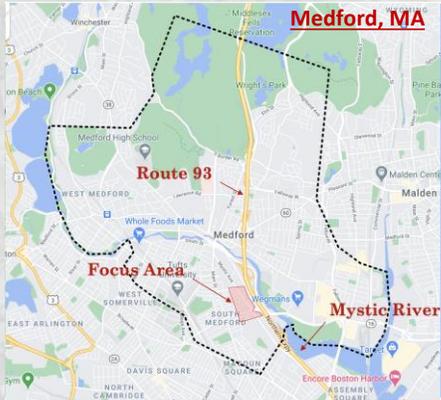


The Site is a 50-acre section of Medford, located 5 miles north of Boston. The site is bordered by Route 93 and the Mystic River and is 50/50 residential and commercial.



Development aims to mitigate surface flooding caused by precipitation both now and, in the future, as climate change stands to increase rainfall.

Our Goal is to review relevant literature of stormwater infrastructure, quantify the sites' stormwater, and consider design alternatives to relieve pressure on the existing stormwater system.

The Challenges were creating designs for both Bowen and Mystic Avenues that fit in restricted space while also being in the public right of way.

Green Gutters

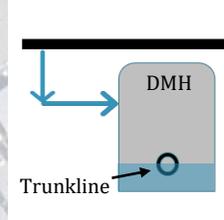
Subsurface Detention Basin

Bowen Avenue

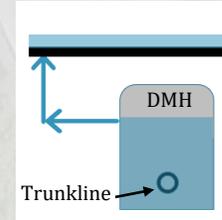
Includes four stormwater bump-outs, each with the purpose of infiltrating runoff from the surrounding properties and street.

Current Problem

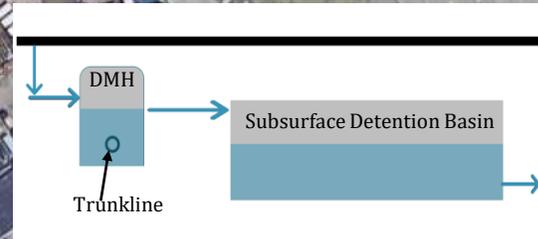
Light rain falls on street, get collected in DMH and drains into trunkline



Heavy rain falls too quickly to drain into trunkline, the DMH fills, and the street floods



This image highlights the already strained stormwater system where rain events like the one shown cause flooding near the site.



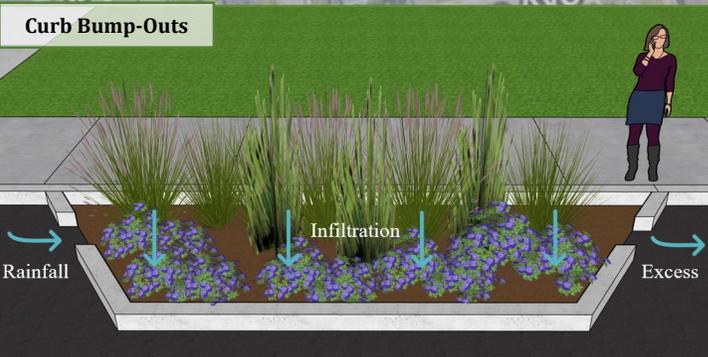
During heavy rain, the subsurface detention basin provides storage for the excess water in the DMH to prevent the back-up that causes street flooding

Mystic Avenue

1. Subsurface Detention
When the manholes fill during an extreme precipitation event, instead of the runoff backing up the entry pipe and causing flooding, the water will route to a subsurface detention basin. There, the water is stored until the pipes and manholes are not overwhelmed.

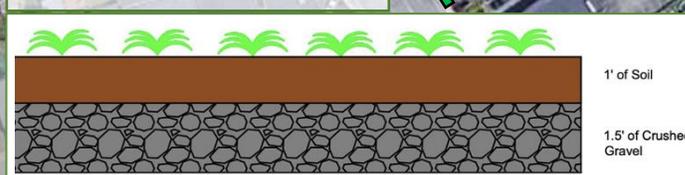
2. Green Gutters
Green gutters are a planted strip located where normal street gutters would be. Instead of just collecting and routing runoff like normal gutters, green gutters allow infiltration and pollutant removal.

Curb Bump-Outs



Curb Bump-Outs

Profile View of Green Infrastructure



Green Gutters

