



Watershed Protection Ordinance (WPO) Phase 2

Stakeholder Meeting:

Rain Gardens for Single-Family Residential Properties

April 4, 2014

Grover & Reese rain garden

Agenda

- Brief overview of what rain gardens are
- Rain Garden examples
- But I thought the City liked (and promoted!) rain gardens?
- Draft Proposal for Rain Gardens (RGs) for water quality credit on single-family residential properties
- Discussion
- Wrap-up/Next meetings

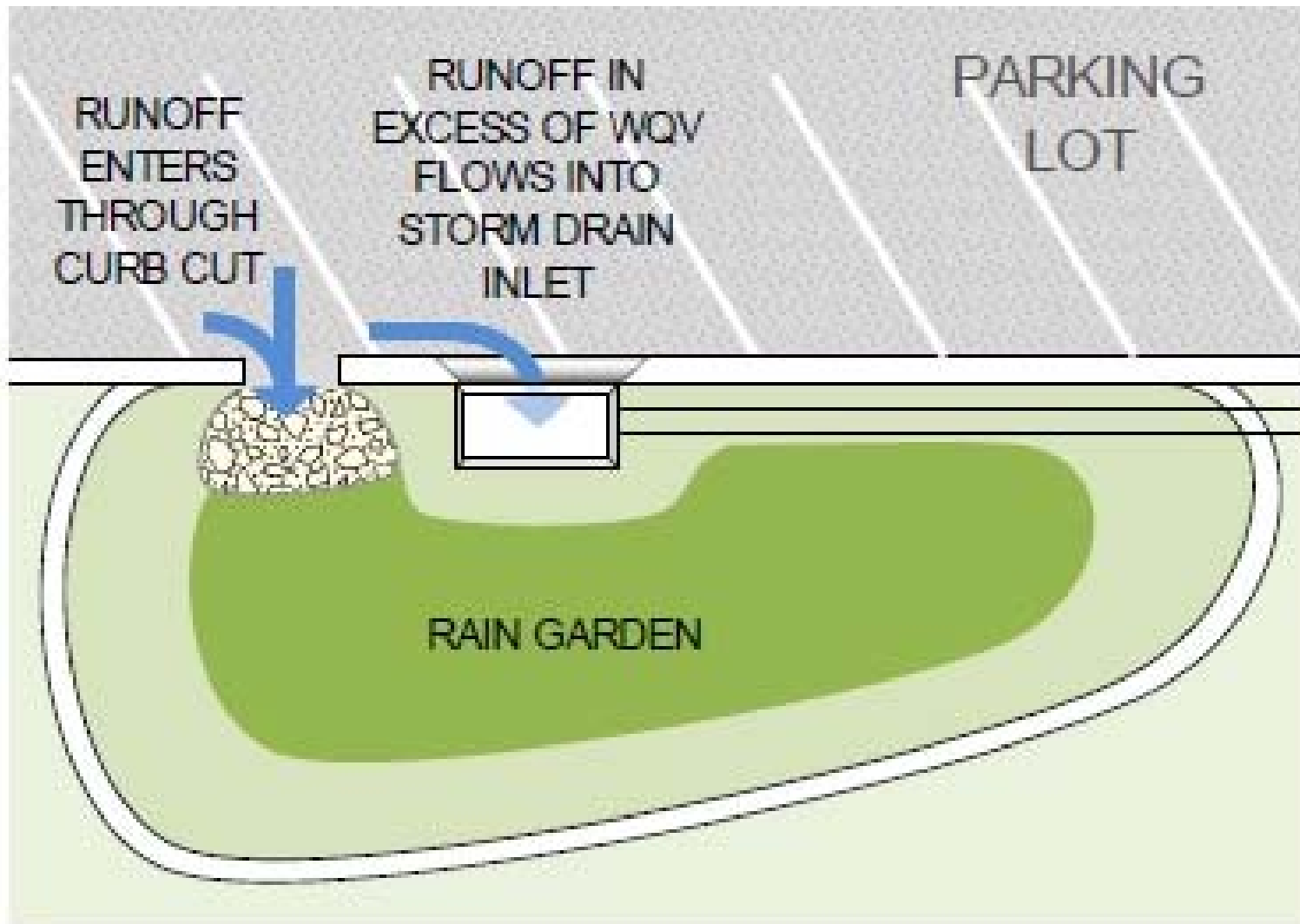
What is a Rain Garden?

