



Students for Stormwater: An Aggregated Approach to School Rain Garden Implementation

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Overview

STEP is a multi-agency initiative developed to support broader implementation of sustainable technologies and practices within a Canadian context.

The water component of STEP is a conservation authority collaborative. Current partners are:



Our key areas of focus are:

- Low Impact Development
- Erosion and Sediment Control
- Road Salt Management
- Natural Features Restoration

Presentation Overview

- Formation of Students for Stormwater and project goals
- Partnerships and collaboration
- What we have accomplished so far
- How we moved forward during Covid-19
- Lessons learned and challenges
- Next steps





Green Glade Senior Public School



Allan A. Martin Senior Public School



Kenollie Public School



Glendale Public School

Let's Build More Rain Gardens Faster and Cheaper!



By aggregating rain garden projects we could build two times more rain gardens

Benefits of Aggregating rain garden projects:

- Capitalize on cost savings
- Build economies of scale
- Maximize process efficiencies
- Expedite the implementation of climate change adaptation practices



Thank you to our funders

CVC received funding from the EcoAction Community grant

- \$100,000 to build six rain gardens between 2020 – 2023

Funding support also provided by the Toronto Zoo

- Design of six rain gardens

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada



Accelerate the Uptake of Natural Infrastructure

- Streamline design, construction and maintenance
- Lower the cost
- Improve community climate change resilience
- Reduce pollutant loading
- Improve biodiversity



Get the Teachers, Students and Community Involved



- Engage the community
- Encourages environment stewardship, experiential and outdoor learning
- Share knowledge and lessons learned with other professional

