

Green Ribbon Commission Climate Action Briefing Series

2021-2025

The mission of the Green Ribbon Commission is to accelerate the implementation of the City's Climate Action Plan by convening, organizing, and enabling leaders from Boston's key sectors.

GRC Overview and Summary of Critical Next Steps

MISSION

The mission of the Green Ribbon Commission is to accelerate the implementation of the City of Boston's Climate Action Plan by convening, organizing, and enabling leaders from Boston's key sectors.

The GRC was launched in 2010 and is entering its second decade of work supporting aggressive and equitable climate action in Boston. The Commission plays four important roles in advancing the regional vision for climate action:

- **Advise.** Provide ongoing advice to the City in developing and implementing its Climate Action Plan.
- **Lead by Example.** Support GRC Members and Working Group participants in developing organizational climate strategies that align with the City's goals and targets.
- **Execute.** Partner with the City in designing, testing, and scaling actionable solutions that accelerate equitable implementation of City climate strategies.
- **Advocate and Amplify.** Advocate for the equitable implementation of policy changes needed to make long-term resilience and carbon neutrality a reality, and work with its network partners to align their constituencies in supporting those priorities.

GRC Five-Year Goals (2021-2025)

Goal	Targeted Outcome
1. ADVANCE CLIMATE JUSTICE	Climate justice will be acknowledged as a priority, widely understood, and measurably advanced through programs and projects that address it systemically.
2. STRENGTHEN CLIMATE RESILIENCE	The City of Boston will have the governance structure, financing mechanisms, and regulatory requirements in place to manage the resilience investments needed to ensure a safe and climate-resilient Boston.
3. ACCELERATE CARBON MITIGATION	The City of Boston will reach its interim Greenhouse Gas (GHG) reduction target (50% by 2030) and have in place the necessary regulatory structure to be on a pathway to achieve carbon neutrality by 2050.
4. BUILD A MORE INFORMED AND ACTIVATED CITIZENRY	Boston citizens, neighborhoods, and organizations will be more proactive on climate change – informed and aware, prepared and connected, engaged and creative.

GRC Structure

GRC Members represent the spectrum of Boston's major economic sectors and industries, including commercial real estate, education, health care, cultural institutions, utilities, renewable energy, finance, consulting, and not-for-profit organizations. The full Commission membership meets twice a year. Meetings focus on decision making related to implementation of the [Climate Action Plan](#), as well as reports on the activities of Commission Working Groups. Activity between the meetings is carried out by Working Groups led by GRC Members. The Commission has four sector-based Working Groups (Higher Education, Health Care, Commercial Real Estate, and Cultural Institutions) to provide leadership that helps align the sector's practices with the City's Climate Action Plan goals. The Commission also sponsors several strategy-based Working Groups, including the Climate Preparedness Working Group focused on implementation of the [Climate Ready Boston](#) roadmap.

The GRC operates with a staff of two senior professionals who propose strategy, develop projects, support the Members, operate against plan, and manage the sector-based and strategy-based Working Groups. The Commission is supported by more than [20 funders](#), representing a mix of foundations, companies, and private individuals.

Important GRC Strategic Initiatives

In 2015, the Commission partnered with the City to launch [Climate Ready Boston](#) to advance the understanding of climate threats specific to Boston. The findings of the study were released in December of 2016. It includes a detailed consensus climate forecast for the City, a broad vulnerability assessment, and a detailed roadmap for implementing eleven strategies and 39 specific initiatives. This set the stage for a number of important Phase 2 projects, including district-scale resilience planning in five neighborhoods; assessments of governance and finance options; a feasibility analysis of a harbor barrier; and important work to revised zoning and development approval processes.

In 2016, the Commission partnered with Boston University's Institute for Sustainable Energy to produce the [Carbon Free Boston reports](#), which analyze detailed strategies to guide Boston's transition to a renewable-energy future. The report is helping to shape the City's strategy to achieve carbon neutrality by 2050, which will require dramatic changes in city energy systems, including large improvements in building energy efficiency, decarbonization of the electricity grid, and the electrification of transportation and building heating and cooling. The City's decarbonization strategies in the 2019 Climate Action Plan update released in October 2019 are largely based on the analysis in the Carbon Free Boston report.

