



2011 BLOOMINGTON RAINWATER GARDEN PROGRAM

City of Bloomington

2011 Pavement Management Project Informational Meeting

January 10, 2011

What is a rainwater garden?

A rainwater garden is simply a garden designed to capture rainwater runoff in a slight depression, and infiltrate the water within 24-48 hours.



Thomas Ave. S., Bloomington, MN (2010)

Why build a rainwater garden?

- Enhance water quality of receiving waters
- Reduce runoff volume and intensity
- Promote groundwater recharge
- Provide wildlife habitat
- Attractive landscaping feature



Bloomington, MN (privately constructed)

Effects of urbanization on stormwater runoff:

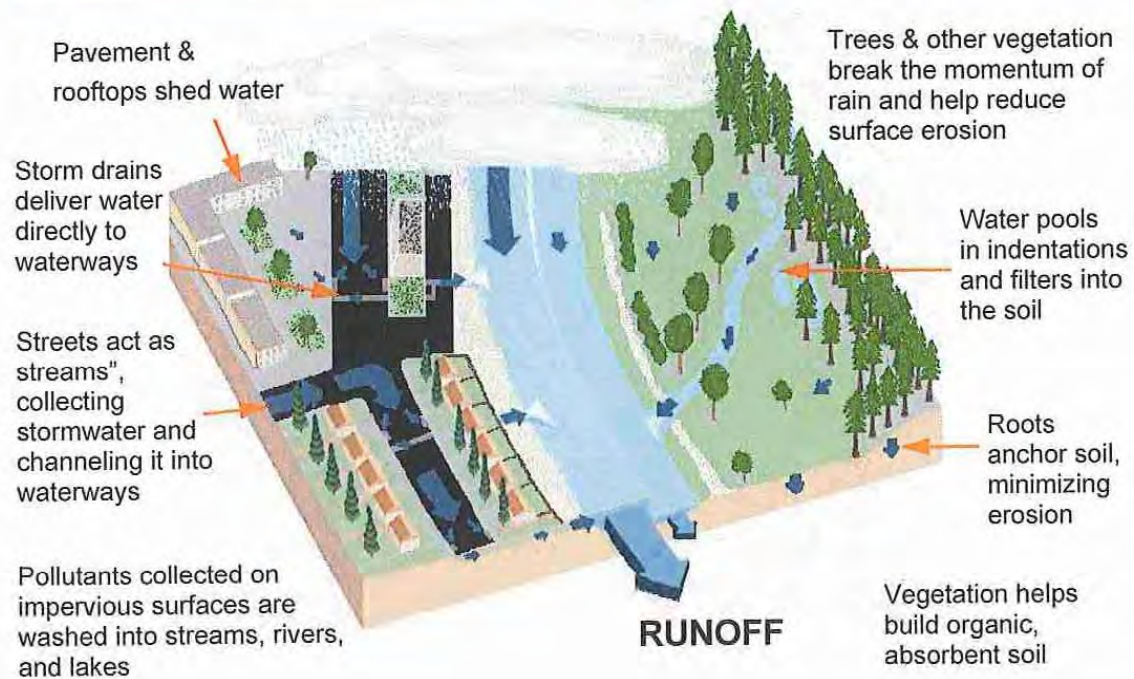
MORE WATER FASTER

DEVELOPED LANDS

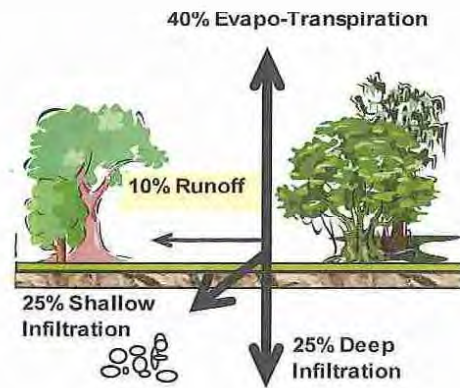
Rain pours more quickly off of city and suburban landscapes, which have high levels of impervious cover

NATURAL LANDS

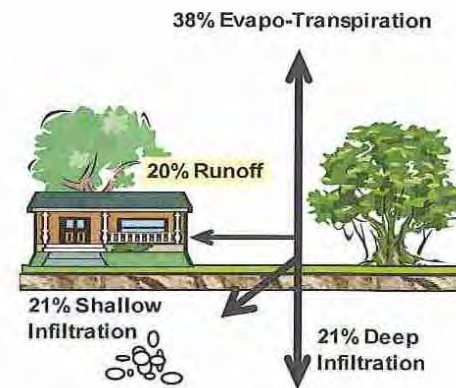
Trees, brush, and soil help soak up rain and slow runoff in undeveloped landscapes



