CRWC Green Infrastructure Support

Rochester Hills Final Presentation

November 9, 2015

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Clinton River Watershed Council

Our Mission:

The mission of the Clinton River Watershed Council is to protect, enhance, and celebrate the Clinton River, its watershed, and Lake St. Clair.

Our Vision:

Individual and community actions protect and improve the health of the Clinton River, assuring that its natural, economic, and recreational value enhances the quality of life of those who live, work, and play in the Clinton River watershed and Lake St. Clair.

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Project Introduction

- Goals:
  - Conceptual site plans showing suggested green infrastructure improvements
  - Artistic renderings of suggested green infrastructure improvements
  - Stormwater volume reduction estimates
  - Generalized cost estimates
- 2015 Conceptual Green Infrastructure Plans:
  - Rochester Hills
  - Sterling Heights
  - Utica

What is Green Infrastructure?

Green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier urban environments. Green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water. - United States Environmental Protection Agency

Why Green Infrastructure?

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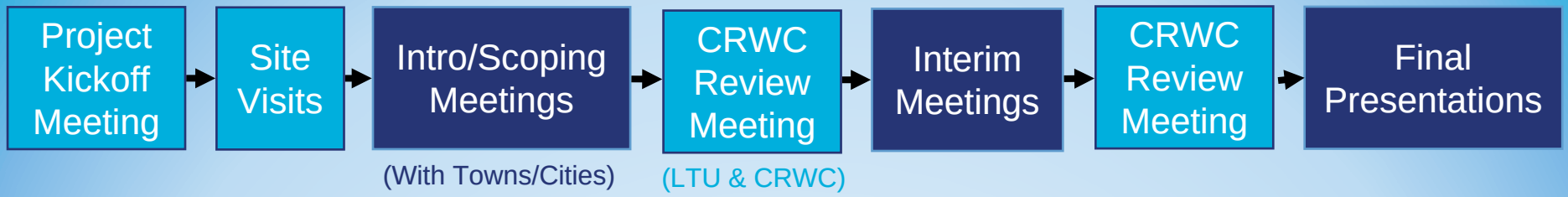
Project Timeline and Deliverables

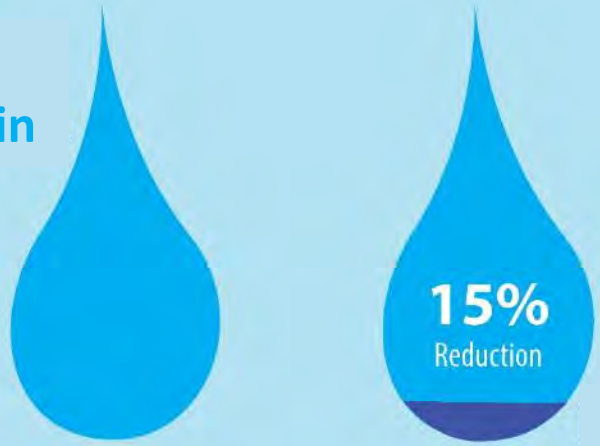
- May – November 2015



- Deliverables:
  - Report – Final Site Plan, Stormwater Calculations, and Cost Estimates
  - Printed Graphic Boards
  - PowerPoint Presentation
  - Digital Copies
- Cost Estimation
  - WERF – BMP and LID Whole Life Cost Models Tool
  - RS Means, MI LID Manual, Published Literature, and Local
  - Primary Contract Labor (not insourced or volunteer)

Runoff Reductions

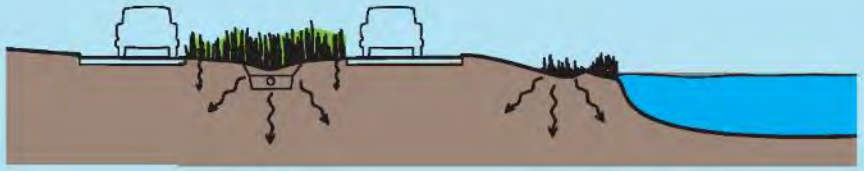
Existing Runoff from 2.26” of Rain



Proposed Runoff Reduction

Stormwater runoff reductions were calculated for a 2-year 24-hour storm event (2.26” of Rain).

