Using natural capital to manage stormwater in the City of Delta

Asset Management BC

September 26, 2018

Delta's Green Infrastructure Program

Goals:

- Increase permeable surfaces throughout the city
- Focus rainwater infiltration on sites that drain into fish-bearing streams
- Improve local streetscapes
- Increase community awareness
- Make green infrastructure the standard practice

https://tinkerscreek.org/what-is-stormwater/

Delta's Green Infrastructure Program

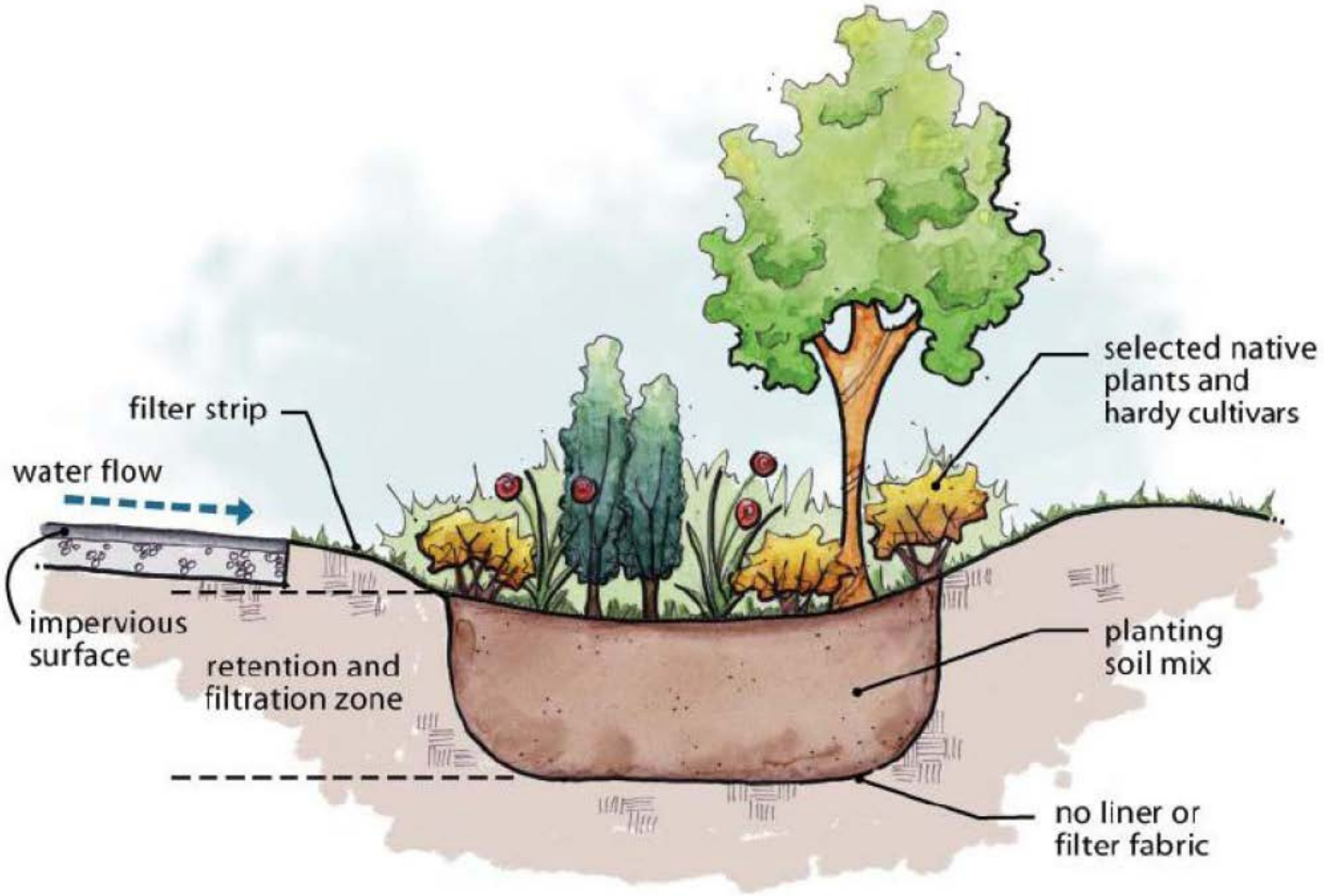
Our green infrastructure components:

