Boston Climate Action Leadership Committee
Adaptation Recommendations
Final Draft February 3, 2010

Principles and Priorities

1. **Residents, businesses, and institutions of Boston must accept that global climate change will alter our physical environment and that these alterations could have significant effects on the geography, security, economy, and society of Boston. All members of the Boston community must prepare themselves with a willingness to learn, a flexibility of response, and a concern for the common good.**

2. **CoB should establish an immediate, sustained, and comprehensive climate adaptation program.**
   - CoB should develop and publish a climate adaptation plan that ensures the safety of all people living or working in Boston and, to the extent practical, protects existing buildings, businesses, institutions, and neighborhoods.
   - The adaptation plan should be informed by a detailed vulnerability assessment (see below) and complement the City's climate mitigation (greenhouse gas reduction) plan, integrate with it where possibly, and receive equal attention
   - The plan should spur public action through a mixture of education, incentives, and requirements that may change over time.

3. **CoB should start its adaptation efforts by focusing first on preparing for sea-level rise, increased frequency and intensity of heat waves, and increased intensity of storms (summer and winter).**
   - The effects of climate change are multi-faceted and wide-ranging. As the City's adaptation program develops or new data emerges, it should widen its attention or change areas of focus.
   - Adaptation planning should address the health, economic, and social consequences of climate change impacts.

4. **Considerations of climate change for the purposes of adaptation planning should always include the upper ranges of reputable projections.**

5. **In all adaptation planning, CoB should give special attention to segments of the Boston community that are more vulnerable because of lack of resources, poor health, age, or other reasons.**

6. **Wherever possible, CoB should work with other levels of government to address climate adaptation on a state-wide, regional, and even national level**.
   - CoB's planning and assessments should identify adaptation measures that are beyond the capability or authority of the City of Boston, and CoB should pursue those measures at the appropriate level of authority.
   - CoB should be a strong advocate, at both the state and federal level, with both the executive and legislative branches, for any financial, technical, administrative, and legal resources that exceed municipal capabilities.
   - CoB should support efforts to ensure that laws, codes, and regulations of the Commonwealth, particularly those affecting coastal and flood-prone areas, incorporate forward-looking climate change concerns.

Information, Measurement, and Analysis

7. **CoB should conduct as soon as possible a detailed assessment of Boston's vulnerability to climate change, focusing on sea-level rise, heat waves, and storms (both summer and winter).**
   - The assessment should separately evaluate near-term, mid-term, and long-term scenarios over the coming century.
   - This assessment should build on the MAPC's 2007 *Metro-Boston Multi-Hazard Mitigation Plan* and *Boston Annex*, and can most usefully be done, if possible, as part of a regional assessment.
   - Analysis of the risks from climate change should include the probability of an event occurring; the consequences of the event; the vulnerability of people and the natural, built, and social environments to that event; and opportunities to build adaptive capacity.

8. **As part of its three-year climate action plan revision cycle, CoB should regularly review climate change projections and environmental, socio-economic, and demographic data, and adjust its adaptation and mitigation plans in response to important trends.**
   - CoB should ensure that environmental monitoring and data analysis are sufficient to provide the City with the information it needs to conduct regular climate assessments. In particular, CoB needs a way to monitor whether the effects of climate change are likely to exceed projected levels previously used for planning purposes.
   - CoB should partner with the Commonwealth of Massachusetts (MA), the federal government, and local academic and scientific institutions, as appropriate, and should establish a scientific advisory group to help evaluate new information on climate change projections

9. **CoB should establish a task force to examine the potential effects from and potential responses to likely, long-term threats (50 years and beyond) from sea-level rise and other consequences of climate change, as well as low-probability, but catastrophic shorter-term events.**
   - The task force should build on the results of the vulnerability assessment to focus on the very long-term and potentially most disruptive physical, social, and economic consequences of climate change.
   - The possible responses should explicitly include technological and infrastructure changes (e.g., ocean barriers) and social and economic changes (e.g., retreat from low-lying areas, relocation of residents and industry).
   - The task force should identify specific trigger points that indicate if and when the implementation of major responses needs to begin.
   - CoB should, if possible, jointly form this task force with other municipalities around Boston Harbor and with agencies of the Commonwealth.