Swale Conveyance



Naturalized Shore

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Rochester Hills Sites

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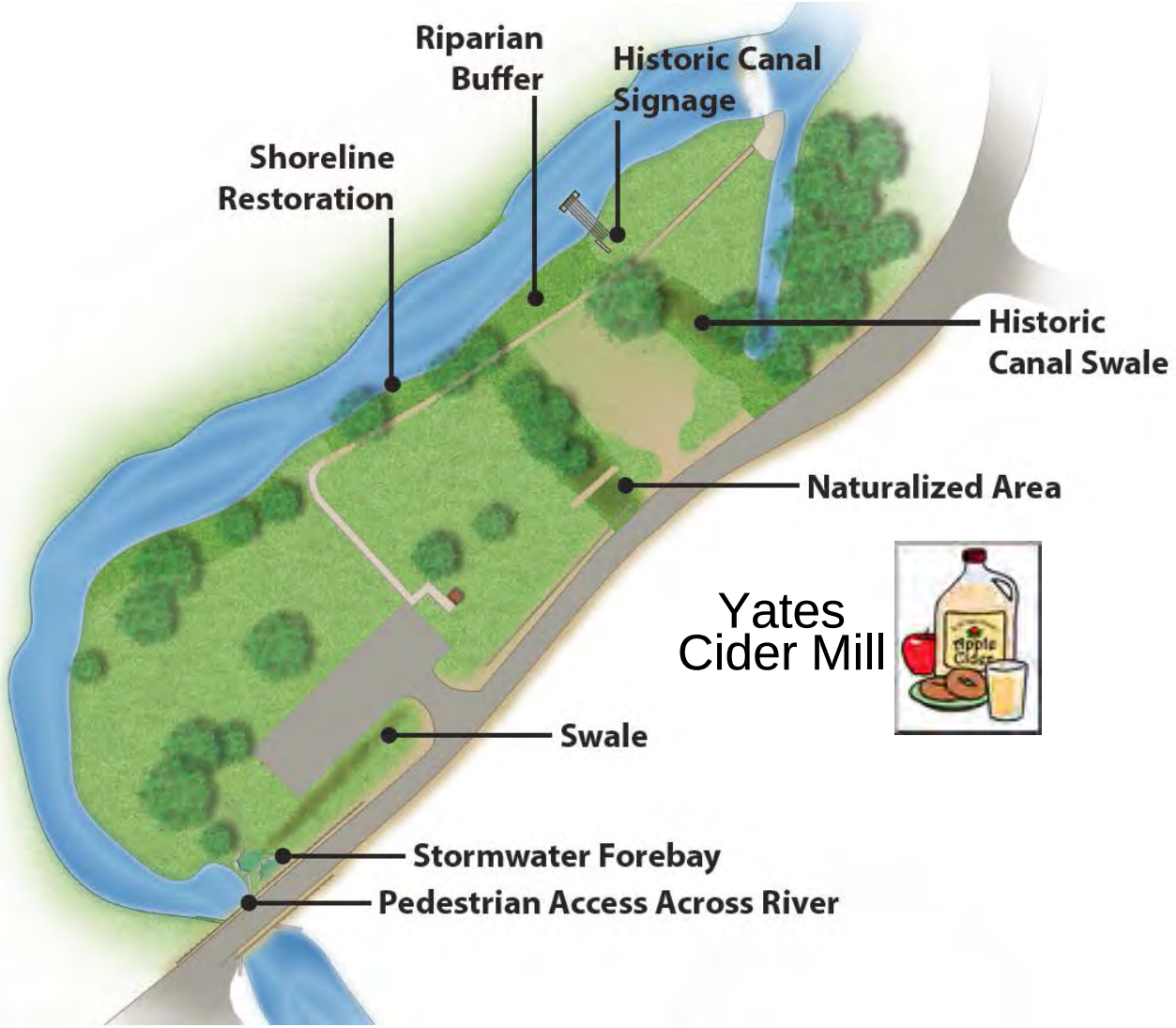
Yates Park

Yates Park



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Yates Park - Existing

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Yates Park – Historic Canal

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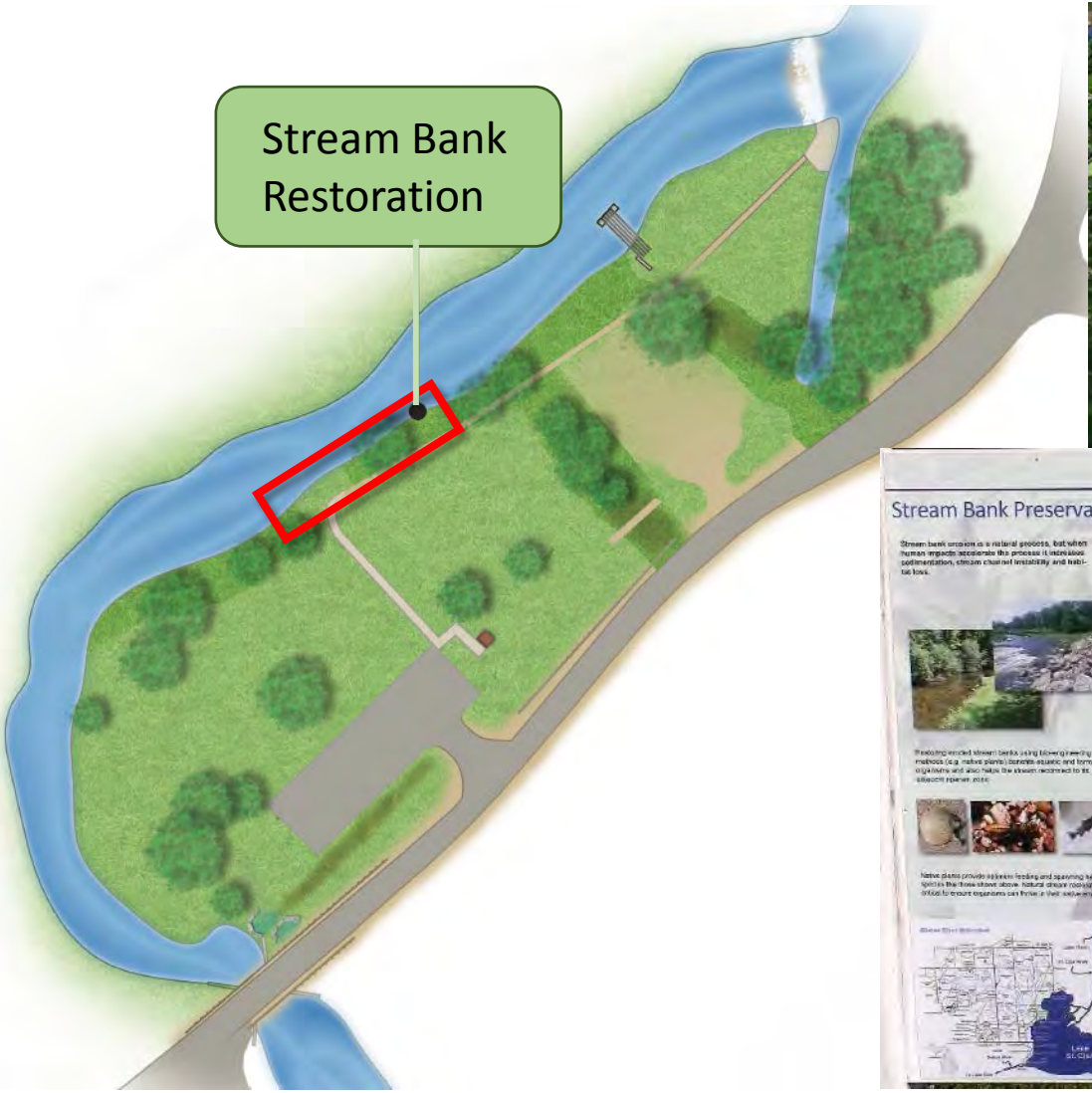
Yates – Stream Bank Restoration