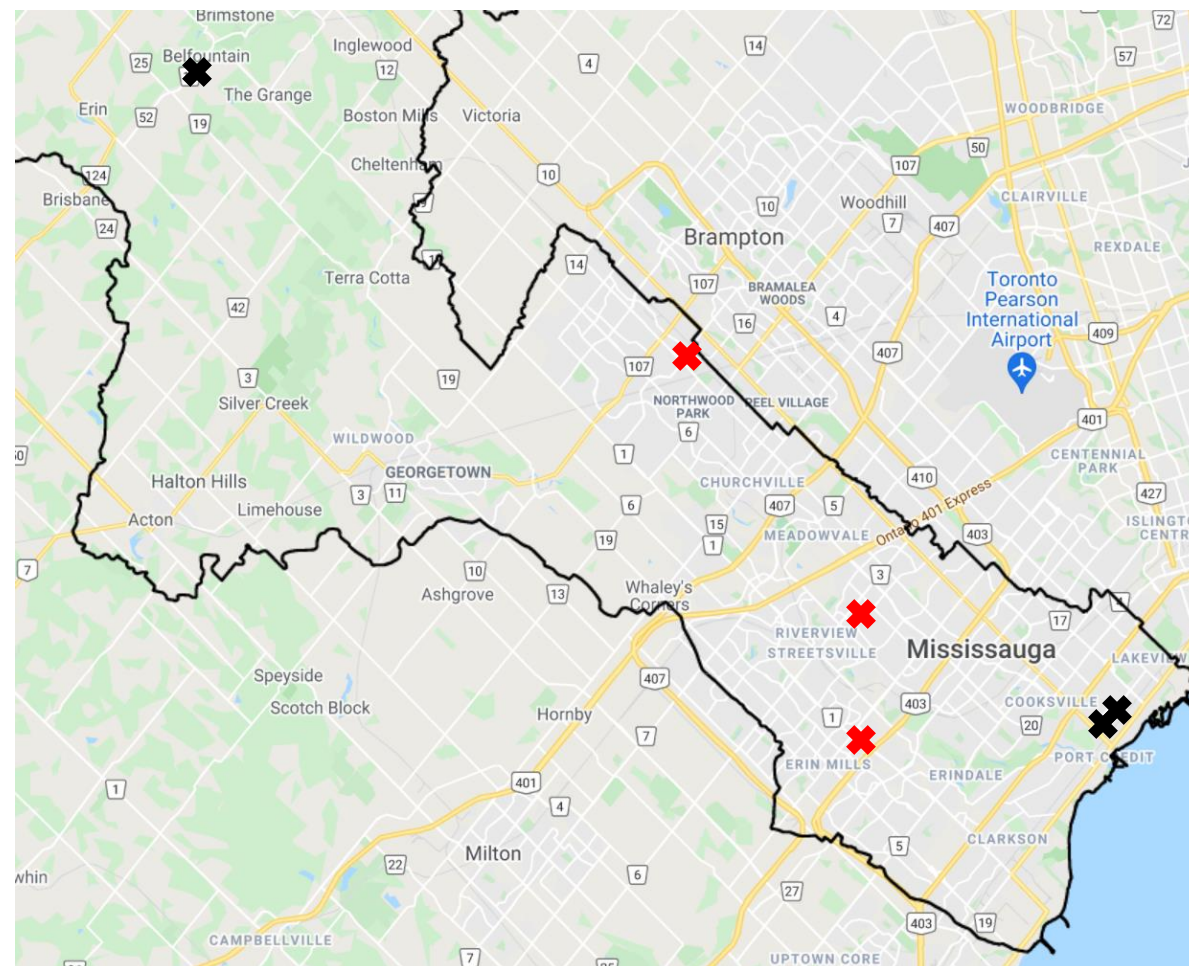
Reduce the Cost of Rain Gardens

Item	Group 1 School Budget	Budget per school
Contractor	\$6,000	\$2,000
Materials and supplies	\$36,000	\$12,000
Educational signs and materials	\$5,460	\$1,820
Additional amenities at Belfountain P.S.	\$1,320	\$0
TOTAL	\$48,780	\$15,820

Total budget for three rain gardens = \$48,780

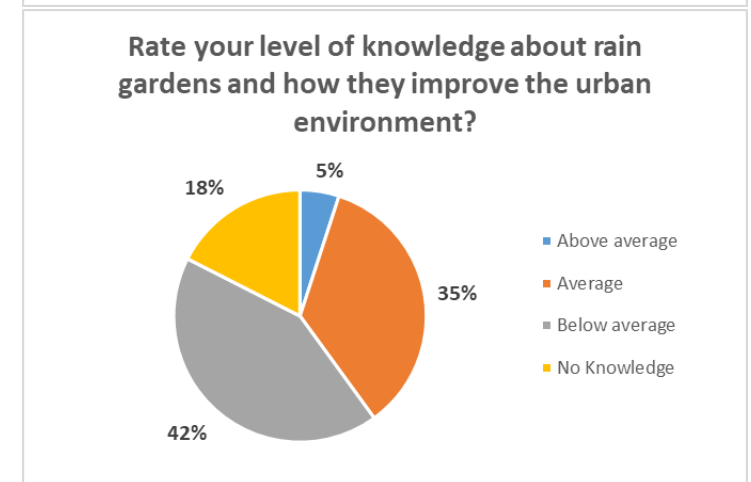
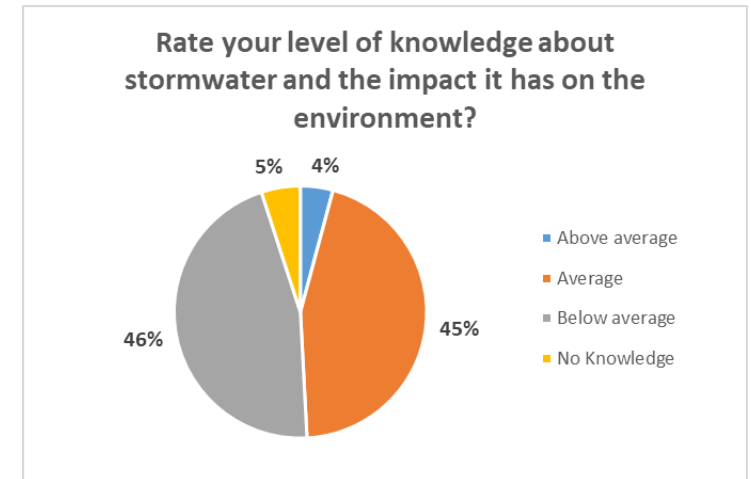
Students for Stormwater School Locations

- Group 1 (Construction in 2021)
 - Belfountain Public School
 - Mineola Public School
 - Janet I. McDougald
- Group 2 (Construction in 2022)
 - Credit Valley Public School
 - Whitehorn Public School
 - Our Lady of Fatima