- Porous parking (lots and curbside)
- Roadside infiltration swales
- Underground infiltration galleries
- Daylighted ditch
- Street trees
- Larger green spaces
- Bike lanes
- Rain gardens
- Education

10+ Years of Rain Gardens in Delta

Deborah Jones, rain garden coordinator with the Cougar Creek Streamkeepers

What is a Rain Garden?



http://www.crd.bc.ca/watersheds/lid/documents/RainGardenBrochure.pdf

Why Build a Rain Garden?

- Reduce flooding
- Reduce erosion in creeks
- Filter out pollutants before they reach the storm drain and enter our waterways
- Recharge groundwater
- Provide habitat for beneficial insects, birds and wildlife

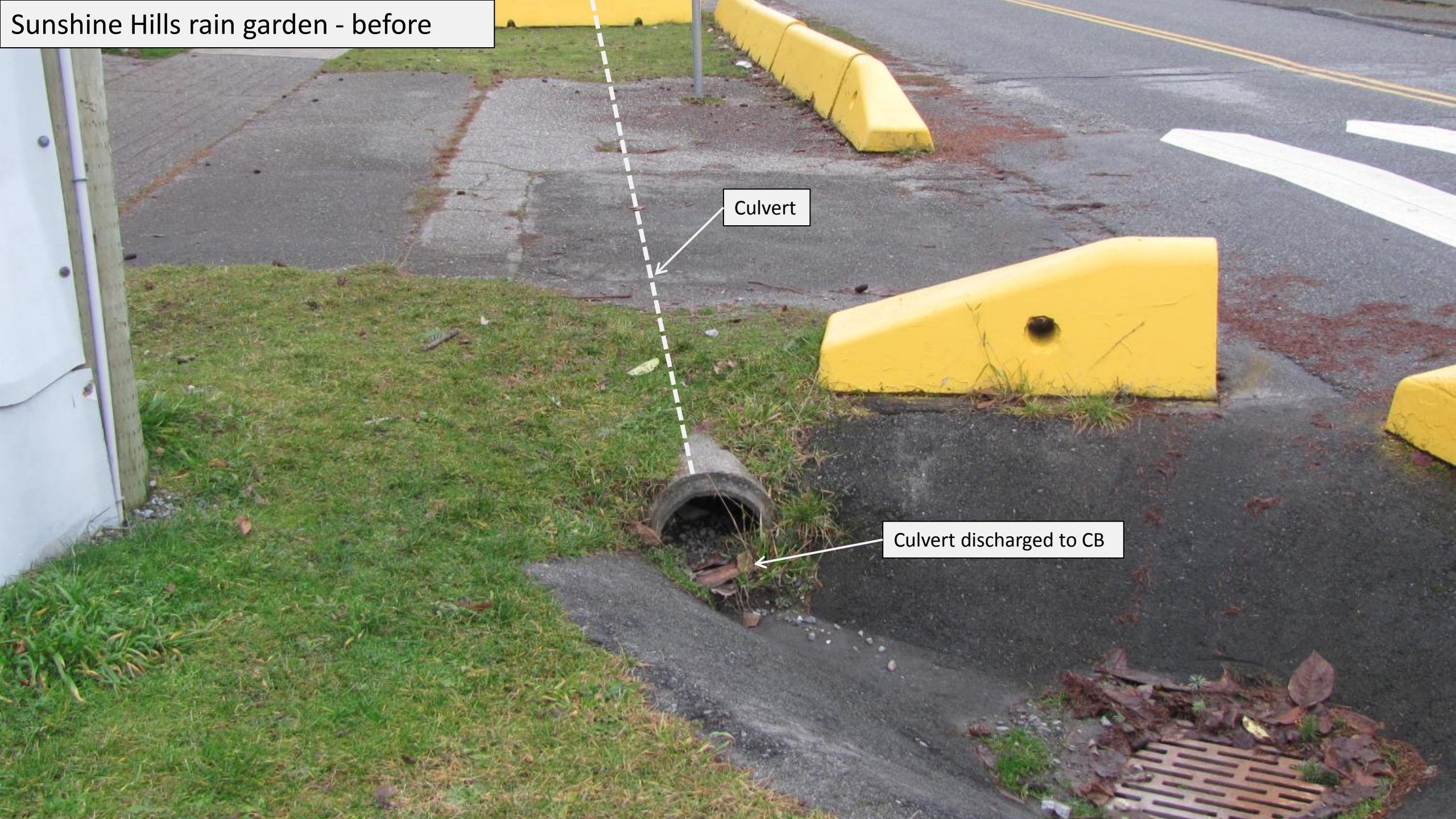
Rain Garden Examples

Cougar Canyon school rain garden - before