Green Ribbon Commission Members

1. **Kathy Abbott**, President & CEO, Boston Harbor Now
2. **Robert Brown**, President, Boston University
3. **Bill DiCroce**, President & CEO, Vicinity Energy
4. **John Donohue**, CEO, Arbella Mutual Insurance Company
5. **Andrew Dreyfus**, President & CEO, Blue Cross Blue Shield of Massachusetts
6. **Dan Egan**, First Vice President, Investments, Equity Residential
7. **John Fish**, Chairman & CEO, Suffolk
8. **Sheri Givens**, Vice President, US Regulatory & Customer Strategy, National Grid
9. **Jeremy Grantham**, Founder, GMO, LLC
10. **Paul Grogan**, President & CEO, The Boston Foundation
11. **Pete Hamill**, Vice President & General Manager, Turner Construction Company
12. **Rev. Ray Hammond**, Pastor, Bethel African Methodist Episcopal Church
13. **David Hardy**, CEO, Orsted Offshore North America
14. **Amos Hostetter**, Trustee, Barr Foundation (Co-Chair)
15. **Kim Janey**, Mayor, City of Boston (Co-Chair)
16. **Scott Kinter**, Senior Vice President, AvalonBay Communities
17. **Anne Klibanski**, President & CEO, Partners HealthCare
18. **Bryan Koop**, Executive Vice President, Boston Properties
19. **Katie Lapp**, Executive Vice President, Harvard University
20. **Alan Leventhal**, Chairman & CEO, Beacon Capital Partners
21. **Alexandra Liftman**, Global Environmental Executive, Bank of America
22. **Mindy Lubber**, CEO & President, Ceres
23. **Penni McLean-Conner**, Senior Vice President, Customer Group, Eversource
24. **Michael Mooney**, Chairman, Nutter McClennen & Fish
25. **Tom Nedell**, Senior Vice President & Chief Financial Officer, Northeastern University
26. **Ron O'Hanley**, Chairman & CEO, State Street Corporation
27. **Surya Panditi**, President & CEO, Enel X North America
28. **Bud Ris**, Chair, Climate Preparedness Working Group, Green Ribbon Commission
29. **Glen Shor**, Executive Vice President and Treasurer, MIT
30. **Vikki Spruill**, President & CEO, New England Aquarium
31. **Marcelo Suárez-Orozco**, Chancellor, University of Massachusetts Boston
32. **Katie Theoharides**, Secretary, MA Exec. Office of Energy & Environmental Affairs
33. **Kate Walsh**, President and CEO, Boston Medical Center
34. **Carole Wedge**, President, Shepley Bulfinch
35. **Mariama White-Hammond**, Chief of Environment, Energy and Open Space, City of Boston
36. **Gwill York**, Co-founder & Managing Director, Lighthouse Capital Partners

For Additional Information:

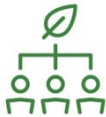
Additional information on the Green Ribbon Commission can be downloaded from the website at www.greenribboncommission.org. Commission staff can be contacted at: John Cleveland, Executive Director, john@in4c.net, 616-240-9751; Amy Longworth, Director, amy@greenribboncommission.org, 202-365-6638.

Summary of Critical Next Steps On Climate Action for Boston



Advance Climate Justice

1. Build shared understanding of how racial inequities have shaped Boston's development.
2. Establish a baseline and track progress on climate equity goals.
3. Develop a strategy to retrofit smaller residential buildings.
4. Support workforce development and contractor diversity.
5. Pursue anchor institution strategies.



Strengthen Climate Resilience

1. Create a cabinet-level position to coordinate and oversee implementation of neighborhood resilience plans.
2. Formally adopt the district scale resilience plans to establish clear performance standards for each neighborhood.
3. Create a transparent system for prioritizing implementation of flood protection projects across all of the neighborhood resilience plans, with strong input from each neighborhood and funding strategies that yield equitable outcomes.
4. Begin exploration of permanent governance and financing structures to support project decision-making and implementation over the long term.