Finding Efficiencies in Planning and Design

- Created templates and agreements to streamline the administrative processes
- Assessed our options with Covid-19 and lockdowns
- Surveyed 120 school staff virtually
- Secured a landscape architect to complete the designs for the six rain gardens



Understand the Site Conditions

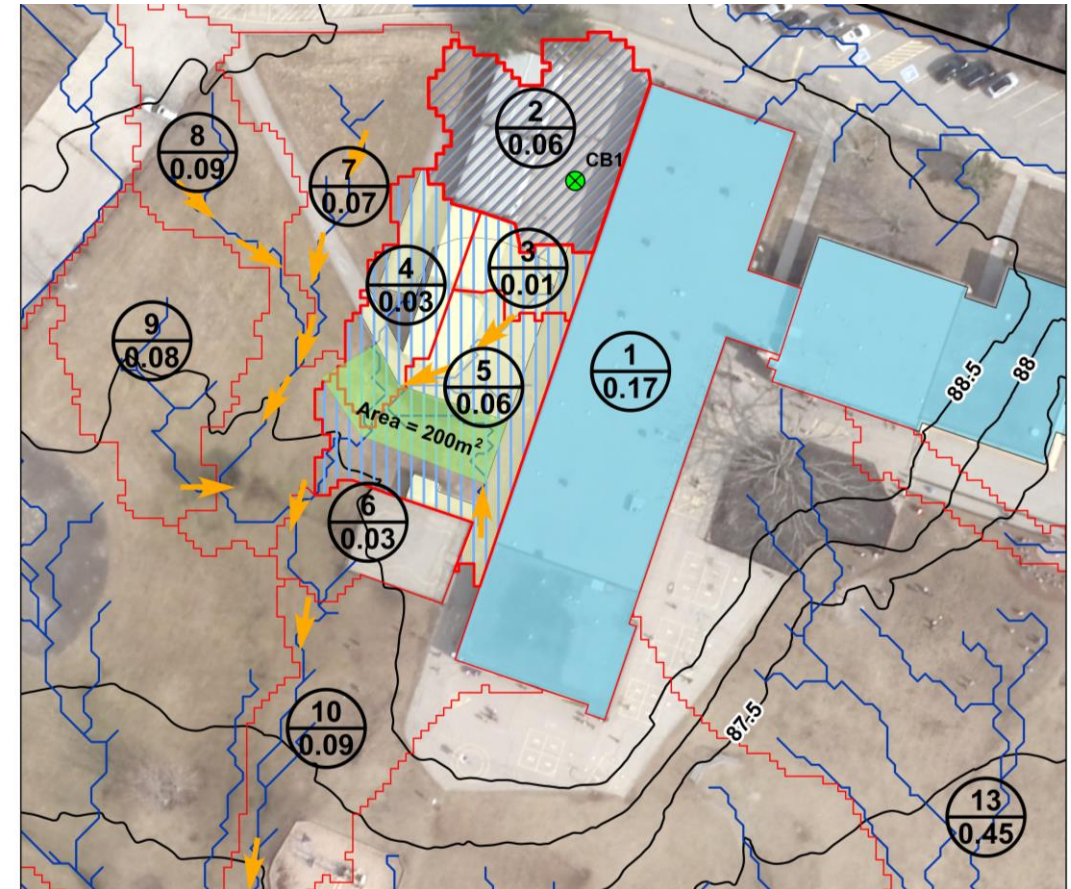
CVC staff completed school property to investigate

- What kinds of soils are on site?
- How much water can you capture?
- What are your pollution sources?
- Drainage issues



