membership makeup of the group or council – including the Green Justice Coalition. Ideally, funding would be made available for members, either through the city directly or a foundation partner, to ensure members’ abilities to take on this role over the long term. This is an idea that many interviewees wished to see realized.



Climate Ready Boston's recently released Progress Tool. Image from Climate Ready Boston. The progress bar measure where an initiative is on the spectrum from; "not started" to "in development" to "in progress" to "complete", in a similar fashion to initiatives outlined in the recently released Resilience Strategy.

- **Require that future city plans and projects contain timelines and easily accessible updates.** A specific, measurable and publicly available timeline would go a long way towards addressing multiple community concerns. Common among interviewees was the desire to know exactly how far along the city (or a city department) was in its implementation of projects, plans and promises. Updates and timelines for action demonstrate to residents and organizations that the city is serious about implementation, and that the city has thoughtfully and strategically considered how it will reach each stated goal within a given and measurable timeframe.

Outreach is one half of creating procedural justice, but sustained information sharing is the equally important second half. It would not only embody transparency in municipal governance, but create a more informed community and help to build trust in government. Greenovate is beginning to publicize updates through its [Climate Ready Boston Progress Tool](#) and the Mayor's Office of Resilience and Racial Equity (MORRE) is creating an interactive space to go with its Resilience Strategy. Consider how the city could more formally institutionalize climate action progress updates through plan websites, hubs, community outreach events or through other methods. Ideally plans and projects would also describe which office and partner organizations are responsible for spearheading implementation so community can inquire and engage directly with project leaders.

Resolutions

- **Call for climate justice as a framework for action to be institutionalized across all city processes, plans and policies.** A resolution calling for the city to adopt a climate justice framework accomplishes many goals. Currently, many climate actions are funded by non-government actors such as foundations and there is a widespread community desire that the city put more of its own “skin into the game.” A resolution would signify the city’s commitment to addressing not only climate change, but to do so in a way that also addresses systemic and institutional injustice. Such a resolution sets the expectation for all city offices and the actions that they take to be aligned with the resolution, which is in its essence a statement of city values. Through MORRE and the Resilience Strategy, Boston has already committed to institutionalizing the advancement racial equity into all future city plans, policies and processes. Given this existing basis, MORRE’s racial equity framework could be extended to include climate justice principles and its everyday integration be supported through a City Council Resolution. The City of Springfield’s [Climate Justice Commitment](#) could be used as a template. What the Boston framework should consist of, however, is something that requires community input.

Hearings/Working Sessions

- **Host community listening and progress update sessions in neighborhoods across the city, particularly in environmental justice communities.** Such listening sessions would be politic and productive for a variety of reasons. Portland’s success with integrating equity considerations into its Climate Action Plan owe a great deal to the city’s listening workshops

with local organizations. As residents, local businesses and organizations have remarked, information about Boston’ climate actions do not currently “trickle down” to the community level. And not many residents have the time to read hundred-page plans. Moreover, sessions that include one part progress update and one part listening achieve multiple objectives. The purpose of having a listening session component is to draw out resident’s lived experience of climate change and injustices so that it can inform future city action. It can show residents the city is committed to hearing and integrating local concerns. How this feedback will be integrated into future actions must be clearly and transparently expressed and was noted by interviewees as being absolutely critical to maintaining their interest in staying engaged and in building trust.

Interviewees hoped that any future engagement with residents and organizations would also include an element of climate education and progress updates relative to any actions currently being taken in that specific neighborhood. The progress update and climate education component of such sessions would serve to inform residents of any collective actions that the city is implementing locally, which would help address existing concerns that the city is not actively planning for resilience in a particular neighborhood. Progress updates on neighborhood-scale projects also show the city’s commitment to each community, and allows residents a view into the proactive work the city has already taken. As with any public outreach, such sessions must be wary of employing expert language that is not accessible to residents and events held at times and in locations that negatively affect local participation.

- **Start a community discussion around participatory budgeting for neighborhood-scale climate projects.** Participatory budgeting is a form of direct democracy, and allows residents to decide what type of projects are most meaningful to their community and likely to make the most difference. Contrary to top-down planning, participatory budgeting allows residents to engage in almost all parts of the decision-making process. If executed thoughtfully, it may help to mend some of the distrust felt towards government in traditionally more marginalized neighborhoods. Boston already allocates \$1 million dollars annually for a participatory budgeting program geared towards youth. Two interviewees openly wondered if participatory budgeting could also take place in the climate action realm. The intricacies of such a program would have to be ironed out with the community but might take the form of a dedicated amount that is distributed based upon the results of a community-led project competition or an online voting process where residents can specify which city actions they would like to see implemented first.

