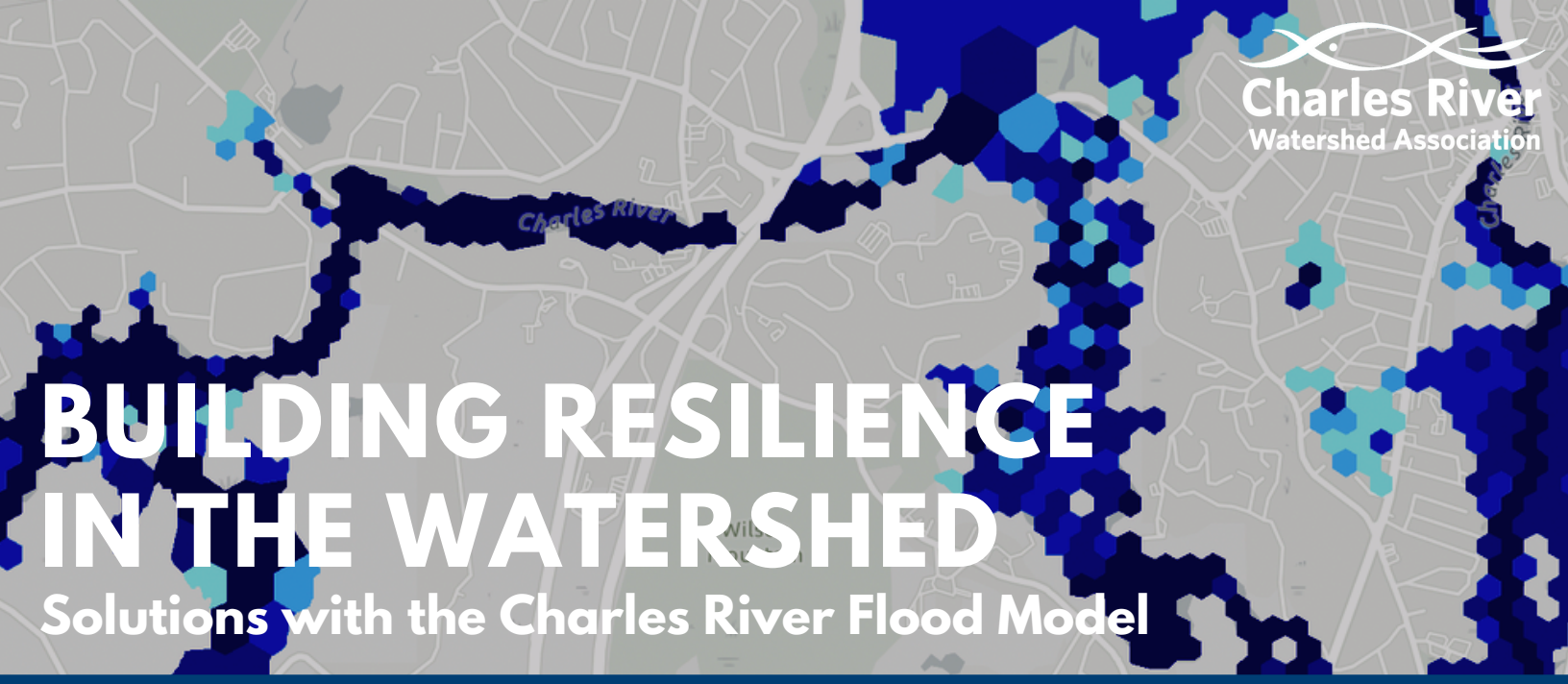


Charles River Watershed Association

BUILDING RESILIENCE IN THE WATERSHED

Solutions with the Charles River Flood Model

CLIMATE CHANGE ISN'T COMING—IT'S HERE.

Precipitation during heavy rain events increased by 55% between 1958 and 2016 in the northeastern United States. And, as our climate continues to warm, we will see **even more severe storms**.

What does this mean for our communities? More flooding.

Just a few more inches of rainfall could increase the Charles River's volume by **millions of gallons** during a heavy storm. In our highly urbanized watershed home to over a million people, our homes, businesses, and critical infrastructure are at risk.

BY 2070, A 100-YEAR STORM WOULD CAUSE:

100-year storms have a **1% chance** of occurring every year.

61%

increase in runoff from 11+ inches of precipitation

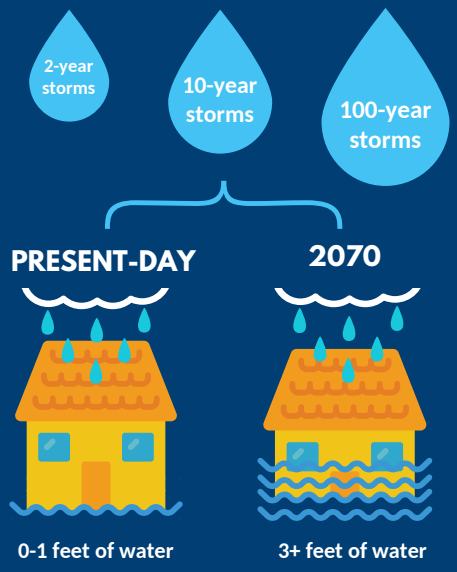
2,600+

acres that don't currently flood will experience flooding

75+

critical facilities like hospitals, schools, + highways impacted

CLIMATE CHANGE IS BRINGING STRONGER, MORE INTENSE STORMS.



