Implementing LID/GI in Massachusetts Communities





Bioretention areas

Rain gardens and bioswales were the most commonly implemented BMPs in central Massachusetts communities

Bioretention area at Natick Middle School

WPI GI/LID Project

In 2016 the USEPA issued the MS4 permit, requiring Massachusetts' towns to mitigate stormwater pollution. The MS4 encourages implementation of Green Infrastructure (GI) and Low-Impact Development (LID). We worked with the Massachusetts Department of Environmental Protection and the Central Massachusetts Regional Stormwater Coalition to identify barriers to and successes in implementation of GI/LID. We interviewed stormwater officials from five Massachusetts municipalities and toured GI/LID in each community. We identified difficulties with finding land, funding projects, maintaining installations and a lack of data on stormwater mitigation tools. Using our data, we developed actionable guidelines to help municipalities more easily implement GI/LID.

Common Challenges and Some Recommendations:

Each challenge has recommendations to address it, and many have links to follow up with

Community Education

recommendations to help avoid other implementation roadblocks

Challenge: A lack of public support can hinder the implementation of GI/LID.

Once municipalities have secured sufficient funding and an appropriate location for the GI, the lack of approval of the residents can stop a project from progressing.

Collaborate with outside groups, such as activist groups and schools, to arrange GI/LID educational activities. Inc

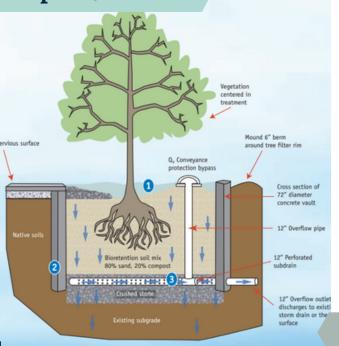
Challenge: Uncertainty around the details of these novel projects deters their use by town planner and engineers.

Show project sites that demonstrate the effectiveness of GI/LID to residents, developers, ConCom agents, planners, and engineers who are uncertain about implementing it in their communities. Several of our interviewees expressed that demonstration sites were a big factor in the decision to implement GI/LID in their community.

Devens MA is willing to have their community serve as an example for LID and GI techniques:

devenscommunity.com/work/

Space/Land recommendations to help find the space to implement BMPS



Challenge: Many communities often do not have the space to put in large public BMPs. Most public BMPs are incorporated into a preexisting plan for a public facility.

Recommendation 1: Consider incorporating BMPs into existing redevelopment projects.

Recommendation 2: Consider smaller BMPs like sidewalk bump-out infiltration and tree box filters that can be integrated into existing public projects.

Recommendation 3: Review zoning codes to eliminate passages that outlaw some types of BMPs, and make revisions that require the incorporation of small BMPs. info on zoning code review from the EPA:

Revising Local Codes to Facilitate LID

Example of a tree box filter BMP from the Massachusetts Green Stormwater Toolkit

Funding

recommendations to help find the money to implement BMPS

Challenge: Securing funding for GI/LID projects is challenging without the implementation of a stormwater fee, stormwater utility, or incentive program. Grant programs have been successful, but the ability of a town to receive grants is limited.

Explore Grant options such as the Municipal Vulnerability Preparedness (MVP) grant, and the Hazard Mitigation

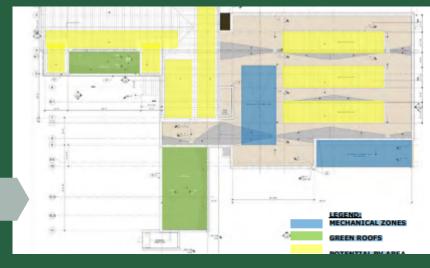
Assistance (HMA) grants. MVP grant information

HMA grant program guidance

Implementing a stormwater fee or enterprise fund will increase the available funding for GI/LID projects

Here is a link to information about Philadelphia's water utility fee - water.phila.gov/water-utility/
Here's a link to information about Ashland's enterprise fund: ashlandmass.com/616/Stormwater

This green roof at the Ashland community center will be funded by it's enterprise fund



Incentives

recommendations to encourage private developments to implement BMPS

Challenge: Private companies do not incorporate stormwater-friendly developments unless incentives make them more profitable or they are forced to by regulations.

An adaptation of Devens discount on permit development costs to include stormwater management and GI/LID would incentivize developers. Here is a link to information on their business services | DevensCommunity.com/work

Ensure that the intended incentive programs are attractive enough to developers for them to choose the more sustainable option.

Maintenance

recommendations to ensure BMPs are properly maintained

Challenge: Operations and Maintenance (O&M) is an issue in both public and private BMP installations due to the lack of funding and education for O&M workers.

Ensure adequate funding for operations and maintenance when implementing BMPs.

Offer joint training to coalition communities through the CMRSWC to O&M workers

Put educational signage on BMP locations to educate the public and make it easier for workers to differentiate between weeds and intentional plants.

Developers should provide a detailed O&M plan to be followed by O&M workers.

This should be implemented as a municipal regulation.

An educational placard explaining Stormwater Runoff from a Stormwater Maintenance BMP Resource Guide

One of the Hardest Working Ponds in Hennepin County)

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Challenge: Operations and Maintenance (O&M) is an issue in both public and private BMP installations due to a lack of responsibility or confusion about who is responsible for O&M.

Regulations should be put in place by municipalities that clearly state which parties are responsible for maintaining public and private BMPs.

Require maintenance of private BMPs to be performed by establishing fines and regulations in municipal code for continued maintenance of BMPs

More links

EPA - Managing Stormwater with Low Impact Development Practices - 2009

FEMA - Building Community Resilience with Nature-Based Solutions-2021

Philadelphia Water Department - Green Stormwater Infrastructure Tools-2009

EPA and Seatle Public Utilities - Green Stormwater Operations and Maintenance Manual - 2009

Operation and Maintenance of Green Infrastructure Receiving Runoff from Roads and Parking Lots -2016

Regular Inspection and Maintenance Guidance for Bioretention Systems / Tree Filters - 2011

Regular Inspection and Maintenance Guidance for Porous Pavements-2011

<u>Georgetown Law, Georgetown Climate Center - Green Infrastructure Toolkit: Incentive-Based Tools</u>

Georgetown Law, Georgetown Climate Center - Green Infrastructure Toolkit: Funding and Financing