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Borden Park

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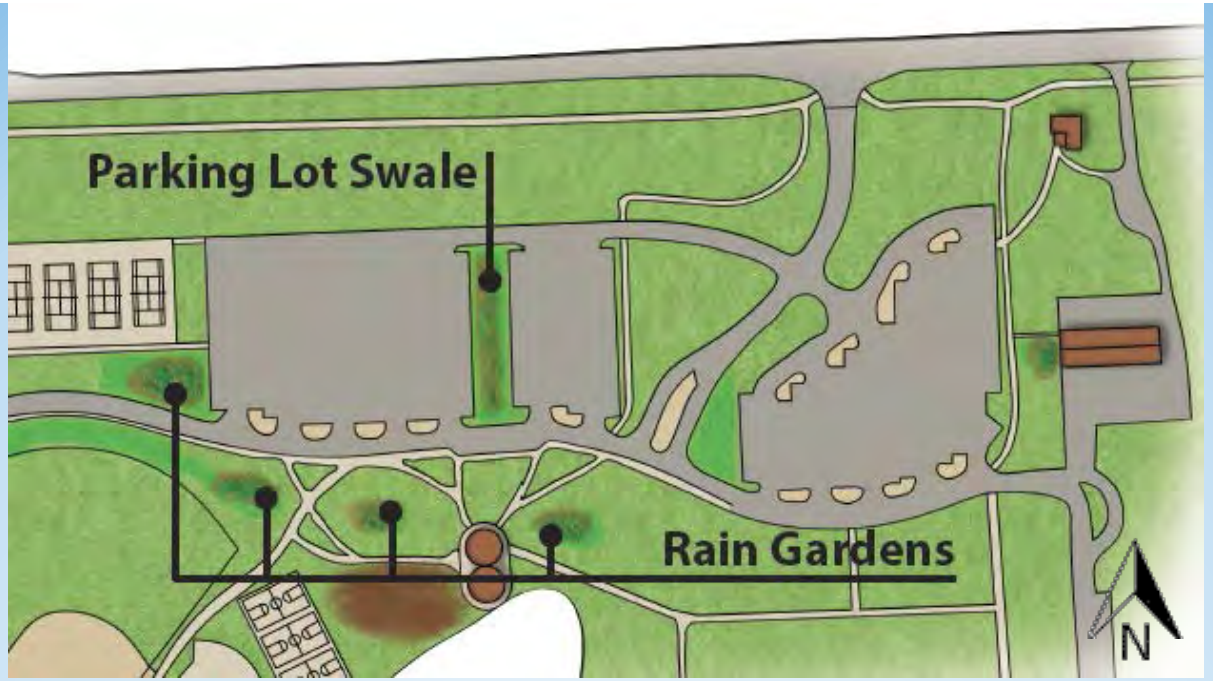
Borden Park Rain Gardens & Swale



- Four Rain Gardens
  - $93,000 Total
- Swale
  - $15,600

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Borden Park Rain Gardens

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Borden Park - Swale

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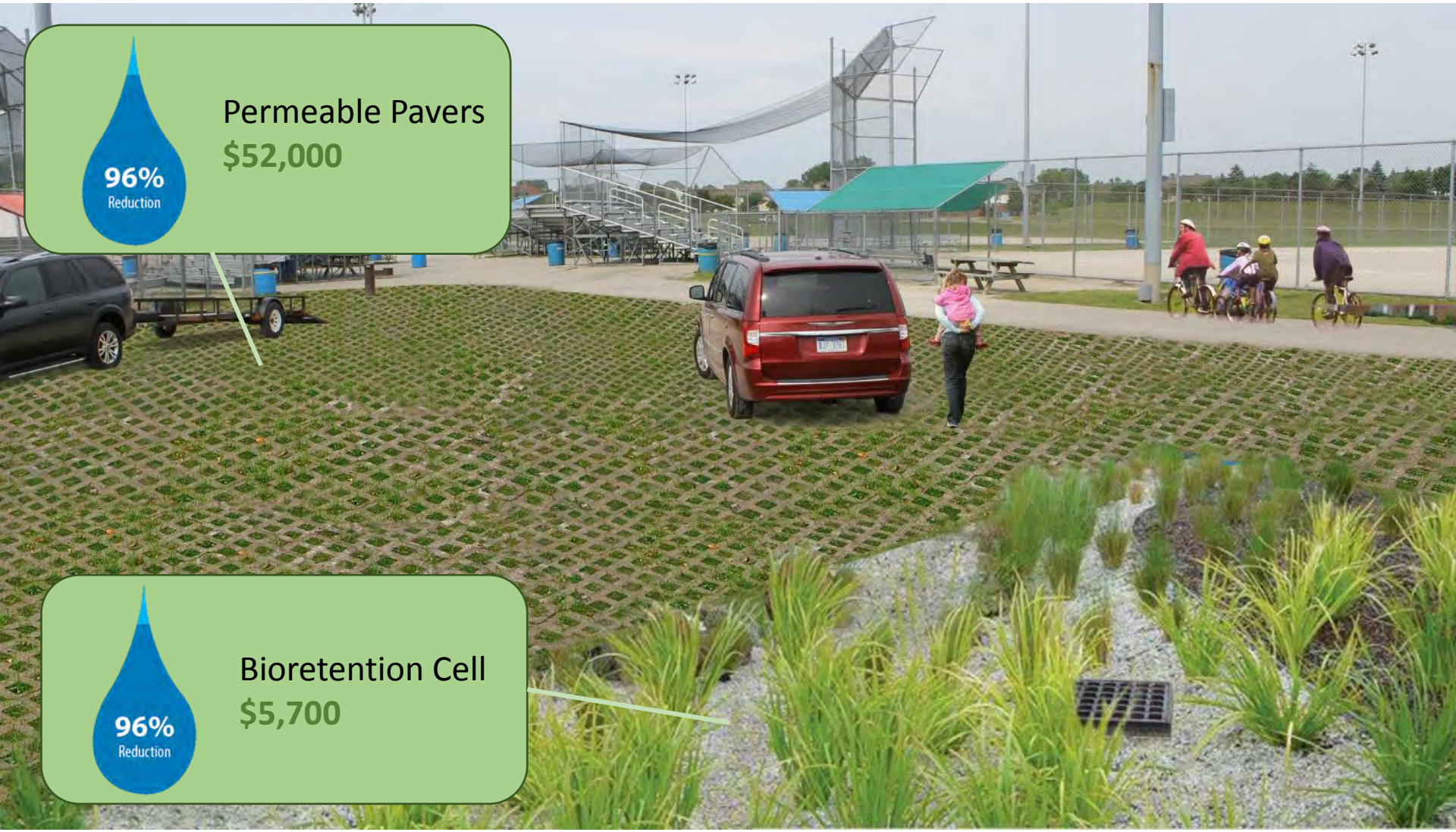