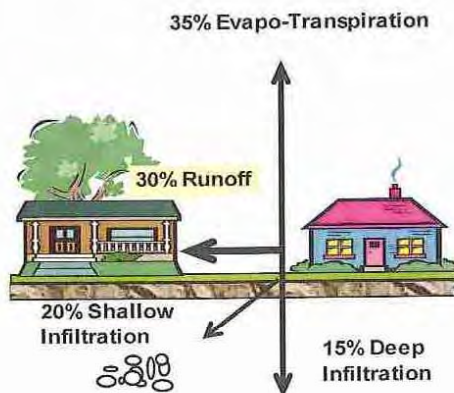
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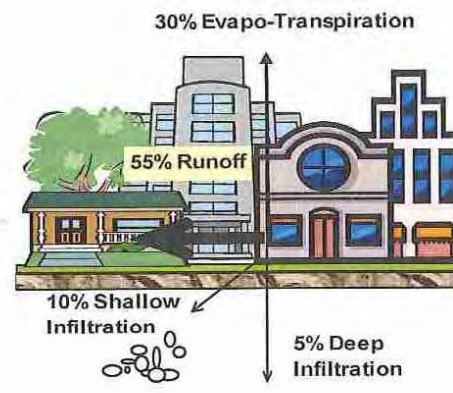
Natural Ground Cover



10-20% Impervious Surface



35-50% Impervious Surface



75-100% Impervious Surface

Effects of urbanization on stormwater runoff:

- Storm sewers designed to remove runoff efficiently from the landscape
- Increased impervious coverage
- Peaky flows into streams and receiving waters
- Increased erosion
- High nutrient levels in runoff
- Increased temperature of runoff affects downstream waterbodies

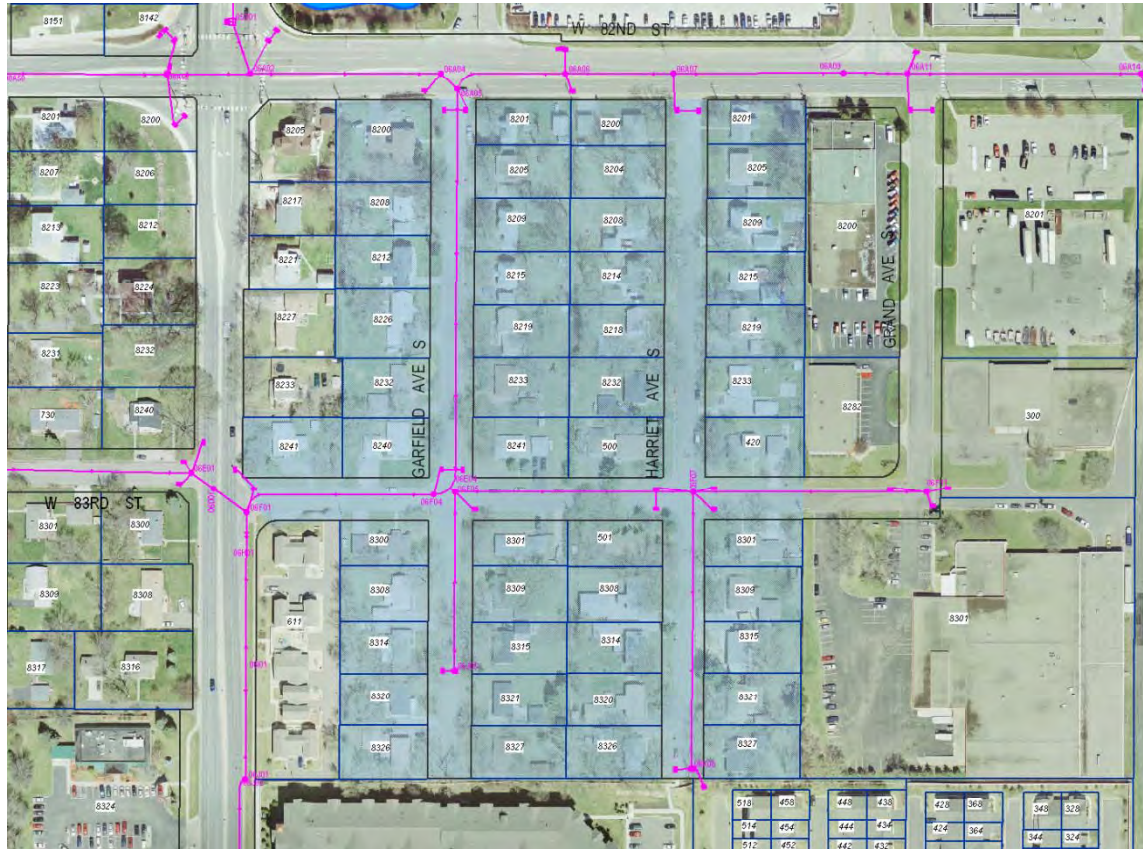
Locating rainwater gardens?

