

FALULAH/BAKER BROOK WATERSHED

Fitchburg, MA

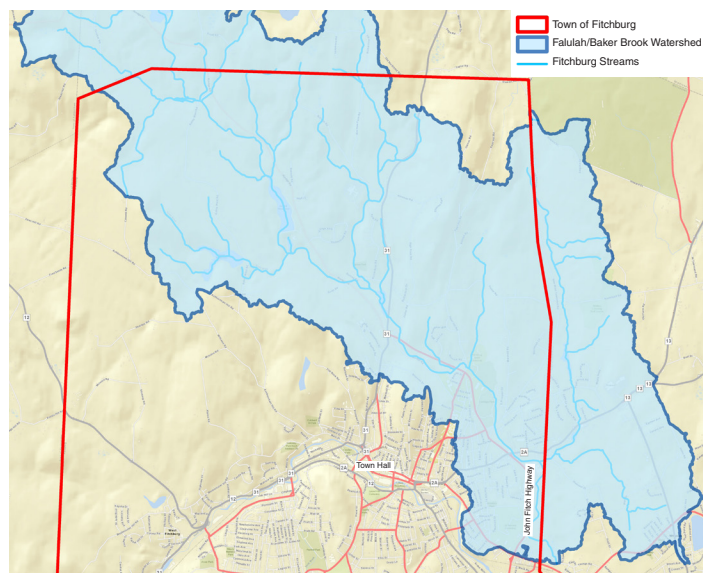
IDENTIFYING OPPORTUNITIES TO IMPROVE CLIMATE RESILIENCE

What is Climate Change?

Definition

Climate Change is caused by the increase of greenhouse gases in the Earth's atmosphere, which results in a warmer global temperature. Global temperatures impact air currents and patterns of weather.

Climate change is already impacting our community. Several areas within the Falulah/Baker Brook subbasin flood during rain events because of stormwater runoff (rain or snow melt that can lead to flooding). Increases in high intensity precipitation events due to climate change have resulted in more frequent and extensive flooding.



Source: www.commonwaters.org

A **watershed** is a geographic area of land in which all surface and ground water flows downhill to a river, lake, or wetland.

What Does Climate Change Look Like in Fitchburg?



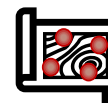
Rain during heavy events in the Northeast increased by more than 70% since 1958.



Four heat waves hit the city in 2021. Heat waves are above average temperatures lasting several days.



38% of the watershed is covered by impervious surfaces.



Local urban heat island "hot spots" can be 4-6 F hotter than green spaces

Reducing impervious surfaces will reduce stormwater runoff, flooding in the watershed, and urban heat island effects.

Impervious surfaces are pavement and surfaces that prevent water from infiltrating into the ground.

Urban Heat Islands are areas with limited shade and surfaces that are hotter than surrounding areas. Urban heat island impacts include:



heat-related illnesses



high energy costs



poor air quality

We Want to Hear From You

We are continuing to gather your input on priorities for projects addressing flooding and urban heat island effects in the Falulah/Baker Brook watershed. Visit our website for more information on how to get involved: www.fitchburgma.gov/979/FalulahBaker-Brook-Watershed



resilientma.org/mvp

This project was funded by the City of Fitchburg's Department of Public Works and the Massachusetts Executive Office of Energy & Environmental Affairs' Municipal Vulnerability Preparedness (MVP) Grant program, which provides support for cities and towns to plan for climate change and to implement projects to build local resiliency.

Project Goals (2021-2022)



Fitchburg was awarded \$173,350

of grant funding to identify, design, and prioritize actions to address climate change impacts on public and private land in the Baker Brook watershed.



Design green infrastructure solutions for **public and private properties** to catalyze change across the watershed.



Identify ways to reduce impervious surfaces by 50%, which will substantially reduce flooding and reduce urban heat island effects on residents and commercial activities.



Quantify the costs and potential **greenhouse gas emission and flood mitigation** benefits of green infrastructure and ecological restoration projects.



Modeling from the John Fitch Highway climate resilience project is being expanded throughout the watershed to **identify flood prone areas**.



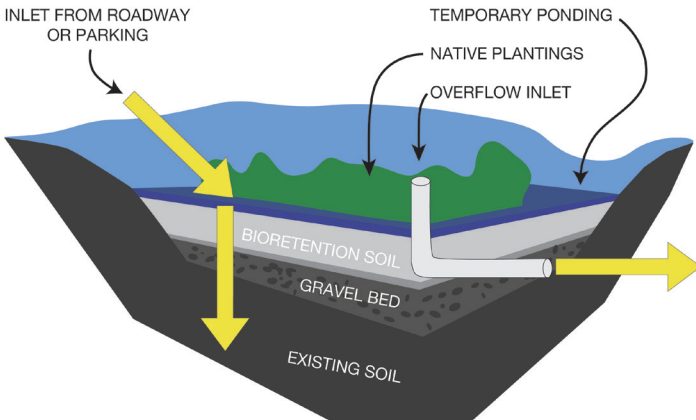
Develop an implementation plan that prioritizes projects benefiting environmental justice communities and reducing flooding and pollution in problem areas.

Green Infrastructure Opportunities

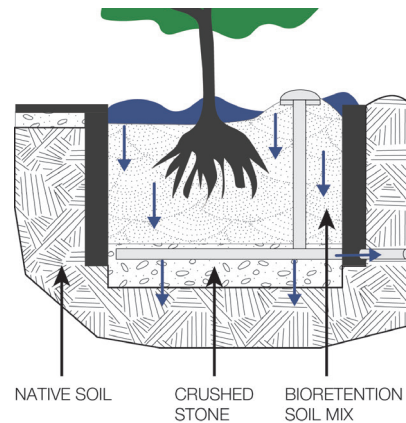


Green infrastructure can capture runoff from impervious surfaces, reducing urban heat islands and improving water and air quality. Several options will be evaluated for the Falulah/Baker Brook Watershed, including bioretention, bioswales, tree box filters, urban tree planting, permeable pavement, underground infiltration chambers, and stormwater detention in ponds. Selected examples are illustrated below.

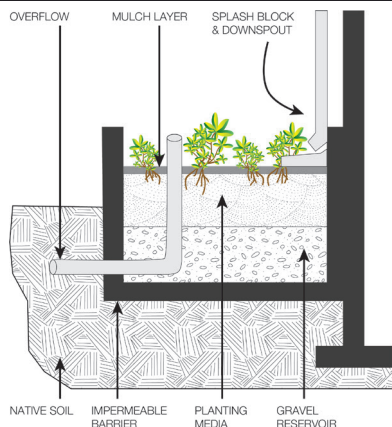
Bioswale



Tree Box Filter



Urban Planter Box



Permeable Pavement