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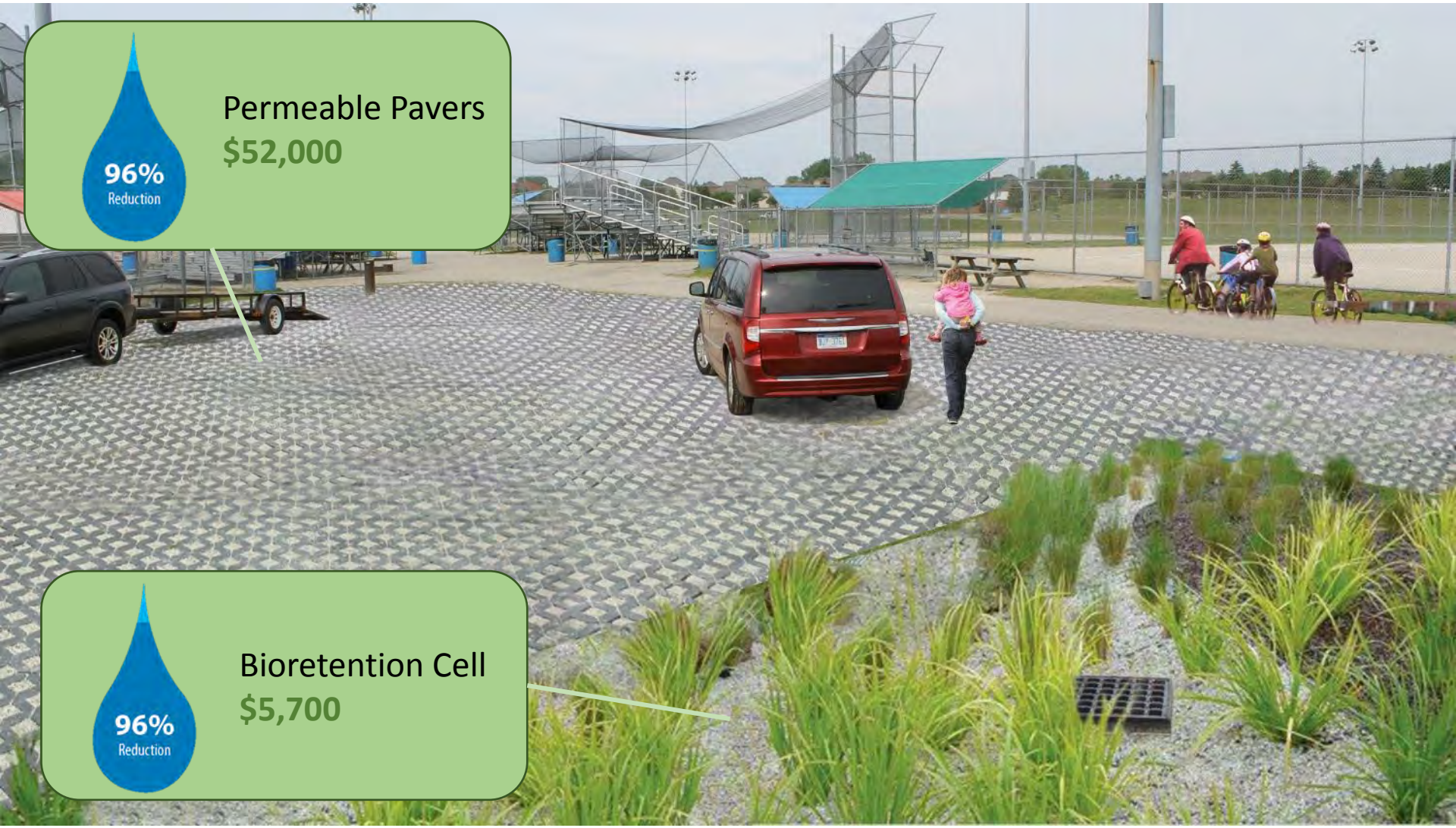