III. Distributive Justice: All Residents Should Benefit Equitably

Ordinances

- **Require that contractors receiving public funding or supplying municipal offices or city events meet certain sustainable and living wage requirements.** Sustainable procurement is an idea that was proposed by a few interviewees. Other potential requirements could include contractor adherence to the Living Wage Ordinance (specifically in the context of recycling and composting contracts), as well as sustainable practices and the use of environmentally friendly materials. While it is not possible under state law for the city to preferentially favor local suppliers and contractors, it could explore mandating contractors meet certain requirements that advance climate justice. The purpose of such action is to mainstream more equitable and environmentally friendly practices within government operations. This shows the city has a universal commitment to climate resilience that extends to the environmental footprint and equity implications of its own supply chain. It demonstrates the city’s commitment to “walk the walk.”

Resolutions

- **Urge the creation and use of a climate justice or climate equity checklist for future development projects.** In large part, concern about how Boston will meet its climate goals stems from what many interviewees see as a development boom with far too little review of the impact of such projects. Interviewees wished to see future development projects undergo more rigorous review before approval - particularly to address the develop-

ment’s expected environmental, social and economic impacts. Are developers of buildings close to public transportation adequately resourcing the city for the expected transit use of future tenants and owners? How do new luxury apartments, offices and homes affect livability for current residents of a neighborhood? While the Boston Planning and Development Agency (BPDA) is in the process of creating a more demanding climate checklist for new construction, the current checklist remains a set of recommendations without legal enforcement power.

The authority to create and change zoning and building requirements rests primarily with the Zoning Commission in Boston. However, the City Council could use its position to put forward a resolution that recommends future development projects and other city actions consider and address their impacts through something like Oakland’s [Equity Checklist](#). Such a checklist would need to address primary resident concerns, including transit access; localized environmental, health, and housing affordability impacts; and its impacts on measures of equity or inequity. It is important

Economic Equity

Projects that achieve Economic Equity have the following characteristics:

- ☐ Workforce development
- ☐ Support to Community Land Trusts (CLTs)
- ☐ Anti-displacement protections
- ☐ Benefit to impacted EJ communities

Social Inclusion

Projects that achieve Social Inclusion have the following characteristics:

- ☐ Includes leadership by members of frontline communities
- ☐ Accommodation of Disabilities
- ☐ Improved Mobility
- ☐ Provide Education
- ☐ Resident Engagement and Decision Making

Good Health for All

Projects that achieve Good Health for All have the following characteristics:

- ☐ Mitigate development impacts and improve quality of life in PDA/ PCA overlays
- ☐ Create buffers from harmful infrastructure and activity
- ☐ Placemaking
- ☐ Create a healthy and pleasant local environment

I Points have been summarized from the full checklist. The full Oakland Equity Checklist is available [here](#).

that the City Council consider any action that would require or encourage developers to think about the systemic and long-term impacts of a project, as this major concern will undoubtedly continue to grow among residents as urban development and redevelopment increases.

