

A rain garden is a stormwater management structure that reduces the amount of overland flow by holding water in a depression and allowing it to naturally absorb back into the ground. Rain gardens can enhance a public space to add more biodiversity, filter pollutants out of stormwater and control flooding. Rain gardens are planted with native plants that are suitable for both wet and dry conditions, and can add beauty to an area with blooming flowers and foliage. Rain gardens allow approximately 30% more water to absorb into the ground than a traditional lawn and will act as an attractive stormwater management structure (Bannerman, 2003). Due to the topography of the Lower-West Side, rainfall is likely to run downhill from the southern to the northern portion of the neighbourhood. In order to reduce the amount of rainfall that will pool at the bottom of this hill, stormwater best management practices (BMPs) should be implemented throughout the neighbourhood, but especially in higher elevations. City owned properties such as Queen Square-West and King Square-West would be excellent sites to implement stormwater management BMPs, such as rain gardens, as these sites are located uphill and are public spaces that can demonstrate what green infrastructure looks like in practice.

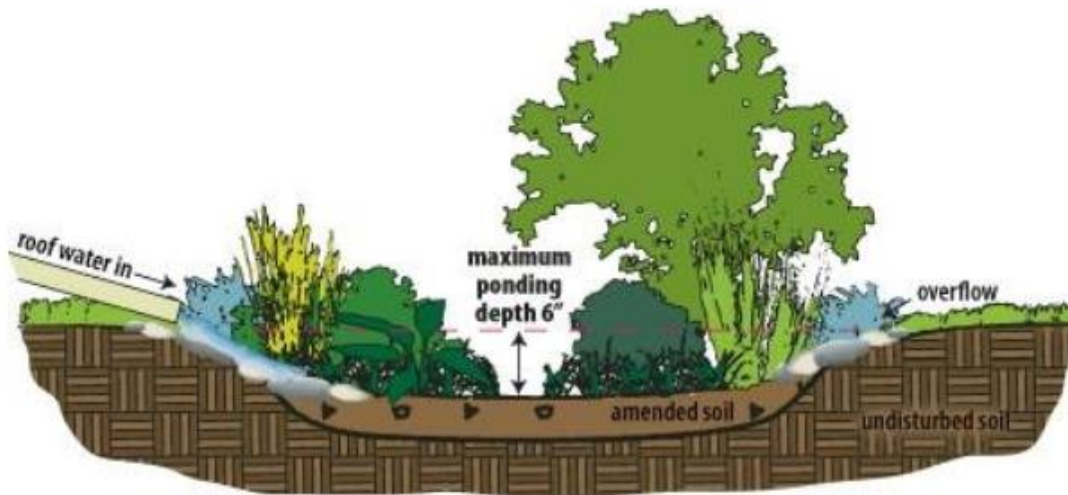


Figure 1: View of a typical rain garden (Alliance for the Chesapeake Bay, n.d.).

ACAP Saint John (ACAP) proposes to develop a rain garden within Queen Square-West Park that will capture rainfall that is traveling downhill towards flood risk areas. This rain garden will serve as a public demonstration of how green infrastructure can make Saint John a climate resilient city and will enhance a public area in the Lower-West Side. ACAP will leverage community volunteers as well as staff from the City of Saint John Parks and Stormwater Services departments to help with the construction and installation of the rain garden. Volunteers will learn how to construct a rain garden and be provided with guidance on how they can replicate a rain garden project on their property. Typical residential rain gardens range from 100 ft² to 300 ft². The proposed rain garden in Queen Square-West will reflect the size of a residential rain garden and will be approximately 250 ft² in size. Educational signage will remind and/or inform community members of the project and the benefits of rain gardens for climate change adaptation and stormwater management. Maintenance of the rain garden will be completed by ACAP Saint John and require weeding and watering for the first two years until the perennials have fully established in the garden.

Overall promotion of the project will be done through ACAP Saint John's volunteer email list, social media platforms and webpage, flyers, and other local community groups. The local media and City representatives will be invited to attend the event to bolster community engagement. The results from this project will be posted to ACAP's webpage and social media accounts where ACAP can track how the material is being disseminated.

This project is designed to produce tangible results that lend themselves readily to measurement and quantification. For example, the size of the rain garden and capacity, the number of volunteers, in-kind contributions from community partners, number of media articles produced, number of likes/shares/views through social media, number of presentations, requests for information, and page viewings of ACAP's website will be measured to determine success.

Intangible results, such as a more aesthetically pleasing environment or a more environmentally conscientious community are more difficult to measure and will be evaluated based on solicited testimonials or questionnaires, unsolicited opinions (supportive or contradictory), and comments or requests for additional information.

The final results from this project will be incorporated into the ACAP's climate change adaptation plan for the City of Saint John as a definitive example of how green infrastructure can reduce flooding in Saint John and will provide a concrete example of what adaptation will look like. A demonstration project like this one will forge the path for developing transformative green infrastructure throughout the City of Saint John.

Project Timeline:

Step	Timeline
Design rain garden and source materials.	February-March 2019.
Work with City of Saint John Parks and Stormwater Services departments for support to remove sod, lay pipe and cut the curb near the storm drain.	May 2019
Engage approximately 40 volunteers for help to add gravel, landscape cloth and planting native flowers and shrubs. Provide volunteers with information about rain gardens and their role in stormwater management.	May 2019
Promote the completion of the project through television, radio, and social media platforms, as well as the ACAP Saint John website. Hold public education events and tours in the park with local scouts and girl guides, schools and community groups. Target reach: 1000 people online and in person	April-June 2019
Expected completion date: June 30, 2019	

Project Budget: Funding has already been secured from Green Communities Canada.

Item	Description	Cost
Materials	Gravel, native shrubs and wildflowers, drainage pipe, landscape cloth	\$3400
Signage	Signs displaying benefits of rain gardens/green infrastructure, and funder acknowledgment (2 @ \$600)	\$1200
Other	Public engagement materials, permitting costs, volunteer appreciation	\$400
Labour (City of Saint John Parks, Stormwater Crew, Volunteers)	Removing topsoil, amending soil, adding gravel and landscape cloth, planting.	In-Kind
Staff time (ACAP Staff)	Planning, garden design, communications	In-Kind
Total budget for activity		\$5000

Attachment: Queen Square West Rain Garden Site Plan.

References:

Alliance for the Chesapeake Bay (n.d.). Rain Gardens. Retrieved from:
<http://www.stormwater.allianceforthebay.org/take-action/installations/rain-gardens>

Bannerman, R. (2003). Rain Gardens A How-To Manual for Homeowners. Wisconsin Department of Natural Resources. Retrieved from: clean-water.uwex.edu/pubs/raingarden