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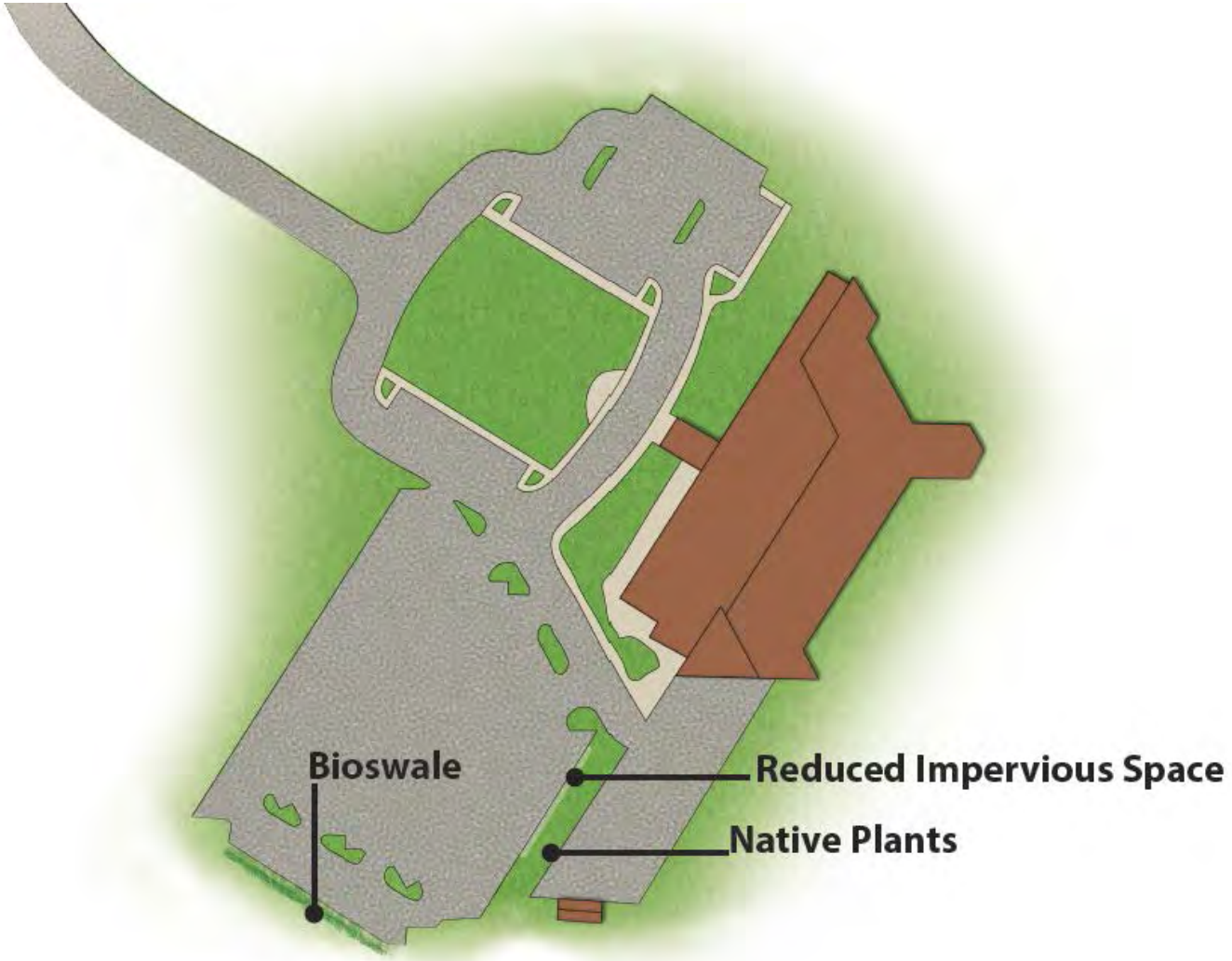
CWRC Office and City Hall