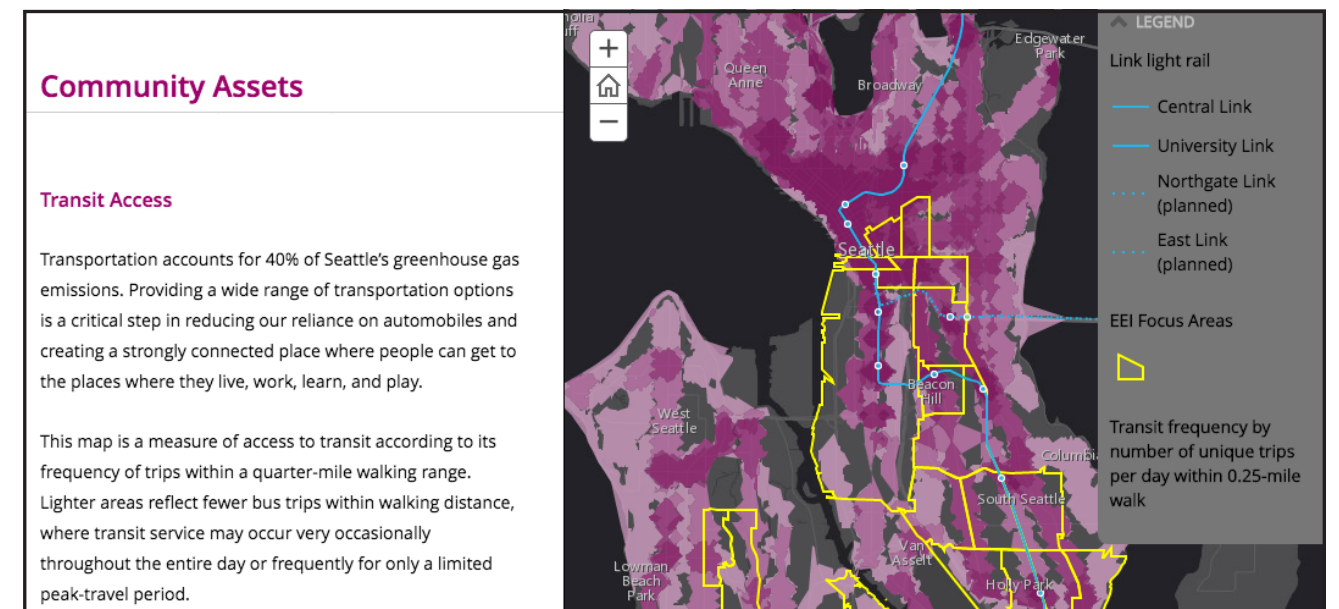
• **Pledge that future city plans, policies and processes will no longer be siloed within one department and describe proposed avenues for departmental communication.** The existing drawbacks of separating policy areas into departments leads to intentional (but mostly unintentional) separation of idea generation, decision-making, policy proposals and implementation of projects. In Boston, this has resulted in next-door projects having completely separate community engagement events and different departments not knowing they are speaking with the same organization about a similar topic as one interviewee experienced. In an era where the long-term, and non-obvious benefits and consequences of any actions are expected to be considered, internal communication between potentially relevant departments should be the norm. In pledging city departments to a more institutionalized expectation of policy and project coordination, it will be useful to lay out an explicit framework for how coordination is expected to take place.

Hearings/Working Sessions

• **Move to implement Community Choice Energy (CCE).** Moving the city to renewables is not just an action that shows Boston’s preference for an environmentally friendly energy source over a polluting one, but represents an investment in the local economy as well. Increasing Boston’s baseline percentage of renewables in its electricity mix could help spur demand for

renewable energy development and green jobs in the region. Increased renewable development in the region would also decrease the price of renewable energy for Boston. CCE has widespread support from Boston’ environmental organizations and activists, and they are eager to see the city deliver on quick implementation following the recent passage of the CCE Order. In addition, community organizations have stressed the need to inform residents – particularly low-income residents and residents of color - of their new renewable energy options and potential savings. Finally, this educational outreach should help residents identify renewable energy scams sent to them through the mail and discern them from legitimate programs. A working session or hearing could help flesh out how such community outreach should take place.

- **Weigh the merits of creating an environmental equity assessment or index, what metrics would be included in such a tool, and how it would be used.** Using models such as the [Environmental Equity Assessment Tool](#) co-created by the City of Seattle and local community partners or the [Vulnerability Index](#) crafted for Springfield, Boston could design and build its own tool. Metrics tracked could include measures of health such as asthma rates, demographic characteristics, environmental factors such as tree cover, access and opportunity factors such as distance to public transportation or bike sharing programs, among others. The Trust for Public Land’s [Mapping Portal](#) is likely the tool that comes closest to this currently. It is crucial that this tool be readily available to the public and be updated consistently so progress on the metrics included can be assessed. Equally important is identifying how precisely this tool will be used by planners and policymakers on behalf of the city. Such a tool comes with inherent limitations, including that quantitative and spatial metrics



1 Screenshot from Seattle’s [Environmental Equity Assessment Pilot](#).

are more easily monitored and mapped as opposed to qualitative metrics such as community stories. A hearing or working session on what metrics to include should seek to uncover the measures most useful to vulnerable communities. The concerns with creating such a tool are that largely quantitative measures could imbue the city with a false sense of progress when progress should be measured by the community impacted, and that the tool could be used to further geographically separate or segregate the city.