WORKING TOGETHER FOR REGIONAL SOLUTIONS

Charles River Climate Compact

Founded in 2019, the **Charles River Climate Compact (CRCC)** is a collaboration of twenty-eight cities and towns, led by CRWA, that takes a regional approach to climate adaptation to address flooding, sea level rise, extreme heat, and river health. In 2021, the team developed the **Charles River Flood Model (CRFM)**, a tool that shows **when and where flooding will occur** as our climate changes and helps us **identify the most effective solutions**.

In 2022, the Climate Compact published the **Charles River Climate Adaptation & Flood Mitigation Implementation Plan**, which identifies over fifty flood mitigation projects. Now, we're working with cities and towns to **design, fund, and build solutions.**

DO YOU SEE YOUR CITY OR TOWN?

ARLINGTON · BELLINGHAM · BELMONT · BOSTON · BROOKLINE · CAMBRIDGE · DEDHAM · DOVER · FRANKLIN · HOLLISTON · HOPKINTON · LINCOLN · MEDFIELD · MEDWAY · MILLIS · NATICK · NEEDHAM · NEWTON · NORFOLK · SHERBORN · SOMERVILLE · WALPOLE · WALTHAM · WATERTOWN · WELLESLEY · WESTON · WESTWOOD · WRENTHAM

LEARN MORE >>>

Charles River Watershed Association

SOLUTIONS FOR FUTURE FLOODING

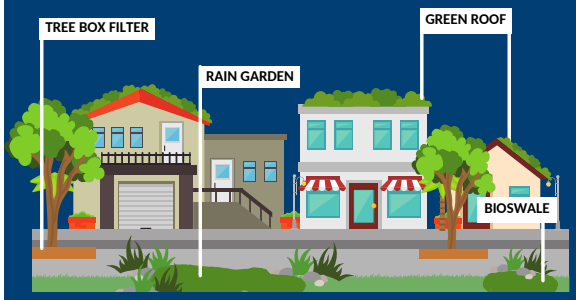
Bringing nature back into our neighborhoods.

MEET THE NATURE-BASED SOLUTIONS:

Using the Charles River Flood Model, the team studied **numerous strategies to prevent flooding** including green infrastructure, expanding tree canopy + greenspaces, protecting + restoring wetlands, and conserving open space.

WAYS TO PREPARE FOR FUTURE FLOODING:

BUILD GREEN INFRASTRUCTURE | **EXPAND TREE CANOPY & GREENSPACES** | **PROTECT & RESTORE WETLANDS** | **CONSERVE OPEN SPACE**



WHAT ARE NATURE-BASED SOLUTIONS?

We can learn a lot by looking at nature! Nature-based solutions are urban design strategies that **mimic nature** to **restore degraded ecosystems** and **adapt to climate change.**

CURRENT PRIORITY PROJECTS:

WALTHAM

Restore wetlands in Hardy Pond to store floodwater in extreme weather. Incorporate green infrastructure like infiltration and de-paving in areas like large shopping centers in West Waltham.

NEWTON

Build green infrastructure, like infiltration chambers + rain gardens, near Albemarle Field to reduce flooding of the nearby channelized stream, Cheesecake Brook.

WESTON

Maximize benefits of green infrastructure, like pervious pavement + infiltration, and restoring streams + wetlands to store floodwaters and improve the ecosystem.

WELLESLEY

Restore floodplains near Longfellow Pond + Rosemary Brook, build green infrastructure, and repair culverts to prevent flooding on Rt. 9 + neighborhoods.

NATICK

Construct infiltration chambers + flood-able fields and restore wetlands to prevent flooding + improve water quality at Natick High School.

MEDWAY

Build green infrastructure + flood storage in Oakland Park to build climate resilience, restore groundwater, and reduce flooding.

MILFORD

Restore streams + wetland areas and build green infrastructure in highly impervious areas of Milford. Use existing ponds + relic quarries to store floodwaters.

DESIGNING + BUILDING SOLUTIONS:

The model was used to **identify, prioritize, and design flood solutions** at both the site-specific and watershed scales. To select projects the team considered the following: ability to store floodwaters, proximity to environmental justice neighborhoods, protection of critical facilities, and community support.

WHAT'S NEXT?

Charles River Watershed Association is advocating at the local, state, and federal levels to help cities and towns advance these critical projects and **keep our homes, businesses, and critical infrastructure above water!**

QUESTIONS?

Contact Julie Wood, jwood@crwa.org.

MVP Municipal Vulnerability Preparedness

Weston & Sampson

CREW Communities Responding to Extreme Weather

*This work is funded by the **Municipal Vulnerability Preparedness (MVP)** program, which helps cities + towns identify climate hazards, assess vulnerabilities, and develop action plans to build climate resilience.*

LEARN MORE!

crwa.org/watershed-model