Rochester Hills City Offices



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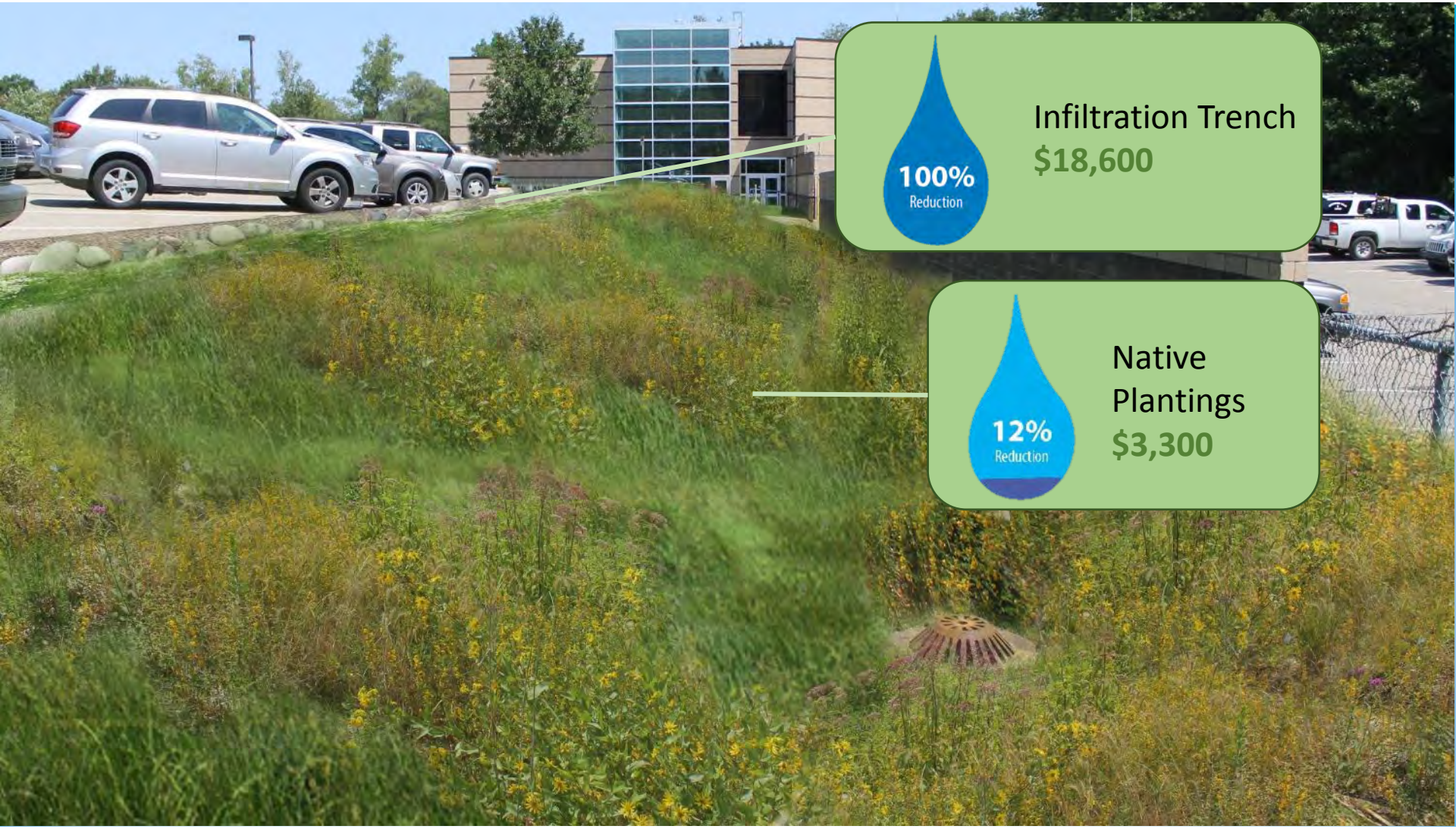

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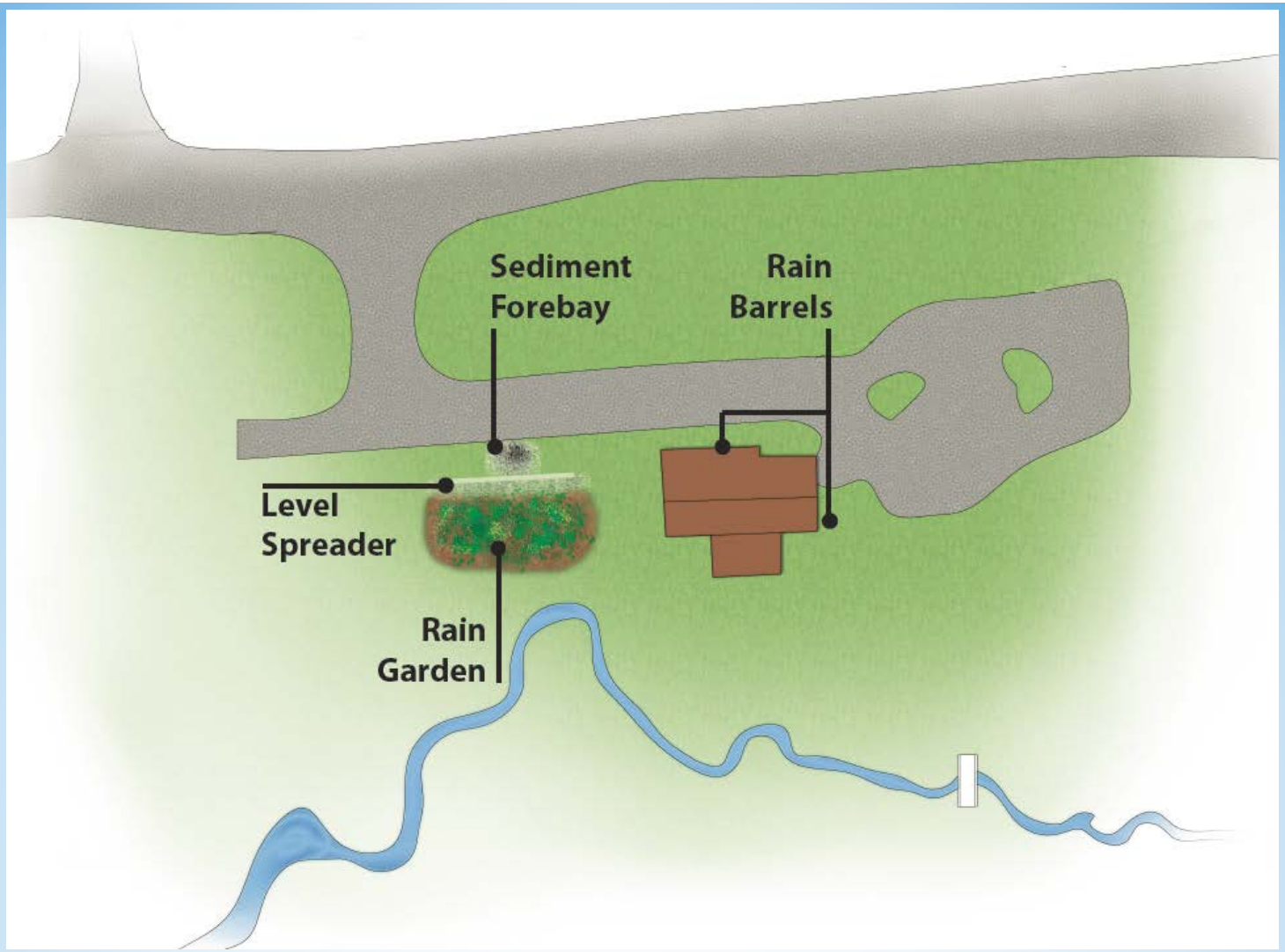
CRWC Office