- **Review the status and scope of Boston’s Conservation Commission.** It appears to some interviewees that the Commission is defunct, and unable to effectively review development projects that could impinge on natural areas in the city. By revisiting the Commission, the City Council can reinvigorate this form of environmental project review and possibly expand the Commission’s scope to reflect 21st century challenges by incorporating the predicted impacts and co-benefits or co-burdens of climate change as well.
- **Engage the broader community to brainstorm how programs such as those offered through Renew Boston can be made more accessible.** Many interviewees in these communities commented that while their residents were interested in weatherization and energy efficiency, the programs available through the city were not within their reach for multiple reasons. For some, it was a language barrier – the forms and assistance were in English. For others, there were economic barriers – their house

could not pass structural muster or meet other building requirements in order to qualify. Some applicants never heard back from the companies responsible for program work, even after enlisting neighborhood organizations to help them. This necessarily renders Renew Boston inaccessible to those who might benefit from it most.

Greater access to energy efficiency and weatherization in vulnerable neighborhoods helps to address these residents' energy vulnerabilities (which, in some cases, is a choice of whether to pay the heating bill or the mortgage). Expanding access also shows Boston is effectively prioritizing its most vulnerable communities. Council action should be primarily directed at making Renew Boston more accessible to those with limited-English proficiency and limited economic means. The City Council could host a series of hearings or public events to gather input from communities that have experienced these issues or experience energy insecurity (extreme summer heat with no air conditioners, or extreme cold with badly insulated buildings or expensive oil heat). Initial ideas include extensive translation services, implementing a case management system, and partnering with local builders through loan or grant programs to help homeowners meet program requirements.

- **Discuss integrating climate resilience education into the curriculum of Boston's public schools.** Recently a student advisory group was successful in adding climate change to the science curriculum taught at local K-12 schools. A surprising number of interviewees for this project stressed the importance of educating and engaging the next generation in climate resilience. Ideas stretched from educating children and youth on topics like climate justice to providing localized field trips and youth engagement

projects such as urban gardening or visiting the Boston Nature Center to learn about sustainable building practices and solar energy generation. Integrating discussions of climate change, alternative energy and local climate impacts into the BPS curriculum - with connections to local organizations and opportunities for engagement - were seen as ways to inform, engage and prepare the next generation of residents.



"One of Boston's many blue Evacuation Route signs, 2008. Copyright [Jeramey Jannene](#).

- **Revisit the city's emergency plans and evacuation routes.**

Multiple interviewees expressed concern and confusion around the city's evacuation routes. Given recent disasters including Hurricanes Harvey and Irma, it is appropriate that Boston consider what the impacts of a major storm would have locally and help to prepare and inform residents what to do and where to go. The Office of Emergency Management oversees preparedness and helps communicate resources and plans to the public. The City Council could propose a hearing with officials from Emergency Management to collect ideas and concerns from the community regarding what evacuation or emergency plans currently exist.

Some initial issues to consider include evacuating the elderly, those with pets, and residents without a vehicle. In partnership with relevant city departments the Council could assess what resources could be made available to the public to increase disaster resilience. Potential resources include the creation of an evacuation route mobile phone application or website and innovative ways to educate residents on the location of their nearest shelter, though additional ideas should be gathered from public engagement. A plan for regular reevaluation of the city's evacuation routes given the projected impacts of climate change is also recommended. A discussion of these ideas could be combined with a potential upcoming City Council hearing which seeks to address the city's current evacuation plan and how physical infrastructure would respond to a natural disaster.⁷²

IV. Just Recognition: Addressing the Root Causes of Local Inequity

Ordinances

- **Include an overview and toolkit for climate justice and equity in new hire training or annual training for city employees and officials.**

MORRE is currently in the process of creating a resilience and racial equity toolkit for city employees to aid them in ensuring questions of equity are being asked in relation to their work for the city. The City of Seattle currently has a [Racial Equity Toolkit](#) which may serve as a starting point for discussion. Trainings and a toolkit could be tied to MORRE's proposal to create racial equity trainings for city employees. This may seem similar to a resolution for a climate justice framework, but trainings and a toolkit operate at the personal level and are designed to change the behaviors of those with power and help educate them on the interconnections between their actions and justice or injustice.