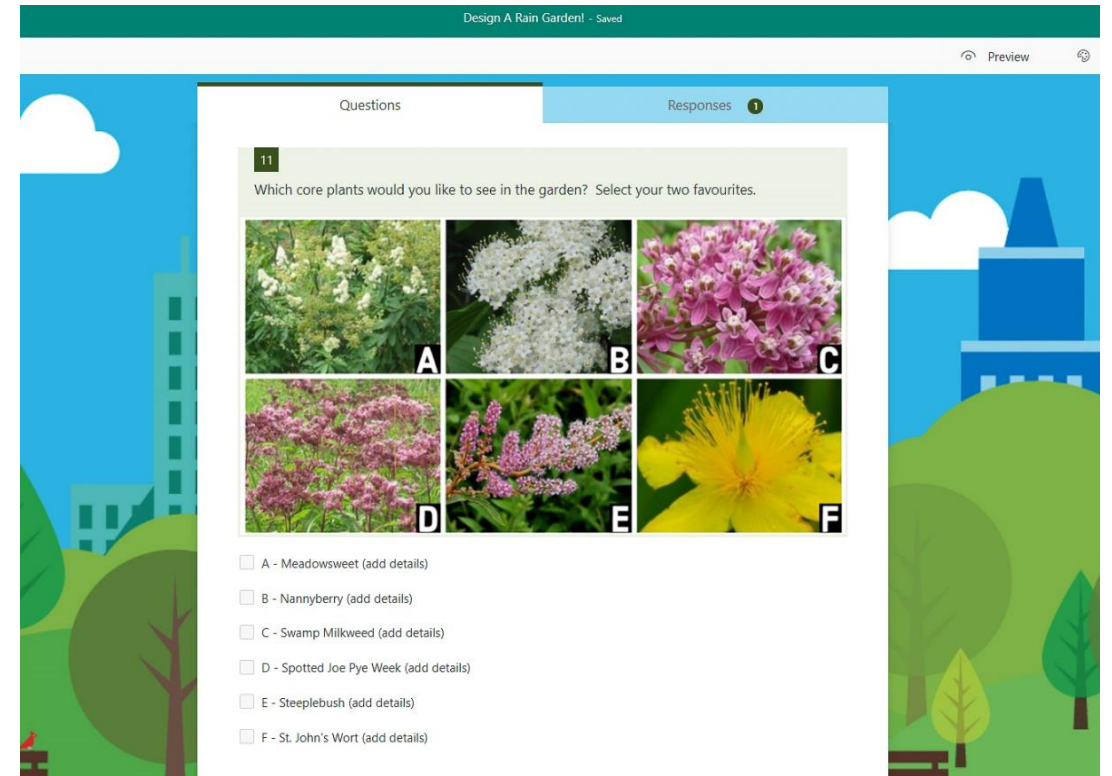
Design the rain gardens to collect as much stormwater as possible within budget and site constraints

- Drainage mapping
- Calculated appropriate footprint
- Ensure the rain garden can collect and infiltrate as much water as possible
- Surface drawdown of 24 hours, sub-surface drawdown of 48 hours



Have the Students Participant in the Design Virtually

- Hosted a virtual design charrette with each school
- Students watched a video and voted on plants and amenities
- 1,185 students participated
- Top plants: chokeberry, swamp milkweed, beardtongue, blue flag iris, butterfly milkweed, anise hyssop





