

## CLIMATE READY: CHARLES RIVER

**Land area:** 6.5 sq miles  
**Population:** 142,000  
**Jobs:** 237,000  
**Economic contribution:** \$46 billion



*The Charles River area consists of the neighborhoods that lie along the Charles River, including Beacon Hill, Back Bay, Fenway/Kenmore, and Allston/Brighton.*

Equitable development and job creation. Improved transit and community services. Increased access to open space. Enhanced health and security. All of these community benefits can be achieved through preparing Boston for the impacts of climate change.

Led by the City of Boston and the Green Ribbon, Climate Ready Boston is aimed at identifying how Boston's climate is going to change, what's most at risk, and steps that can be taken to improve our community and thrive in the future. It builds on Boston's commitment to address global warming by cutting carbon and other emissions. The Climate Ready Boston report is available at (<https://www.boston.gov/environment-and-energy/climate-ready-boston>) and was developed with input from leading scientists; city, regional and state staff; utilities; and nonprofit and community organizations.

## What Climate Change Means for Charles River

GREATER  
AMOUNTS  
OF SEA  
LEVEL RISE



### More Flooding:

- 7% of the Charles River area is at risk from stormwater flooding in the near term.
- Buildings and infrastructure in Charles River neighborhoods face limited exposure to coastal flooding through the middle of the century. Of these neighborhoods, Allston has the greatest exposure in the near term.
- By the end of the century, hundreds of acres will be exposed in very extreme events.

MORE HOT  
DAYS



### More Heat:

- Climate change means hotter temperatures, especially in urban “heat islands” or areas with more asphalt and less tree cover to provide shade.
- The elderly and people suffering from illnesses are more vulnerable to heat. Beacon Hill's older adult residents (12% of the population) and Back Bay residents with a medical illness (42%) and are among the highest totals in Boston.

## What's At Stake



### Community Assets & Flooding

- Charles River neighborhoods have limited exposure to flooding until mid-century due to the New Charles River Dam.
- By the end of the century, Charles River neighborhoods, Charlestown, and Cambridge are expected to be exposed to flooding as the dam overflows during major events.
- Portions of MBTA's Green Line within Back Bay and Beacon Hill will be exposed to coastal flooding later this century and the Green Line faces potential interruption from stormwater flooding.
- Later this century, sections of Storrow Drive, as well as parts of Beacon Street and River Street in Back Bay and Beacon Hill, may be impacted by major flooding events.
- Major flooding events could also affect the many university campuses in the area including Boston University and parts of Harvard and Northeastern



### People and Buildings Impacted by Major Flood Events

Charles River neighborhoods are generally less exposed to flooding than other Climate Ready Boston focus areas. Nevertheless, without action, impacts may still be expected, particularly for the major flood events later this century.

- In 2070, more than 4,800 people and 700 buildings with a value of over \$6 billion would be exposed in a major flood. Most structure and content losses are expected to occur in Back Bay.



### Economic Output and Jobs

Flooding can be extremely disruptive to the local economy as operations are interrupted while structures are repaired or businesses relocate.

- The Charles River area is expected to face annual losses of \$6.3 million in economic output and 40 jobs by the end of the century.
- The main industries affected are expected to be the performing arts, restaurants, and entertainment and recreational facilities.

## Charles River in Action

The following initiatives have been proposed to ensure that Charles River is prepared for the effects of climate change.



### Prepared & Connected Communities:

- Conduct an outreach campaign to private facilities that serve vulnerable populations to ensure that they engage in emergency preparedness and adaptation planning.
- Update the city's heat emergency action plan.
- Expand Boston's small business preparedness program.



### Protected Shores:

- Develop a local climate resilience plan for Charles River neighborhoods to support district-scale climate adaptation. This is particularly critical to plan for later century flood protection at the New Charles Dam, the South Boston Waterfront, and Dorchester Bay. The plan should include the following:  
Community engagement through a local climate resilience committee;
  - Community engagement through a local climate resilience committee;
  - Infrastructure adaptation planning;
  - Coordination with other plans, including Imagine Boston 2030, GoBoston 2030, Special Planning Areas, and any potential Municipal Harbor Plan process;
  - Development of financing strategies and governance structures to support district-scale adaptation.



### Resilient Infrastructure:

- Develop coordinated risk response plans for extreme weather events.
- Support MBTA's assessment of flooding impacts.
- Explore options for a neighborhood energy grid at Fenway Park and Northeastern University.



### Adapted Buildings:

- Update zoning and building codes and notify developers with projects in the pipeline to update plans.
- Help building owners assess potential impacts and increase resilience.
- Promote access to insurance.
- Prepare municipal buildings to withstand change.