- Gentle sloping yard
- Good infiltrating soils - sandy
- No conflicts with underground utilities
- Rainwater runoff source
- Enthusiastic volunteers (your participation is required)

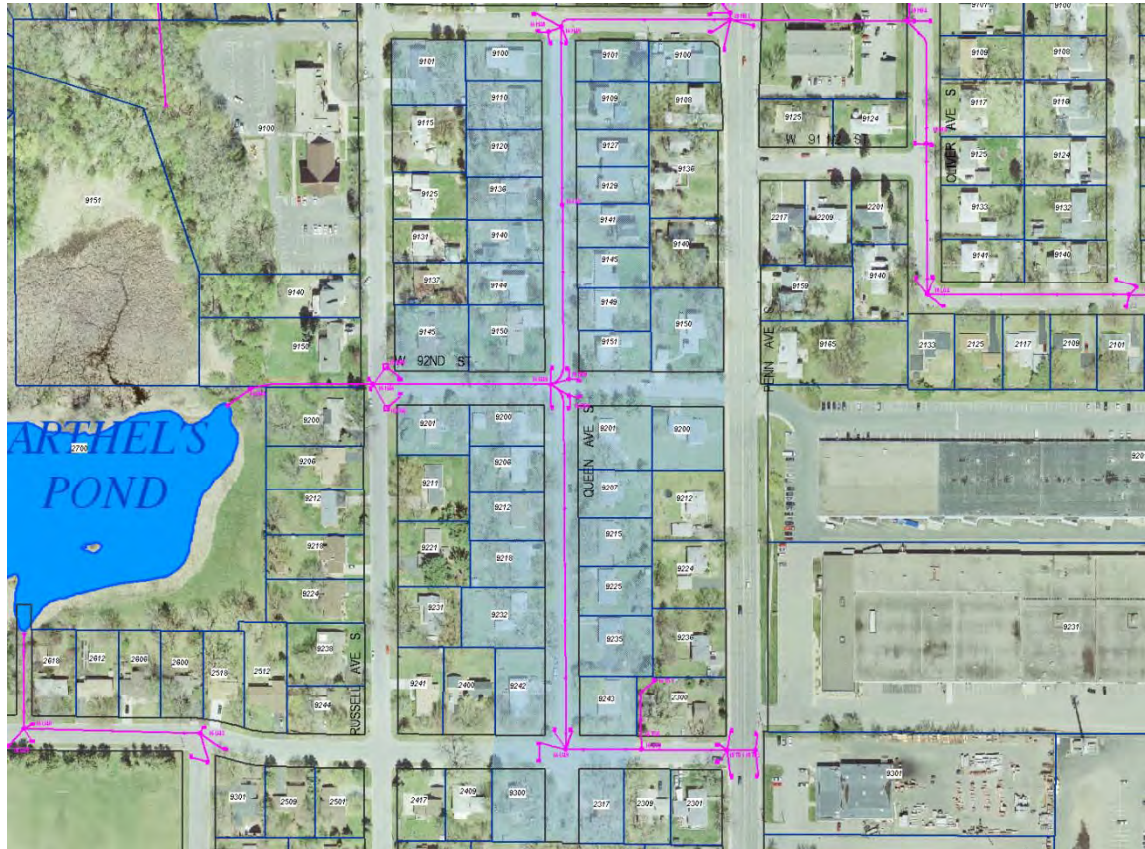


Bloomington, MN

2011 Rainwater Garden Program Neighborhoods



2011 Rainwater Garden Program Neighborhoods



W.91st, 92nd & 93rd St & Queen Ave. S.

What makes up a rainwater garden?

- Rainwater runoff source – curb inlet/sediment basin
- Depressional storage area – 6 to 12” below curb, sized to capture 1” of runoff, 200-300 square feet, gently sloping to turfgrass yard
- Planting soil mixture – clean compost and sand mix
- Plants (native and hearty)
 - Deep rooted grasses, switchgrass, reed grass
 - Wildflowers, blackeyed susan, cone flowers
 - Shrubs, winterberry, red twig dogwood
- Landscape edging to ease mowing, prevent weed intrusion

Rainwater garden maintenance:

- Pledge to maintain, minimum of five years
- Weeding: weekly to monthly during initial establishment; monthly to annually as the garden matures.
- Divide plants as they grow, 4-5 years
- Cut back dead plant material every spring, plants are good habitat for winter over birds
- Replenish wood mulch as it decomposes, yearly.
- Water during establishment period, if experiencing severe drought conditions
- Remove accumulated sediment, City will clean sediment trap structures

Recent Projects:

- 2009, Bloomington, Thomas Avenue from W. 106th Street to W. 108th Street, six rainwater gardens.