Accelerate Carbon Mitigation

1. Adopt the net zero carbon building zoning code.
2. Adopt an emission performance standard for existing large buildings.
3. Develop a strategy to retrofit smaller buildings.
4. Develop decarbonization roadmaps for Boston's district energy systems.



Build a More Informed and Activated Citizenry

1. Create a climate action progress report.
2. Advance the practice of organizational climate action planning.
3. Create platforms for resident and employee engagement.
4. Partner with Boston's cultural institutions to engage their audiences on climate action.



GRC FIVE-YEAR CLIMATE JUSTICE GOAL

Climate justice will be acknowledged as a priority, widely understood, and measurably advanced through programs and projects that address it systemically.

Background and Progress to Date

Addressing climate change, maintaining public health and safety, and achieving racial equity are huge, intertwined challenges across America, including the City of Boston. People living in communities on the front lines of environmental justice – in East Boston, Dorchester, Roxbury, and elsewhere – suffer many of the impacts of climate change disproportionately to people who live in affluent neighborhoods. Scars persist from the eras of urban renewal, redlining, and other exclusive, racist policies pertaining to land use, development, and investment. As a result, members of the very communities that contribute the least to the greenhouse gas emissions that are causing climate change are bearing the brunt of the impacts in their daily lives.

Over the next 30 years in Boston, billions of dollars of public and private money will be spent to achieve climate resilience and transform the energy system to net zero carbon. Properly designed, climate investments and action could help reverse the inequities of the past, bringing less pollution, cheaper and cleaner energy, more green space, less expensive and more reliable transportation, and safety from extreme weather in vulnerable communities. The City of Boston has the opportunity now to undertake a different kind of decision-making process that puts the citizens whose lives are most affected by climate change at the center of this process, rather than as an afterthought. It can make climate justice core to the way it implements its climate action plan.

Change of this magnitude in Boston will involve work in both the technical and policy realm and the communications and social realm. Ultimately, climate change is not about technology, it's about people. By designing climate actions through intentionally inclusive and human-based processes to ensure equitable distribution of the benefits and burdens, we can improve quality of life for everyone, especially including under-resourced and historically excluded households and communities.

A good foundation for this work has been laid in the City's resilience and mitigation plans:

- **Resilience.** The Climate Ready Boston citywide [vulnerability assessment](#) included detailed analysis of the risk to socially vulnerable populations from future climate impacts, with recommendations on how to reduce those vulnerabilities. If each of the five neighborhood resilience plans focused on flood risks from sea level rise are fully implemented according to the schedules laid out in each of the plans, the most vulnerable populations will be protected.
- **Mitigation.** The [Carbon Free Boston Social Equity Report](#) provided a detailed analysis of the current social equity issues in each of the city's key emissions sectors – buildings, transportation, waste and energy – and identified how intentional policy design can avoid unintended consequences and use the City's emissions reduction strategies to address historical social inequities. The [2019 Climate Action Plan Update](#) reflects this report by including "Designing for Equity" principles that should be used to guide implementation of each of its mitigation strategies.

Critical Next Steps on Climate Justice

The GRC strategic plan commits the Commission to four workstreams that address Climate Justice, and we are in the planning phase for each of them: 1) Building a widely shared understanding of how racial and social inequities have shaped Boston's development patterns, so patterns are not repeated as the city is redesigned to be resilient and carbon neutral; 2) Using the resources of the GRC network to support the climate-related priorities and initiatives of frontline community groups and environmental justice organizations; 3) Aggressively integrating climate justice processes and outcomes into its mission of accelerating the implementation of the City's CAP; and 4) Incorporating climate justice and racial equity perspectives and imperatives into GRC governance, membership and operations.