Measures and Planning

10. **CoB should immediately and explicitly incorporate climate adaptation into all planning and review processes for both public and private activities.**
    - The vulnerability assessment should form the basis for this consideration. Until that assessment is completed, the City should rely on recent, more general reports of the Commonwealth, the federal government, and other bodies, such as the Union of Concerned Scientists.
    - CoB should identify various types of strategies, including "no-regrets" strategies (those that make sense to do however much the climate changes), "low-cost" strategies (those with some possible net costs, but many benefits), and "wait-and-see" strategies (that depend on how much and how fast the environment changes).

- CoB should identify three different Boston neighborhoods, with different mixes of residential, commercial, and industrial sites, where in-depth adaptation planning case studies can take place, and immediately begin such planning.

11. All CoB capital, infrastructure, and neighborhood planning should explicitly consider the effects of climate change over the next 100 years.

- CoB should work with FEMA and the relevant state agencies to ensure that the 100-year flood maps, traditionally based on historic flood levels, incorporate projected changes in sea level and storm intensity and frequency.

12. **Every CoB department and agency should undertake a formal review of the possible consequences of climate change on its on-going programs and infrastructure in the next ten years, and implement changes or establish programs and policies based on that review.** Some examples of areas of concern, which need not all be addressed simultaneously, are:

- Comprehensive Emergency Management Plan: CoB's ongoing revision of the Comprehensive Emergency Management Plan should examine the short-term risks from climate change (particularly heat waves and flooding). CoB should also ensure that all critical facilities have both adequate plans and resources to respond to more frequent and more expansive emergency events.
- Revenue and Budget: CoB should assess the potential effect of sea-level rise and other consequences of climate change on the City's revenues and budgetary health.
- Regional Transportation System: CoB should work with the MBTA and MassDOT to assess the vulnerability of the regional transportation system to climate change and to develop strategies to reduce short-term and long-term risks.
- Urban Heat Island: Over the next five years, CoB should develop a comprehensive plan to mitigate the urban heat island effect in the most vulnerable areas of the city, building on the Grow Boston and green roof programs.
- Emergency Cooling Centers: CoB should ensure that a sufficient number of its emergency cooling centers are designed for "passive survivability" and have emergency sources of power to cope with electrical grid blackouts.
- Public Health: CoB should work with the Boston Public Health Commission to develop a comprehensive assessment of the long-term risks to public health from climate change, especially related to heat waves and their effect on vulnerable populations.
- Storm Water Management: CoB should continue to strengthen its existing programs for green storm water management and infiltration. CoB should protect and, wherever possible, expand all aspects of the city's green infrastructure, including parks, urban wilds, wetlands, and other ecosystems.
- Boston Harbor and Logan Airport: CoB should work with the Office of Coastal Zone Management, Massport, and other municipalities contiguous to Boston Harbor to develop a detailed plan for ensuring the safety and operability of Boston Harbor and Logan Airport with continued sea-level rise. This work should include an assessment of the economic vulnerabilities to Boston Harbor from climate change.
- Deer Island Sewage Treatment Plant: CoB should work with the Commonwealth, the BWSC, and the MWRA to assess the long-term viability of the Deer Island Sewage Treatment Plant.
- Boston Harbor Islands National Recreation Area: CoB should work with the National Park Service and other partners to evaluate the long-term viability of the Boston Harbor Islands National Recreation Area.

13. **All new private development and institutional master plans, through the City's existing planning and environmental review processes, should evaluate the vulnerability of projects and institutions to climate change over the life of the project or institution and specify how it will address both short-term and long-term vulnerabilities.**
    - CoB should establish planning lifetimes for different types of projects. These lifetimes should reflect the actual time such structures are likely to be in use, which may exceed the lifetimes assumed in business or financial models for the project.

    FINAL NOTE: The city's adaptation planning will necessarily continue and evolve for many years. Planning over time should address:
    - Long-term food security
    - Effects of changes in national and international migration patterns
    - Long-term economic trends related to climate change (for example, effects of rising energy costs due to carbon pricing)