Cougar Canyon school rain garden - after

Cost: $26,963

Sunshine Hills rain garden - before




Sunshine Hills rain garden - after
Cost: $23,552


Heath rain garden - before


Heath rain garden - after
Trench drain moves runoff from gutter to garden
Curb cuts
Enlarged inflow
Cost: $14,002


North Delta rec centre - before


North Delta rec centre - after


Two years later


McCloskey Elementary – BC Hydro corridor - before


McCloskey Elementary – BC Hydro corridor - after

Unique Design Features


XHOT


PLEASE,
NO PAWS !!
RAINWATER
ONLY !!


PLEASE,
NO PAWS !!
RAINWATER
ONLY !!

Delta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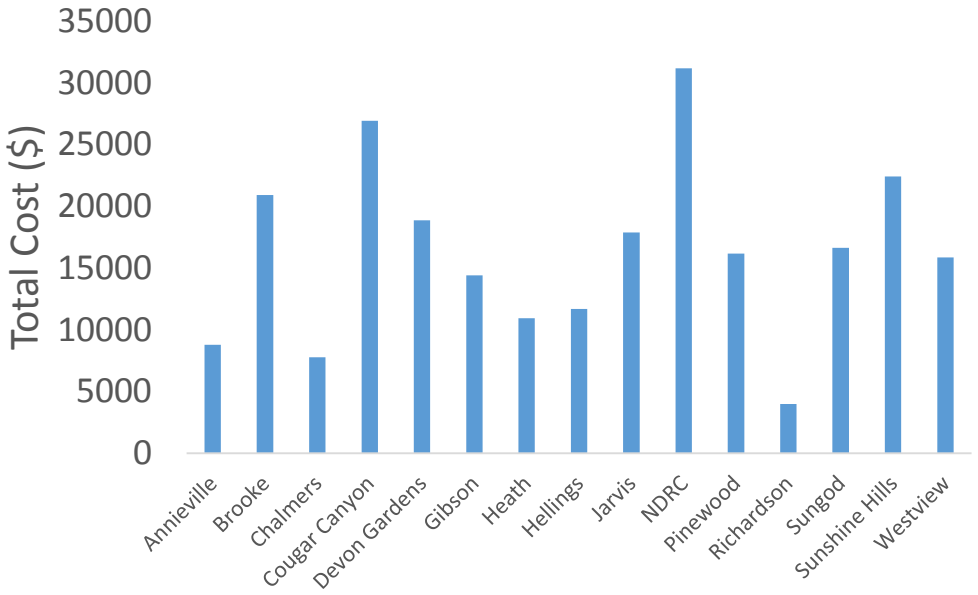
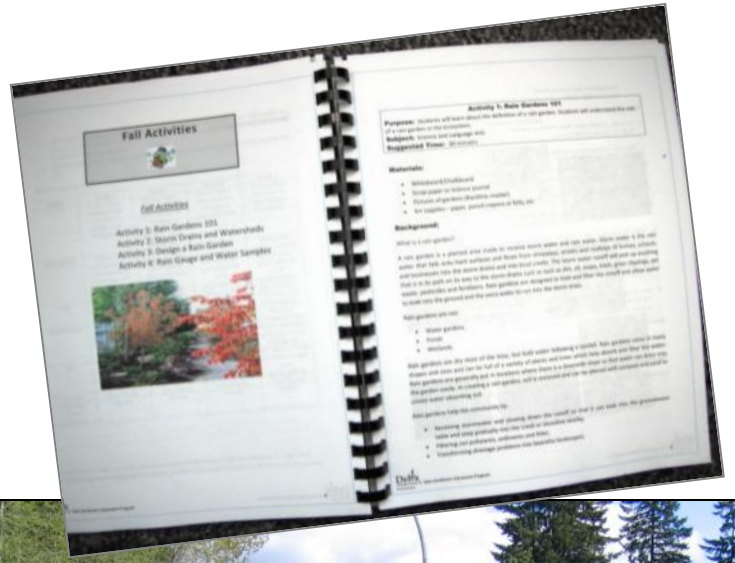
Construction Stats