Of these workstreams, the third is most specifically advanced and requires immediate, ongoing, and active engagement with the City. Prior work has identified multiple opportunities for advancing climate justice outcomes in the implementation of the existing City resilience and carbon neutrality strategies delineated in the Climate Action Plan and other documents. Key opportunities include the following:

1. **Establish a Baseline and Track Progress on Climate Equity Goals.** The GRC has set as one of its priority projects the creation of a biennial *Climate Progress Report* that will provide the opportunity to share progress (both government and private sector) on the City's climate action goals, including climate justice. Measurable goals for climate justice outcomes need to be established, and data sets to track progress need to be created. Examples of measurable outcomes include reductions in energy cost burden; job creation; reductions in negative health impacts related to extreme heat and indoor air quality; improved thermal comfort; access to affordable clean energy transportation; and protection from extreme weather events.
2. **Use Climate Justice Criteria to Prioritize Resilience Investments.** The five neighborhood resilience plans recommend about 75 projects to protect coastal neighborhoods from flooding. Decisions need to be made about the sequencing and timing for each project and how costs will be shared by the public and private sectors. Experience from other cities demonstrates that, in the absence of intentional planning to prioritize social equity, the default decision criterion will be property asset value and impact on economic development. To avoid that outcome, the City of Boston needs to prioritize climate justice criteria.
3. **Establish Climate Resilience Committees.** The Climate Ready Boston report and roadmap recommend the creation of "climate resilience committees" (CRCs) at the district scale to serve as long-term community partners for climate adaptation. These committees could serve as vehicles to put the interests of vulnerable community members at the center of resilience decision-making. While the flood resilience planning done to date and the heat planning process now underway have included extensive community engagement, that has not yet evolved into the more formal community structures envisioned by CRB.
4. **Develop a Strategy to Retrofit Smaller Residential Buildings.** There are 82,000 smaller buildings in Boston that produce the 50% of building-related GHG emissions. In addition to the emissions-reduction benefits, retrofitting these smaller buildings, especially residential units, will provide social equity benefits: reduced energy costs, improved thermal comfort, and cleaner indoor air. The City needs a comprehensive strategy to bring the benefits of building retrofits (improved energy efficiency, heating and cooling electrification, and on-site solar) to this stock of buildings.
5. **Support Workforce Development and Contractor Diversity.** As investments are made in resilience and emissions reductions, business opportunities and jobs will be created. Climate justice outcomes can be advanced by targeting procurement to Women and Minority Business Enterprises and workforce development to job seekers from minority communities. The CAP Update has a specific strategy on Workforce Development for Building Decarbonization, and the Climate Ready Boston roadmap also has a strategy focused on leveraging climate adaptation as a tool for economic development.
6. **Pursue Anchor Institution Strategies.** Many GRC members and working group participants represent large organizations, including university campuses and hospitals, that can leverage their assets to have a positive impact on their own communities. Referred to as "anchor institution strategies," large organizations can use their hiring, investment, procurement, and other strategies to create jobs and business opportunities specifically for people who live in the neighborhood, especially People of Color. With the support of the City, the GRC could work with its health care, higher education, and cultural institution members to advance anchor institution strategies to improve community resilience, health outcomes and carbon reduction.



GRC FIVE-YEAR RESILIENCE GOAL

The City of Boston will have the governance structure, financing mechanisms and regulatory requirements in place to manage the resilience investments needed to ensure a safe and climate-resilient Boston. Implementation of priority projects facing urgent flood risks will be well underway.

Background and Progress to Date

[Climate Ready Boston \(CRB\)](#) has been the City's primary resilience initiative since the release of the Climate Ready Boston report in December of 2016. It has been led by the City's Environment Department. The CRB report created the foundation for a long-term resilience strategy, including:

- A Boston-specific [climate forecast](#) for changes in temperature, precipitation, and sea level between now and the end of the century.
- A citywide [vulnerability assessment](#) documenting the risk to people, property and the economy from these climate risks.
- A five year [implementation roadmap](#) that includes a broad set of layered strategies and initiatives to reduce future climate risks.