- **Divest municipal investments from fossil fuels.** Similar to New York City's recent [pledge to divest](#) roughly \$5 billion in pension funds from fossil fuels within five years, the Boston City Council could consider divesting all public funds from any business that has been shown to cause harm to the environment and public health, particularly as these effects disproportionately impact communities of color and lower-income communities in Boston and beyond. This is both a symbolic and substantive gesture in recognition of the past and present harms suffered by these communities. Divestment approved by the Council would need the mayor's signature and may require passage by the Massachusetts State House.

Resolutions

- **Commit the City of Boston to locally-specific climate justice principles or climate rights for residents.** A resolution of this kind would be a public commitment and stance that the city will promote climate justice and could be based off of a similar [Commitment](#) in Springfield. It is important to note that this is more of a symbolic and aspirational gesture since a resolution is not legally enforceable. However, potential language can be crafted through a close examination of principles to which many international community-based and governmental organizations have committed, including the [Principles of Environmental Justice](#), the [Bali Principles of Climate Justice](#) and the United Nation’s [Message on Human Rights and Climate Change](#).

Hearings/Working Sessions

- **Consider increased funding for EEOS and managed funds for community projects and positions.** Multiple interviewees recommended that the city “put more skin in the game”, and specified that one method to do so is to provide greater funding to the city’s Office of Environment, Energy and Open Space (EEOS) and Greenovate (the community outreach office for EEOS), so that their staff and community outreach can be expanded. Additional ideas included the creation of a climate justice grant fund managed under EEOS (or another relevant office) that would distribute funding to community-based organizations and committed individuals for local projects that met city climate goals and followed the principles of climate justice. The local grants could also be used by organizations to help local residents make the necessary repairs to be eligible for weatherization and energy efficiency programs. Similarly, a grant program could be used to

create climate justice neighborhood liaison positions. These liaison positions would be tasked with disseminating educational and programmatic information from the city to residents and bringing feedback and community concerns around current and proposed actions back to the relevant city department. Interviewees who talked about this idea noted that trusted liaisons would include existing environmental justice leaders.

- **Explore how the city can make green jobs available to Boston’s most economically, socially and environmentally burdened residents.** Certain areas of the city - communities of color in particular – experience higher levels of unemployment and poverty relative to the Boston average. Creating economic opportunities in sustainable industries for disadvantaged residents is a form of climate justice because it actively helps those communities that have benefited least from the fossil fuel economy to become part of a sustainable economy. Such programs help to create a local workforce that is fluent in climate resilient practices and allows residents that may have previously lacked access to higher paying jobs an avenue through which to learn highly desired skills.

The City Council could engage the community in brainstorming programs that would not only provide training for future employment in fields such as sustainable development, renewable energy technology or green construction, but deliver these benefits through projects based in the community. These training programs would ideally be directed towards Boston’s most disadvantaged residents as an avenue to help them plug in to rapidly growing fields that provide a local and global benefit. Similar workforce training programs that provide educational opportunities to residents of color may take shape through the city’s Resilience Strategy, so any new initiatives should focus on local climate resilience.

• **Brainstorm how the city can better support the growth, leadership and collaboration of local justice organizations.** The city’s climate actions are made stronger and more effective by partnering with strong local leadership. By supporting the growth and collaboration of local organizations, the capacity of the city and its residents to achieve more ambitious climate justice goals is expanded. Many interviewees expressed enthusiasm for any city programs that would help them grow their local partnerships and show local leadership. More precisely, this kind of municipal support could take the form of providing needed resources such as: educational materials on the local impacts of climate change and neighborhood specific projects and programs (such as Renew Boston) in locally spoken languages, an online platform that fostered communication and issue collaboration between local groups (through forums or an open directory of organizations and their campaigns), technical support (helping communities connect with solar businesses or vulnerability mapping experts), and other resources. Other resources could include open source climate mapping tools, city-funded translation services for events, brief one-pagers on city plans or local projects for community organizations to distribute, and contact information for the city’s various initiatives, plans and projects.

Given the existing environmental and justice-oriented campaigns of numerous Boston-based organizations, the city could also enlist their expertise or issue local invitations to partner on future initiatives. Ideally, these resources could be found or requested in one centralized location (such as a website) or office. Crucially, this sharing of resources and knowledge by the city allows for community self-determination and creates a positive benefit for the city - municipal actions can benefit from informed local input and collaboration.