- “Community” rain gardens: **27**
- “Municipal” rain gardens: **40+**
- Average cost per square metre: **$125**



School Rain Garden Program

Rain Garden Education Program



Rain Garden Education Program

In 2007, the Cougar Creek Streamkeepers published “Lawrence and the Rain Garden”

You can help!

Tips for home and garden

Help us with existing projects

Start your own project

Join our Green Team email list

Purchase our book *Lawrence and the Rain Garden*

Read all about the Cougar Canyon Elementary School Rain Garden Project in ...

Charming canine gardener Lawrence gives you the inside scoop in this 112-page book for the young and young-at-heart, featuring delightful and informative colour photos of the rain garden project from start to finish (though as Lawrence says, a garden is never finished, because it’s always growing and changing).

A great gift for dog lovers, gardeners and budding environmentalists!

http://www.vcn.bc.ca/cougarcr/helppurchase.html

Community Awareness

Community Awareness

SURREY NOW-LEADER

Rain gardens help keep North Delta's streams flowing

Those little dry creek beds at our parks, recreation centres and schools are more than just decorative elements.

JAMES SMITH / Sep. 14, 2016 4:00 p.m. / COMMUNITY

They're becoming an ever more common sight at our parks, schools and other community spaces, these little dry creek beds lined with ferns, flowers, bushes and trees.

But these rain gardens, as they're called, are more than simple decorative elements to spice up a boring piece of lawn; they're helping to make our streams and creeks healthy year-round.

Simply put, a rain garden is any landscaping that receives and soaks up rainwater runoff from an impervious surface such as a parking lot, street or roof. Deborah Jones of the Cougar Creek Streamkeepers organizes and constructs rain gardens in the area, including builds done in partnership with the Corporation of Delta and the Delta School District.

"The idea of a rain garden is instead of wasting rain water from a roof or a parking lot or a street down a pipe, out to a creek and out to the ocean within a couple of hours, instead we're going to use nature's free reservoir, which is the ground, to store that water," Jones said.

NEWS & EVENTS

- News
- Events Calendar
- District News
- Canadian Parents for French
- School News
- Community Links