The CRB Vulnerability Assessment concluded that nearly 20,000 people and 2,000 buildings face serious risks of flooding between now and 2030 because of sea level rise. Annual losses from flooding could approach \$1.6 billion in future decades — if no action is taken.

The CRB report provided the foundation for a series of district-scale neighborhood plans for protecting East Boston, Charlestown, South Boston, Downtown-North End, and Dorchester from flooding. These plans have all been completed, with the exception of some areas of East Boston and Charlestown now underway. In aggregate, these five plans recommend about 75 projects along Boston's waterfront that will likely require more than \$2 billion in resilience investments, funded by both the public and private sectors. We estimate the true costs are likely to approach \$4 billion.

The Green Ribbon Commission (GRC) assisted the City with the initial design of the CRB initiative and has partnered with the City on most of the subsequent work focused on sea level rise and coastal flood risks. The GRC also commissioned its own study of the [feasibility of building a harbor-wide barrier](#) and various [governance](#) and [financing options](#) for implementing the district scale resilience plans. The first of these two studies demonstrated conclusively that the City's focus on shore-based rather than harbor-wide solutions is the most efficient and cost-effective approach to flood protection at present.

Consistent with the implementation road map developed for the CRB, City Departments have undertaken additional strategies to integrate resilience outcomes into City processes:

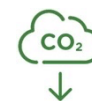
- The Boston Planning and Development Agency (BPDA) launched a process in mid-2020 to create a Coastal Flood Resilience Overlay District (CFROD), based on 40 inches of sea level rise by the end of the century.
- EEOS has begun developing a plan to address the risks of heat stress on neighborhoods throughout the City.
- The City Council approved a new Wetlands Ordinance in 2020, for which the Conservation Commission will develop implementation regulations that encourage resilience.
- Finally, the Boston Water and Sewer Commission has launched several projects to address flooding from extreme precipitation events.

Critical Next Steps on Resilience

The City is at a pivotal stage for making decisions about how it will prioritize, fund, and manage the many billions of dollars of coastal protection infrastructure it will need to implement over the next several decades. The City has taken some modest but positive steps in this direction: some flood protection projects are underway in several of the most at-risk areas in East Boston, Charlestown and Fort Point Channel, and Mayor Walsh committed 10% of the City's annual capital budget for resilience measures (about \$20 million annually). The GRC recommends the City pursue the following steps to build its capacity for on-going resilience implementation. (Additional detail on many of these recommendations can be found in the GRC report:

[Expanding Boston's Capacity to Build Coastal Resilience Infrastructure: Lessons from the Seaport District.](#))

1. **Create – immediately -- a cabinet-level position to coordinate and oversee implementation of the neighborhood resilience plans.** The position should be fully resourced with sufficient funding and staffing that enables it to prioritize and coordinate design, permitting, and construction of the most urgent projects. Work should commence on those projects as soon as possible.
2. **Formally adopt the district scale resilience plans.** The neighborhood plans need to be formally adopted as City policy in a way that will provide clear guidance as to the flood protection performance standards that are to be used in each waterfront neighborhood. This could be done via Executive Order, approval by the PBDA Board, or other means.
3. **Create a transparent system for prioritizing projects for implementation.** The five neighborhood resilience plans include scores of individual recommended resilience projects, half of which are to be completed by 2030. Decisions need to be made about the sequencing and timing for each project. The criteria used by the City need to be transparent and fair and prioritize social equity outcomes. Action recommendations for the City's heat plan will also need to be integrated with the prioritization process, using similar criteria.
4. **Develop a permanent governance structure to support project decision-making and implementation.** Responsibility for implementing various aspects of the CRB program is shared by several agencies across city government, none of whom currently has the capacity or expertise to oversee implementation at the scale envisioned by the district plans. Over time, the GRC believes creation of a new resilience authority will be needed to manage all of the work effectively. This new authority, with strong representation and input from neighborhood resilience committees, could be implemented citywide or at the district scale. The City should immediately begin work on the design of this authority and launch discussions with the Commonwealth to determine whether and what kind of enabling legislation may be needed.
5. **Create long term financing solutions.** While the City capital budget, federal grants and state grants can help jumpstart short-term priority projects, financing the needed resilience investments over the next 30 years will require a set of permanent funding sources much larger than anything currently in place. Evenly spread over 30 years, \$4 billion in investments would require more than \$130 million annually in funding, not including interest charges. In an ideal world, financing should come from a blend of local, state and federal sources. Local sources can include general obligation bonds, funding from private property owners for shoreline protection on their lands, "value capture" payments from property owners deriving substantial benefits from risk reduction and public amenities, and user fees on public infrastructure serving waterfront areas. State sources could be funded with adaptation bonds, while the City should also position itself to secure new federal sources (e.g., from the US Army Corps of Engineers or the expected expansion of FEMA BRIC grants). The proposed funding mix should be based on rigorous cost-benefit analysis that apportions the costs of resilience investments fairly. Most importantly, low-income households, businesses, and neighborhoods must be provided with the technical and financial assistance they will need. Because it will likely take many years to design and implement new financing structures, the City should immediately begin exploring these long-term solutions.