Conclusion

I. Limitations

Climate justice is an expansive framework with far-reaching, systemic implications. As such, this report can only serve as one step in a larger and sustained dialogue between community residents, activists, local businesses, experts and government. The views and assertions represented herein, while informed by conversations with city employees, experts and community organizations, are my own. In searching for organizations with which to speak, I was unable to reach groups in all neighborhoods of Boston, but took additional effort to seek out interviewees that would represent those neighborhoods that have historically been underrepresented. Not included here are voices from the neighborhoods of Charlestown, Hyde Park, Downtown, West Roxbury, South Boston and Fenway. Out of the 65 community organizations contacted, 31 interviews were conducted.

It is instructive to explore why some of the remaining organizations could not or did not participate. For some, talking about the future impacts of climate change may be too far removed from current social, ecological, and economic struggles to warrant their engagement. Talking about climate justice comes with some inherent privilege in the eyes of many activists – 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 from the broader Boston community.

II. Takeaways in Brief

In a nutshell, what would it take to make the City of Boston more climate just? In gathering data and feedback for this report, seven primary takeaways emerged:

- 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 its most vulnerable residents.
- Climate justice and addressing historical distrust requires that a city institutionalize better cross-departmental communication and a justice lens through employee training. 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.
- Cities have shown their 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. Resources may include: funding and technical support for community projects, translation services and technical assistance for retrofitting and renewable energy programs, and providing community leaders and their organizations with ready-made information on the local impacts of climate change and city actions to assist their efforts in resident education.
- Another important method to build local trust is through regular updates on city projects and plans that are easily accessible and understandable. This type of communication thus allows for some form of iterative community feedback on project implementation. Updates may take the form of an interactive city website, or a progress report like the one created by the City of Portland.

- Since climate resilience is a widely shared goal, long term partnerships between the city and the community can create more responsive and just actions. While trust building can take the form of more community engagement, it is often more effective and productive if done through the creation of longer-term partnerships (between the city and local organizations), neighborhood liaisons, and advisory committees that offer opportunities for sustained resident and organizational leadership.
- Effective local action tends to happen when there is a robust network of local organizations and activists. 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 both locally and for the city as a whole.
- Finally, locally-informed frameworks or metrics for evaluating progress are necessary for measuring the broader impacts of city projects and policies. Among other cities that have moved towards a climate equity approach, progress evaluation remains an area for improvement. Cities must balance the use of quantitative metrics that can give a false sense of accomplishment with qualitative feedback and indicators that are trickier to assess but may provide a more accurate picture of progress.

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 to all – particularly the most marginalized among us, where benefits are shared equitably, and past harm is recognized and addressed proactively. Undoubtedly, climate justice is about climate change. But more fundamentally it is about growing community power, health and prosperity so we can weather any storm the future may bring as a stronger, collective city.

Appendix

List of Interviewee Offices and Organizations

City of Boston

- Mayor’s Office of Resilience and Racial Equity
- Office of Fair Housing and Equity
- Greenovate Boston
- Office of Energy, Environment and Open Space
- Mayor’s Office of New Urban Mechanics

Experts

- Department of Public Policy and Urban Affairs, Northeastern University
- Department of Urban and Environmental Policy + Planning, Tufts University
- Sociology Department, Northeastern University
- McCormack Graduate School, University of Massachusetts Boston
- Sustainable Solutions Lab, University of Massachusetts Boston
- Center for Sustainable Enterprise and Regional Competitiveness, University of Massachusetts Boston
- ARUP
- Green Ribbon Commission
- Office of Sustainability and Environment, City of Somerville
- Pioneer Valley Planning Commission
- Bureau of Planning and Sustainability, City of Portland

Community Organizations and Groups*

- ABCD/Mattapan United
- Allston/Brighton Health Collaborative
- Alternatives for Community and Environment
- Asian Community Development Corporation
- ARISE for Social Justice
- Boston Climate Action Network
- Boston Cyclists Union
- Codman Square Neighborhood Development Corporation
- Dudley Street Neighborhood Initiative
- Environmental League of Massachusetts
- Fairmount Indigo Network
- GreeningRozzie
- Greenroots Chelsea
- Harborkeepers
- Mattapan Food and Fitness Coalition
- Mothers Out Front
- Neighborhood of Affordable Housing
- Neighbor to Neighbor
- Toxics Action Center
- Transportation for Massachusetts
- 350.org Massachusetts

*This list does not include individual neighborhood activists, nor does it include organizations that were contacted but did not participate or were unable to do so.

Footnotes

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