Print

MCCLOSKEY STUDENTS BUILD DELTA'S LARGEST RAIN GARDEN

November 9, 2017 **Category:** District, School

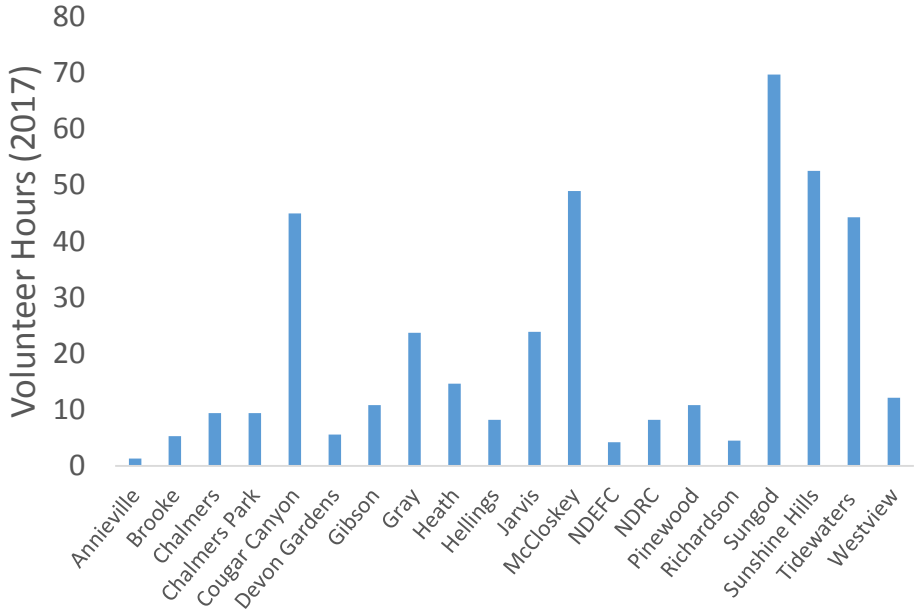
This week students at McCloskey Elementary worked alongside volunteers and members of Cougar Creek Stream

Ongoing Maintenance

Adopt-a-Rain-Garden Program

Rain Garden Volunteer Stats

- Number of volunteers: **16**
- Average number of hours/year to maintain a garden: **21 hrs** (range: 1-70 hrs)
- Average number of minutes/m^2/year: **9 min** (range: 1-35 min)



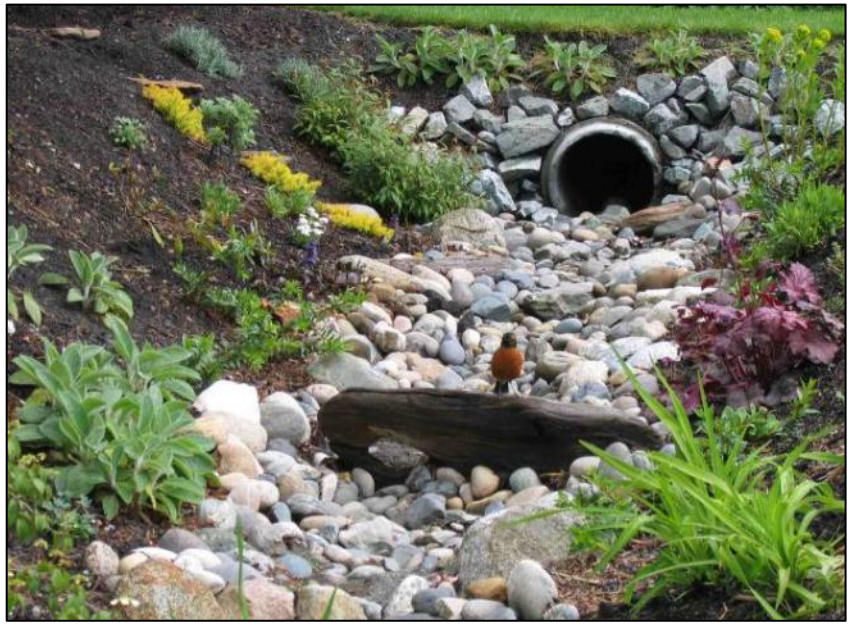
Lessons Learned

Photo source: Adrian MacNair, South Delta Leader (2014)

Lessons Learned

Size the overflow based on expected garden intake

Curb cuts: bigger is better



Use rocks, logs, pools, and plants to slow down water

Lessons from the School Rain Garden Program

- Collaborative project
  - Municipality
  - Streamkeepers
  - School district
  - School principal
  - Parent Advisory Committee
  - Neighbourhood “captain”
- Incorporate fundamentals of hydrology and landscape architecture (= proper function and plant survival)
- Train the construction crew (*water in a garden?*)
- “Planting Day” leads to sense of ownership
- Provide educational materials (e.g. signage)

Other Projects Using Natural Capital

- Hwy 91 off-line storage system (fish habitat)
- Tilbury stormwater management wetland
- Delsom pond
- Stormwater infiltration galleries in North Delta


Thank you!