Belfountain Public School – Before



Belfountain Public School Construction



Belfountain Public School Planting Day



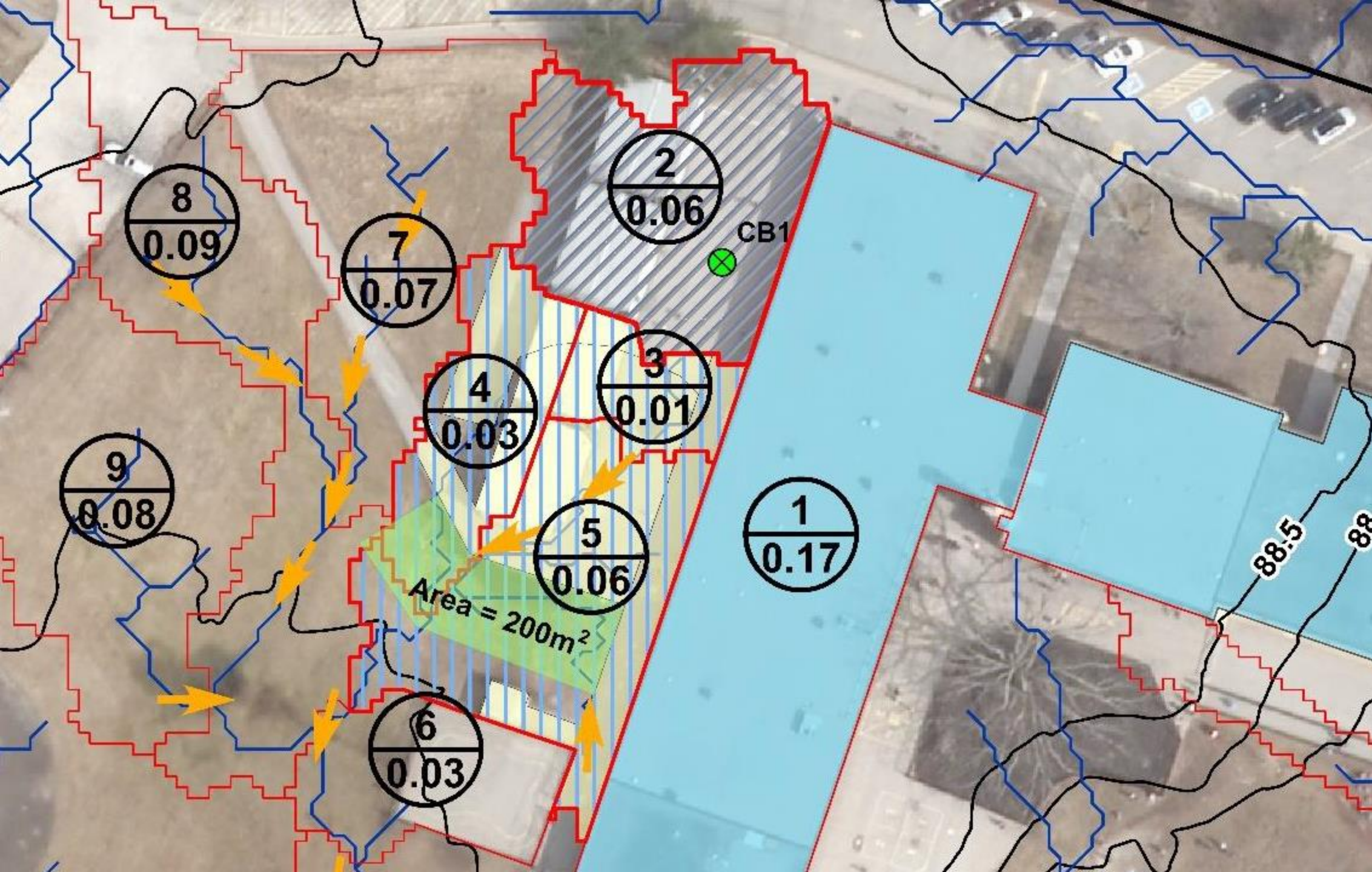
Belfountain Public School - Completed in Five Days



Belfountain Cost Savings

Item	Allocated Budget	Money Spent
Contractor	\$2,000	\$2,000
Materials and supplies	\$12,000	\$8,600
Educational signs and materials	\$1,820	\$1,820
Additional amenities at Belfountain P.S.	\$1,320	\$1,320
TOTAL	\$17,140	\$13,740

With the money savings of \$3,400 we can replace plants in the spring and/or provide additional amenities