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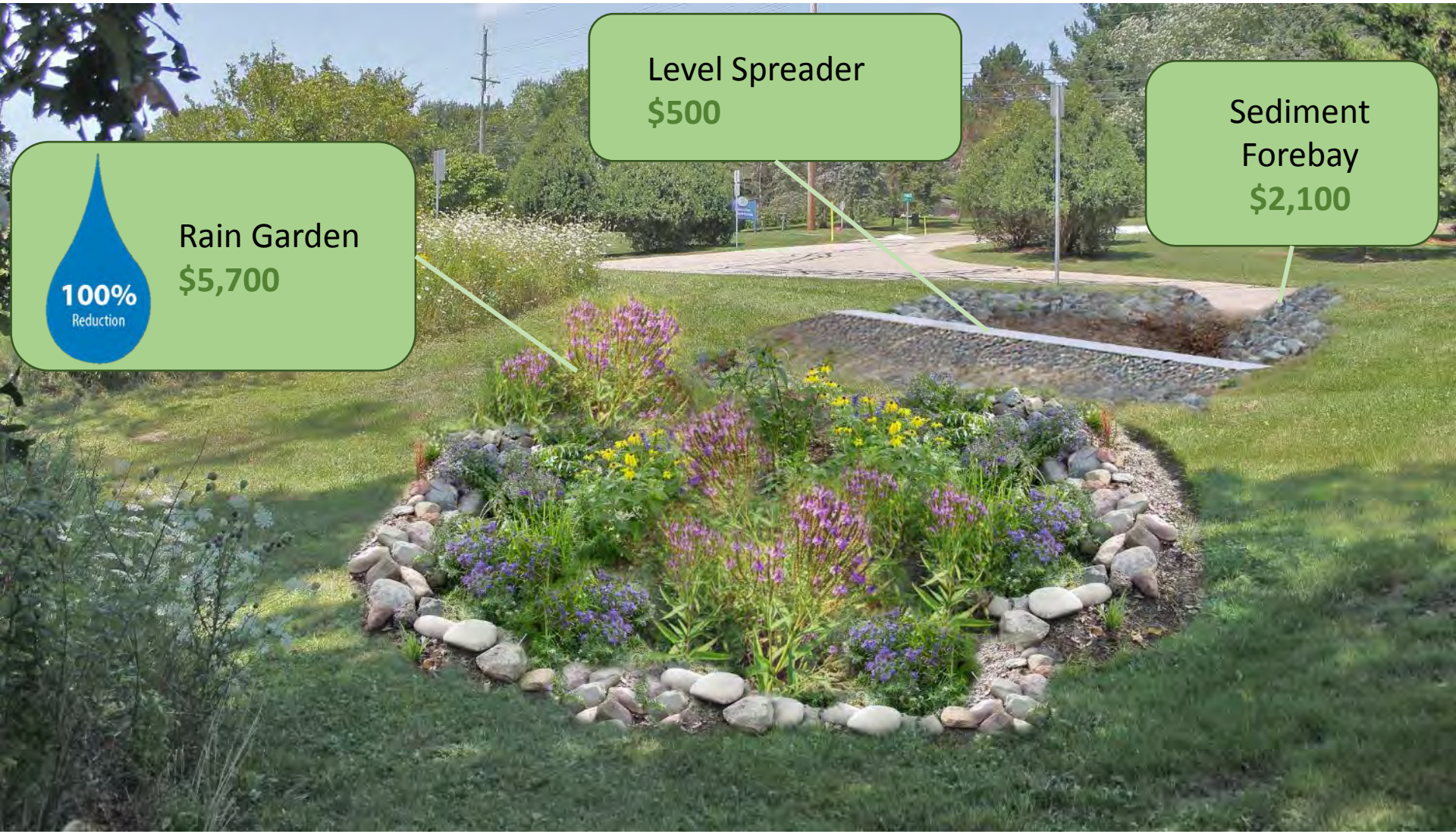