GRC FIVE-YEAR MITIGATION GOAL

The City of Boston will reach its interim Greenhouse Gas (GHG) reduction targets and have in place the necessary regulatory structure to be on a pathway to carbon neutrality by 2050.

Background and Progress to Date

The City of Boston has set a goal of reducing citywide greenhouse gas (GHG) emission by 50% by 2030 and 100% by 2050. To build a strategy to achieve these targets, in 2016 the City and GRC launched the [Carbon Free Boston](#) initiative. The Commission partnered with Boston University's Institute for Sustainable Energy to produce the [Carbon Free Boston reports](#), which analyze detailed strategies to guide Boston's transition to a renewable energy future. The reports make clear that the City's strategy to achieve carbon neutrality requires dramatic changes in city energy systems, including large improvements in building energy efficiency, decarbonization of the electricity grid, and the electrification of transportation and building heating and cooling. The Carbon Free Boston reports provided the analytical foundation for the [2019 Climate Action Plan Update](#) (CAP Update) which details the City's five-year strategies (2020-2024) for decarbonizing the buildings, transportation, and energy-supply sectors. The major strategies laid out in the CAP Update are summarized in the table below.

2019 Climate Action Plan Update Strategies

<i>Buildings</i>	<i>Transportation</i>	<i>Energy Supply</i>
<ul style="list-style-type: none"> • Mandate Zero Net Carbon (ZNC) standards for new municipal buildings • Mandate ZNC standards for affordable housing • Invest in municipal energy efficiency and renewable energy retrofits • Expand workforce development programs for building decarbonization • Mandate carbon emissions performance standards for all existing large buildings • Require ZNC standards for new construction 	<ul style="list-style-type: none"> • Advocate for priority transit projects • Improve and expand biking and walking transportation infrastructure • Encourage mode shift through demand management and parking policies • Accelerate citywide zero-emission vehicle deployment • Accelerate municipal fleet transition to Zero Emission Vehicles and low emissions vehicles 	<ul style="list-style-type: none"> • Implement and expand community choice energy • Plan for the deployment of carbon-neutral district energy microgrid systems • Support state policies that further decarbonize Boston's energy supply

Significant progress has been made on many of these strategies. The City has:

- Consistently ranked at the top of the list of most energy efficient cities in the United States.
- Issued \$25 million in green bonds to support energy-efficient and renewable energy in municipal buildings.
- Signed an executive order requiring that all new municipal buildings be Zero Net Carbon.
- Launched the Community Choice Electricity Program which will provide affordable, renewable electricity to over 200,000 Boston residents.
- Mandated that all city-funded affordable housing developments be Zero Net Carbon.
- Launched the development of a Building Emissions Performance Standard to address the carbon emissions in Boston's building stock, which account for 70 percent of the city's total emissions.
- Launched the Zero Net Carbon Building Zoning Initiative.
- Released a Zero-Emissions Vehicle Roadmap.