Mineola Public School - Before



Mineola Public School Construction



Mineola Public School Planting Day



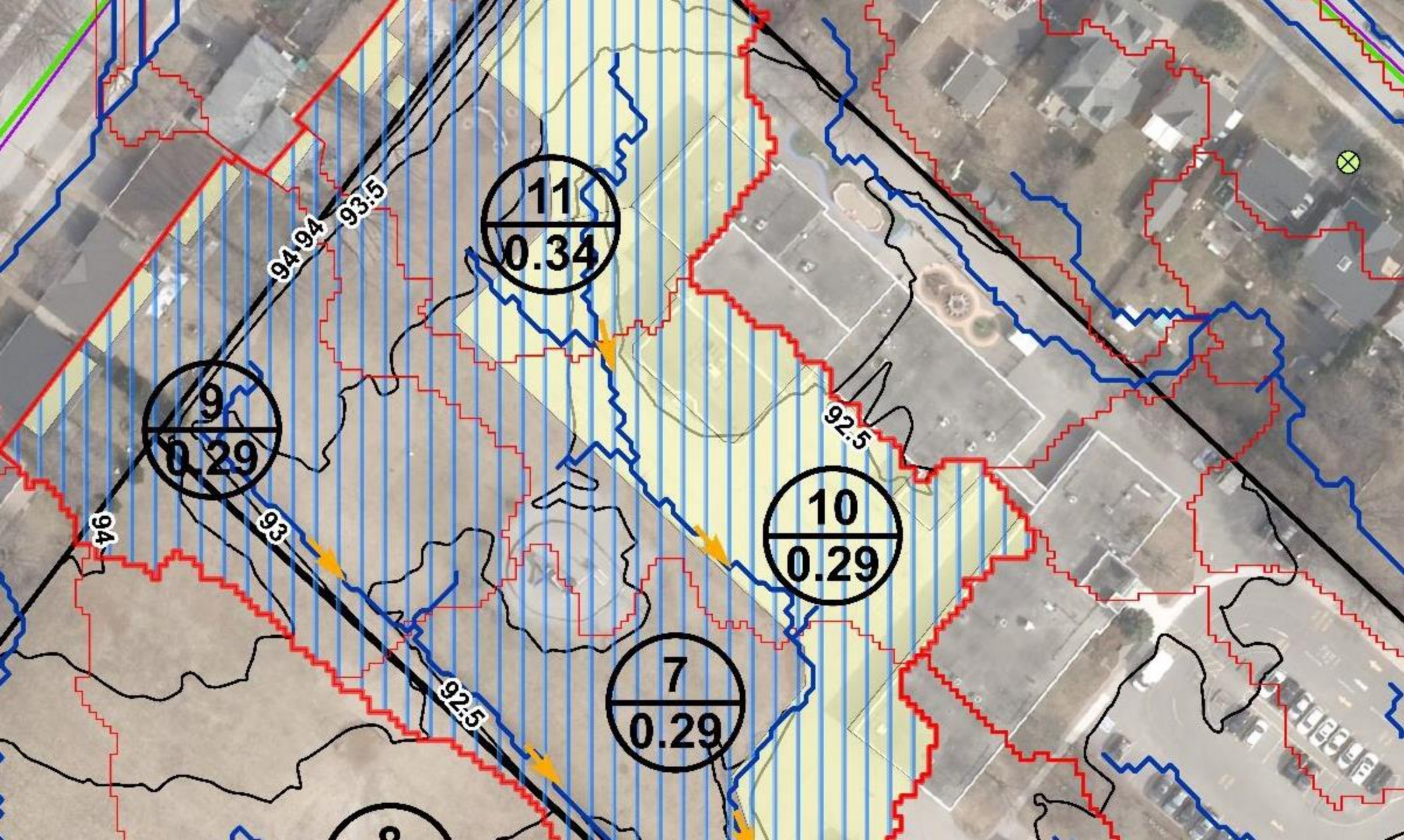
Mineola Public School – Completed in Four days



Mineola Cost Savings

Item	Allocated Budget	Money Spent
Contractor	\$2,000	\$2,000
Materials and supplies	\$12,000	\$7,550
Educational signs and materials	\$1,820	\$1,820
TOTAL	\$15,820	\$11,370

With the money savings of \$4,800 we can replace plants in the spring and build an accessible bridge over the swale



Janet I. McDougald Public School - Before



Janet I. McDougald Public School Construction



Janet I. McDougald Public School Planting Day



Janet I. McDougald Public School Completed in Five Days



Janet I. McDougald Cost Savings

Item	Allocated Budget	Money Spent
Contractor	\$2,000	\$2,000
Materials and supplies	\$12,000	\$6,700
Educational signs and materials	\$1,820	\$1,820
TOTAL	\$15,820	\$10,520

With the money savings of \$5,300 we can replace plants in the spring and provide other amenities

Lessons Learned and Challenges

- We were able to build the rain gardens faster and under budget
- Integrate more education components into the rain garden and features that invite the students into the rain garden
- High staff turnover at schools, challenge to keep staff up to date and engaged in the process
- Meet with the school staff and walk them through the draft designs

Next Steps

- Designs for Group 2 schools
- Rolling out rain garden curriculum documents and resources
- Creating a teacher rain garden network
- Spring maintenance ambassador training at the schools
- Assess plant survival rates and replant
- Preparing for construction and building Group 2 rain gardens

Thank You

For more information:

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For more information:

<https://cvc.ca/project/students-for-stormwater/>

Follow the project on social media!

#StudentsForStormwater