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Bench Rain Cistern

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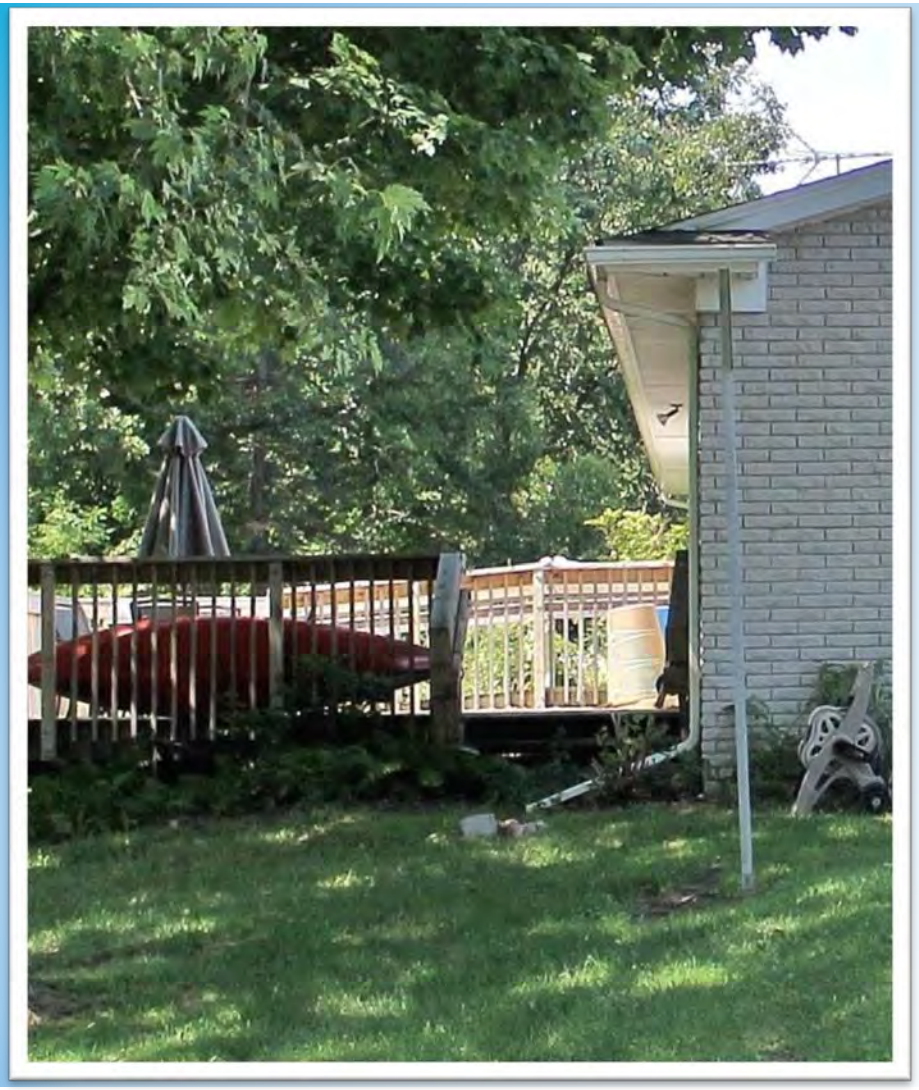

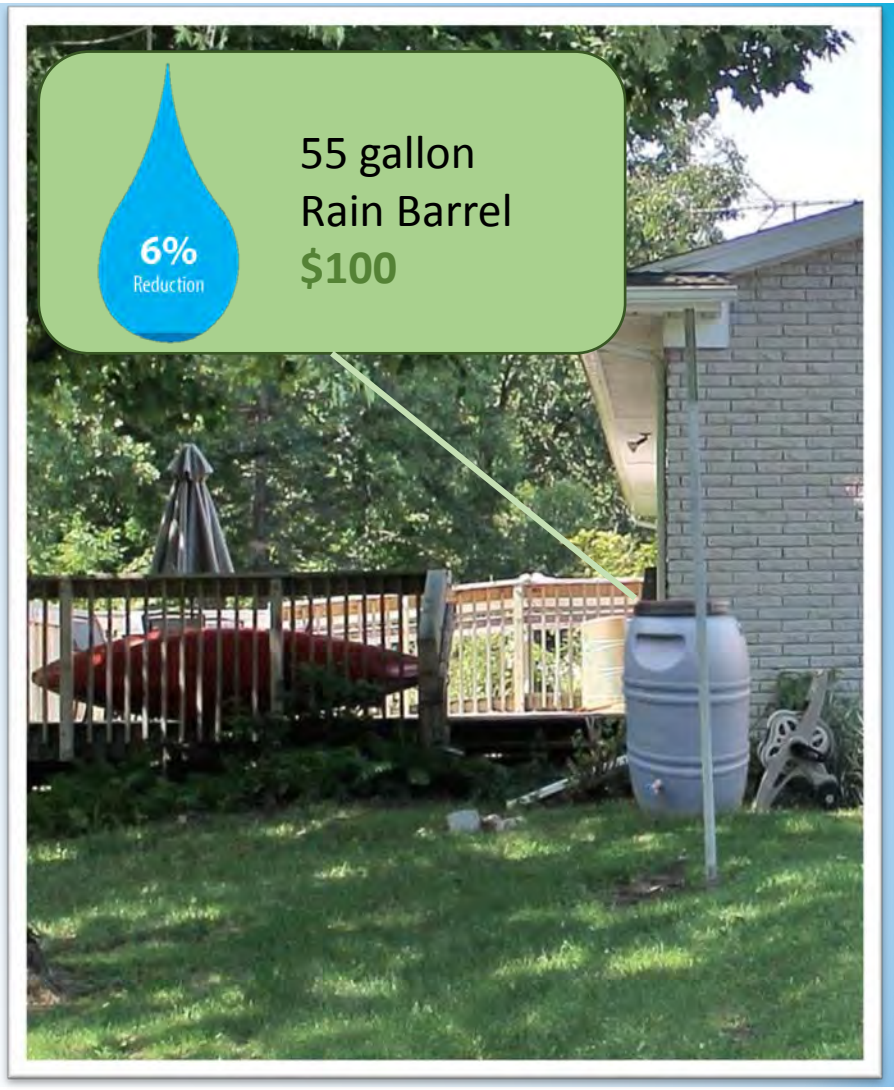

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Rochester Hills Runoff Reductions

Total Improvements:
$249,800 + Placemaking
$1.22/Gallon

Runoff from 2.26" Rain – Existing
Runoff from 2.26" Rain– Proposed

Site	Existing Runoff (gallons)	Proposed Runoff (gallons)	Reductions (gallons)	Reductions %
CRWC Offices	6,033	4,142	1,890	31%
Borden Park	882,341	723,635	158,707	18%
Yates Park	123,265	106,963	16,302	13%
City Hall	48,404	20,935	27469	57%
Sites Total	1,060,043	855,675	204,368	19%

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http://www.ltu.edu/engineering/civil/watertowns.asp