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Recent Projects:

- o 2010, Bloomington, Thomas, Upton, Vincent and Washburn Avenues, north of W. Old Shakopee Rd., twenty two rainwater gardens.



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What other Cities are building rainwater gardens as part of street construction projects?

- Maplewood, starting in 1997
- Burnsville, 2003
- Eagan
- Plymouth
- St. Paul
- Others?

What does a rainwater garden look like after a few years?



Burnsville, MN (2003)

What does a rainwater garden look like after a few years?



Burnsville, MN (2009)

Rainwater gardens in the news:

<http://www.startribune.com/local/south/63647942.html?elr=KArksUUUoDEy3LGDtO7aiU> Page 1 of 3

StarTribune.com



Nature shapes the course of storm drainage



David Joles, Star Tribune

Bloomington is planning to work with a block of homeowners to create rain gardens, such as this one in Burnsville, as a pilot project to test how well rain gardens might work as a substitute for traditional storm drains.

More cities are urging residents to use rain gardens to handle street runoff and keep pollutants out of lakes and streams.

By **MARY JANE SMETANKA**, Star Tribune

Last update: October 7, 2009 - 12:05 AM

Even now, with fall rushing toward winter, the

handsome gardens along Rushmore Drive in Burnsville draw the eye with their maroon sedums, purple asters and waving ornamental grasses.

All the gardens are near the curb, and all drop a foot or two below street level at their lowest point.

They're rain gardens.

Since they were planted in 2003, they've attracted national attention for their success in diverting storm water that would have gone directly into a local lake. About 90 percent of the water that flows off Rushmore Drive now filters into the ground instead, trapping debris and pollutants.

Bloomington is now trying to replicate some of that success with a street reconstruction project along two blocks of Thomas Avenue South that normally dump storm water into Nine Mile Creek. Curb cuts will direct storm water instead into six large rain gardens in private yards. Maplewood, Plymouth, Arden Hills, St. Paul Park and Stillwater have undertaken similar projects, and Lake Elmo is planning one next year.

The idea is not to handle all storm water through rain gardens — even streets with rain gardens have storm sewer grates to take in overflow — but to use them as another weapon in the arsenal to prevent water that carries fertilizer, oil from the street, grass clippings and debris from

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Star Tribune, 10/7/09

Rainwater Garden Education:

- City of Bloomington Website, search “rain gardens” for past projects, Briefing articles, etc.
- Blue Thumb Guide to Raingardens, available at bookstores, libraries, internet, ~\$17
- Blue Thumb Workshop, Monday, February 7, 2011, 6:30 p.m. to 8:30 p.m., REI 494 & Lyndale, Free, see handout or www.rei.com/stores/15 to register
- Nine Mile Creek Watershed District website under “Resources”, also source for cost share grant funds

FAQs:

Q: Will my rainwater garden become a mosquito breeding ground?

A: No, mosquitoes require 3 to 7 days to transition from the larva to flying insect stages and rainwater gardens should infiltrate in 24-48 hours.

Q: Will my rainwater garden plug up over time?

A: No, infiltration performance should increase as plant roots open up pores in the soil. Sediment should get caught in sediment trap, but remove any that may get by.

FAQs:

Q: How much will this cost? Am I going to be assessed?

A: The Rainwater Garden Program is being funded by the Bloomington Stormwater Utility Fund. Individual garden costs are estimated at \$3000-\$5000 depending on size and site limitations. No individual assessments for the rainwater garden costs. Bloomington Engineering anticipates up to \$25K from the Nine Mile Creek Watershed District in matching funds.

Q: What is required of me?

A: Labor and commitment, planting, weeding, watering and long-term garden care.

FAQs:

Q: Will the pollutants in the stormwater contaminate my plants and ground?

A: No, research has indicated that the typical fertilizers, oils, metals and other crud found in residential areas will be filtered out in the mulch, compost and other organic matter and will be biodegraded by microorganisms in the soil.

FAQs:

Q: What if I decide I don't want the rain garden any more? Can I fill the depression and resod?

A: You are under no permanent obligation to keep the rainwater garden. This is a completely voluntary program. We anticipate most residents will enjoy it and see it as an amenity. If a resident chooses to remove the rainwater garden, that will be the sole responsibility of the homeowner.

If you like gardening, this may be fun, if not, please consider that this may not be the program for you.

Questions?

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