

Lowell Claypit Brook Climate Resilience Stormwater Management Capital Improvement Plan

How Could Climate Change Impact Lowell?

FLOODING: The stormwater system is considered a vulnerable local feature. Stormwater flooding is especially frequent in areas with:

- poor drainage
- large amounts of pavement and other surfaces that prevent water from infiltrating into the ground
- undersized culverts

Because rainfall events are becoming increasingly intense due to climate change, much of the stormwater infrastructure designed decades ago is now undersized, including culverts. Stormwater flooding is especially severe in Pawtucketville, an Environmental Justice neighborhood near Claypit Brook.

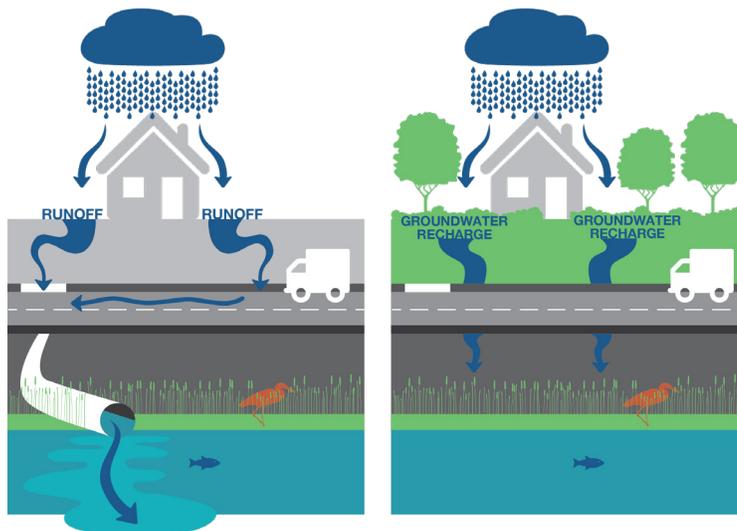
EXTREME HEAT: Urban heat islands are also a concern, which disproportionately impact vulnerable populations.

What are we doing about it?

The Lowell Claypit Brook Climate Resilience Stormwater Management Capital Improvement Plan includes:

- comprehensively assessing the watershed's drainage, culvert conditions, and flooding
- mapping urban heat islands
- preliminary design of a vulnerable culvert on Stockbridge Ave
- identifying potential nature-based solutions to improve drainage to handle future extreme precipitation events in the Claypit Brook Watershed.

What's Possible?



Solutions to increase filtration and cooling include:

- tree planting
- tree box filters
- bioswales
- rain gardens and bioretention
- stream restoration

Definitions



Climate is the pattern of weather events observed over time.



Climate Change is a phenomenon caused by the increase of greenhouse gases in the Earth's atmosphere, which results in a warmer global temperature.



Urban heat islands occur when cities replace natural land cover with impervious surfaces that retain heat.



Stormwater is rain or snow melt that soaks into the soil and recharges groundwater, naturally drains into waterbodies, or is conveyed through a series of pipes until it is discharged into a nearby waterbody.



A **watershed** includes all land that contributes runoff to a body of water and may extend many miles away from the water's edge.



A **culvert** is an underground conduit that allows water to flow beneath a road or similar built infrastructure.

Your input is essential! Want to be part of the solution? Take these quick steps:



Visit the project webpage at **Tinyurl.com/LowellMVP** to learn more and share your comments



Keep the conversation going online using the hashtag **#ResilientLowell**



This project was funded by the Massachusetts Executive Office of Energy & Environmental Affairs' Municipal Vulnerability Preparedness (MVP) Action Grant program, which provides support for cities and towns to plan for climate change and implement projects to increase resilience.