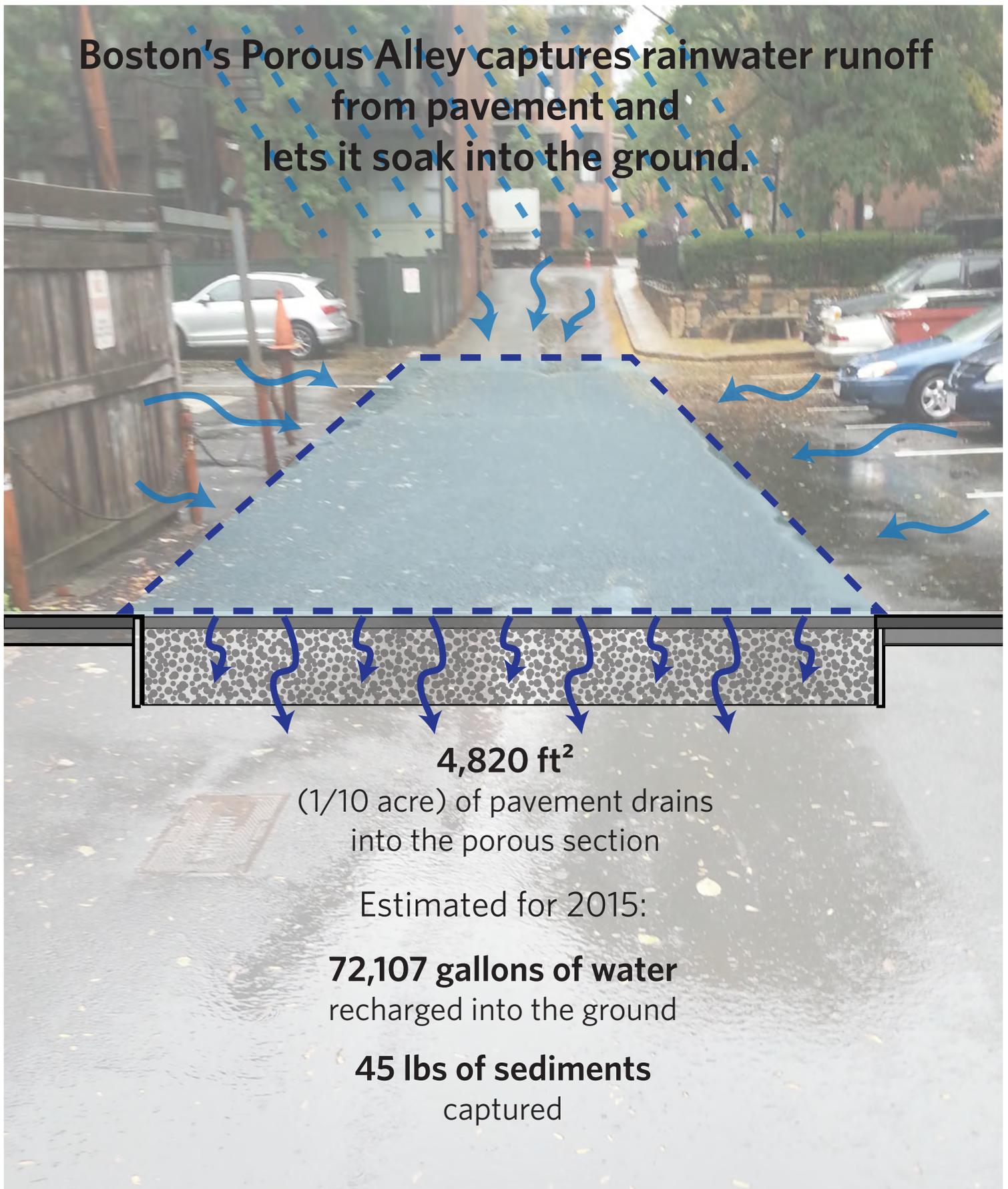


Boston's Porous Alley captures rainwater runoff from pavement and lets it soak into the ground.



4,820 ft²

(1/10 acre) of pavement drains into the porous section

Estimated for 2015:

72,107 gallons of water recharged into the ground

45 lbs of sediments captured



BOSTON POROUS ALLEY
When it rains, it recharges

Project funded by Massachusetts DEP and designed by Vanasse Hangen Brustlin



Public Alley # 543

Charles River Watershed Association
Boston Public Works Department
Boston Groundwater Trust

Boston's Porous Alley Demonstration Project

The City of Boston is evaluating many ways to “green” the city, especially paved surfaces, which contribute to flooding and water pollution. Porous pavement is a particularly useful technology in cities because it can reduce these problems, and recharge groundwater, while still providing the functions of pavement.

Constructed in 2015, this demonstration project provides a real-world opportunity to test porous pavement in Boston. The project is located in Boston's South End neighborhood, an area that needs groundwater recharge due to declining groundwater levels, and where runoff from rain and snow currently flows into a combined sewer, contributing to polluted discharges to the Charles River during heavy storms.

This demonstration project was designed to answer several key questions about porous pavement:

- How effective is it?

The project has been extremely effective at capturing runoff, recharging groundwater and reducing pollution from the site. Even with some reduction in the permeability of the porous pavement over time, the area continues to absorb almost all of the water that drains to it. Groundwater monitoring wells indicate that the recharge is increasing local groundwater levels.

- How difficult is it to install?

Installation took over 2 weeks. During this time, the alley was closed during the day and reopened for residents in the evening. Installation was complicated by the fact that, like in most urban settings, there were numerous mapped (and unmapped) underground utilities to work around. Construction required attention to detail, especially the final grading, and some adaptations that allowed the crew to work in the tight space of the alley.

- What about maintenance?

Porous pavement requires vacuum sweeping to maintain its permeability; this can be a challenge. The City of Boston does not currently own a vacuum sweeper so maintenance is done by a contractor. As Boston installs more porous pavement, the issue of long-term maintenance will need to be resolved. Snow plowing was not a problem.

Boston is considering a wide range of street greening techniques, including rain gardens, stormwater tree pits, and subsurface recharge chambers, as well as porous pavement. Overall, this demonstration project showed that porous pavement works well in this climate, and can be especially useful in space-constrained alleys where other techniques may not be appropriate.



BOSTON POROUS ALLEY
When it rains, it recharges

Project funded by Massachusetts DEP and designed by Vanasse Hangen Brustlin



Public Alley # 543

Charles River Watershed Association
Boston Public Works Department
Boston Groundwater Trust