Critical Next Steps on Climate Mitigation

Many of the key next steps to accelerate climate mitigation are already in the early stages of being launched and the challenge is to successfully implement them at scale. Other key initiatives are not yet in place and need to be designed and funded. The Green Ribbon Commission recommends the following emissions reduction priorities, focused on the building sector, which has been the primary area of carbon mitigation collaboration between the GRC and the City.

1. **Adopt the Net Zero Carbon Building Zoning Code.** Approximately 15% of the City's building stock in 2050 will be structures that are built between now and then. It is critical that these new buildings all meet Zero Net Carbon standards. Otherwise, they will need to be retrofitted to achieve the City's goal of carbon neutrality by 2050. The ZNC Building Zoning Initiative is designed to put these mandates in place for all projects that are required to go through the Boston Planning and Development Agency (BPDA) Article 80 approval process. It is critical that this new requirement be implemented as soon as practically possible to avoid the need to retrofit new buildings to meet 2050 standards.
2. **Adopt an Emission Performance Standard for Existing Large Buildings.** The City is in the late stages of developing an amendment to the Building Energy Reporting and Disclosure Ordinance (BERDO) to mandate emissions reductions in large buildings (20,000+ SF) to reach net carbon neutrality by 2050. It is critical that this ordinance be finalized, submitted to the City Council, and adopted as soon as possible. The 3,500 buildings covered by the ordinance account for 50% of building emissions in the city. Without emissions mandates for these buildings, it is not possible for the City to reach its long-term decarbonization goals.
3. **Develop a Strategy to Retrofit Smaller Buildings.** There are approximately 86,000 buildings in the city of Boston. More than 82,000 of these buildings will not be affected by the large building emissions performance standard. Yet these buildings represent the other 50% of building related GHG emissions. In addition to the emissions-reduction benefits, retrofitting these smaller buildings, especially residential units, will have multiple positive social equity outcomes for residents in the form of reduced energy costs, improved thermal comfort, and cleaner indoor air. The City needs to develop a comprehensive strategy to bring the benefits of building energy retrofits (improved energy efficiency, heating and cooling electrification, and on-site solar) to this smaller building stock. This will need to include specialized financing support (the City is exploring the creation of a "Boston Climate Bank"), technical assistance to homeowners, green lease arrangements for tenants, accelerated residential solar deployment, and deep collaboration with Boston's public utilities.
4. **Develop Decarbonization Roadmaps for Boston's District Energy Systems.** Boston's large-scale district systems provide thermal services to approximately 70-million square feet of floorspace in offices, hospitals, laboratories, hotels, and residences (approximately 10 percent of the city's built environment). The largest of these systems – Vicinity's steam network and ENGIE's MATEP facility in the Longwood Medical Area – account for three-quarters of this energy generation. While from a carbon perspective these systems are quite efficient, they are currently all powered by fossil fuel and some are locked into their fuel contracts through 2050. It will not be possible for the City of Boston to achieve its carbon neutrality goal without clear decarbonization pathways for district energy systems. To achieve decarbonization in the midst of evolving technologies and policies, a collaborative effort between regulators, operators, and customers specific to district energy is required to achieve City decarbonization goals.



GRC FIVE-YEAR INFORMED AND ACTIVATED CITIZENRY GOAL

Boston citizens, neighborhoods, and organizations will be more proactive on climate change – informed and aware, prepared and connected, engaged and creative.

Background and Progress to Date

Citywide climate action requires alignment and collaboration across a very diverse set of stakeholders, including government, residents, neighborhoods, community-based organizations, companies, and institutions. These actors will collectively make the most rapid progress when everyone is well informed about what others are doing, has a sense of shared direction and destiny, and feels empowered to take action. Boston residents in all their roles – as homeowners or renters, employees, customers, purchasers, voters, volunteers – need to understand the risks and opportunities of climate change and what they can do help advance Boston toward a resilience and carbon neutral future.

The City has made significant progress in reaching out to engage a broad range of residents in its climate strategy, including:

- In collaboration with the GRC, the City created the [Greenovate Boston](#) brand and outreach initiative to serve as a central resource for residents about climate issues and initiatives in Boston.
- There is a robust [Climate Action website](#) for the City, including [on-line tools](#) to track the progress against the Climate Ready Boston resilience roadmap and Climate Action Plan Update emissions reduction roadmap.
- The City's climate strategies, including the five Climate Ready Boston [neighborhood resilience plans](#), have included extensive neighborhood and stakeholder outreach as part of their development. "Prepared and connected communities" is a core strategy of Climate Ready Boston and the first objective in the strategy is to "expand citywide climate readiness and engagement."

The City is entering a critical phase of climate action implementation that will require broad-based support to both take action and provide political support to enact key policy provisions. This will require an even higher level of citizen engagement than has been achieved to date.

Critical Next Steps on An Informed and Activated Citizenry

1. **Create a Climate Action Progress Report.** The City has agreed to partner with the GRC and The Boston Foundation to create biennial report and stakeholder convening that keeps all parties informed on the City's progress towards its climate and equity goals and identifies opportunities for improvement and renewed strategic focus. While the City does produce an annual report, there is currently no process for assessing how the *full Boston community* (not just City government) is doing on achieving resilience and emissions reductions, and, importantly, how racial equity is being advanced through climate actions. A biennial Climate Progress Report could be structured to appeal to an "across-the-board" audience, with the goal of building support for City actions, projects, and interventions, and supporting and catalyzing multiple stakeholders to take action on their own. The progress report should have a strong engagement dimension, including strong media outreach, multiple events and venues, discussion groups, community ambassadors, and availability in multiple languages.
2. **Advance the Practice of Organizational Climate Action Planning.** There is a high concentration of large property owners in Boston – the top 50 owners control over 30% of the building square footage, and, consequently, a large portion of the City's greenhouse gas emissions. In addition, they employ a large percentage of the city's workforce, so contribute to significant portions of transportation emissions. Many of them also own a significant number of waterfront properties vulnerable to flooding from sea level rise. These and other property owners need to integrate the City's resilience, carbon neutrality, and social equity goals into their strategic plans, energy and facility master plans, Capital Expenditure budgets, and other organizational systems if the City is going to achieve its long-term targets. Each organization will need to have

its own version of a Climate Action Plan (CAP) aligned with the City's climate goals. Climate Action Planning needs to be accepted as a core business process across the entire city. The City should partner with the GRC to develop and deliver guidance tools and support services for organizations to develop and implement rigorous climate action plans aligned with the City's resilience and mitigation goals, as well as its regulatory structures such as the proposed Building Emissions Performance Standard.

3. **Create Platforms for Resident and Employee Engagement.** In addition to organizational action, the City can help inspire residents and employees to take action on their own resilience and mitigation strategies. The last several years have seen the development of exciting and dynamic on-line engagement platforms that radically simplify the work of developing household-scale climate plans and tracking actions and impact. These include [Climate Solutions Net](#), [WeSpire](#), and [MassEnergize](#). The City could work with the GRC and large employers to make these platforms available to employees to align resident and employee action with the City and organizational climate plans.
4. **Partner With Boston's Cultural Institutions to Engage Their Audiences on Climate Action.** The City should partner with the GRC Cultural Institutions Working Group to help Boston's cultural institutions drive awareness and action on climate issues. More than 40 diverse cultural institutions are already participating in this working group. Because of the nature of their missions, these institutions have a unique opportunity to contribute to climate action in terms of communication, outreach, thought provoking programming, and the ability to reach people in non-technical ways and through alternative neural pathways. They have the potential to influence our perceptions of shared challenges, expand our understanding of complex issues, and reach very large audiences. A branding platform (ActionPact, www.Actionpactboston.com) has been created to engage and inspire cultural audiences in positive climate visioning and deeper understanding of climate challenges and opportunities. Through a wide range of events, cultural audiences will be inspired to take action on climate change and get engaged in initiatives at the family, neighborhood and citywide scales.