- Vegetated, depressed landscape area designed to capture and infiltrate and/or filter stormwater runoff
- Has growing medium: native soil or biofiltration media
- Provides removal of pollutants in stormwater runoff similar to other treatment systems (e.g., sand filters)
- Have small drainage areas (2 acres max.) & shallow ponding depths (1 ft. max.)
 - Results in larger surface area than other controls
 - Infiltration, evapotranspiration, and biological uptake mechanisms may be more significant than other controls
- Three different types in Environmental Criteria Manual (ECM):
 - Full infiltration (no underdrain); **TODAY'S FOCUS**
 - Partial infiltration (filtration system with raised outlet or partial underdrain)
 - Filtration system with no infiltration



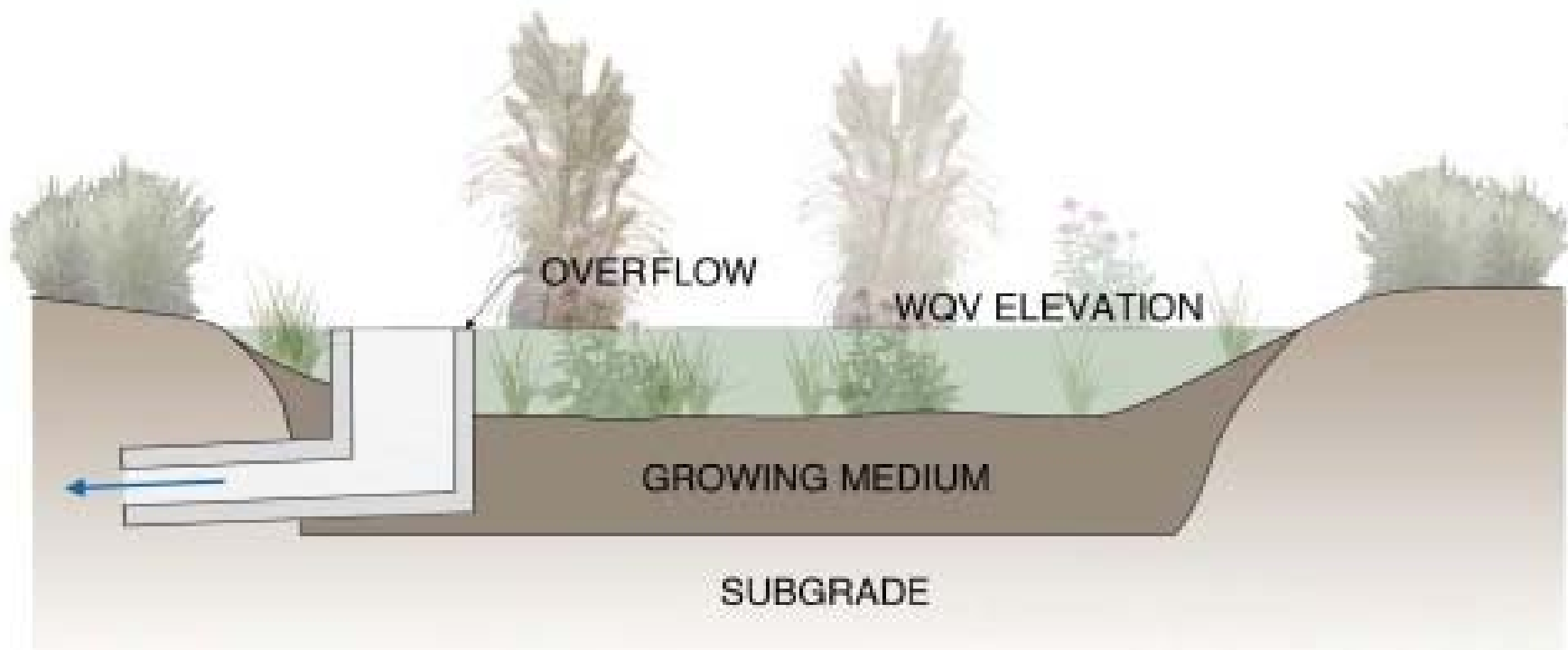
Multiple rain gardens may be dispersed across a development and incorporated into the landscape, providing aesthetic as well as ecological benefits.

(Source: ECM Figure 1.6.7.H-1)



**Example of the preferred offline system configuration for flow control.
(Source: Figure 1.6.7.H-7)**

Full Infiltration Rain Garden



Full infiltration rain gardens use the infiltration capacity of the site soils to reduce stormwater runoff volume and associated pollutants. (Source: Figure 1.6.7.H-3)



Shoal Creek: Burnet Rd. at Cullen Ln.



Shoal Creek: Burnet Rd. at Cullen Ln.



Shoal Creek: Burnet Rd. at Cullen Ln.



Shoal Creek: Madison & Woodrow



Shoal Creek: Reese & Grover



06/28/2012

Shoal Creek: Reese & Grover

But I thought the City liked (and promoted!) rain gardens?



grow green

earth-wise guide to
Rain Gardens
Keeping Water on the Land

what is a rain garden?
A rain garden is a shallow, vegetated depression designed to absorb and filter runoff from hard (impervious) surfaces like roofs, sidewalks, and driveways. Rain gardens are usually planted with colorful native plants and grasses. They not only provide an attractive addition to the yard, but also help to conserve water and protect our water quality.

how does a rain garden help?
As Austin becomes increasingly urbanized, native landscapes are replaced with impervious surfaces that prevent rainwater from soaking into the ground. Stormwater quickly runs off these hard surfaces, picking up pollutants from the land and carrying them to our creeks. This rapidly flowing water also increases the chances of flooding and erosion. The goal of a rain garden is to keep water on the land. Rain gardens, with their shallow depressions, capture stormwater and provide for natural infiltration into the soil. This provides water for the plants and helps maintain a constant flow of water in our streams.

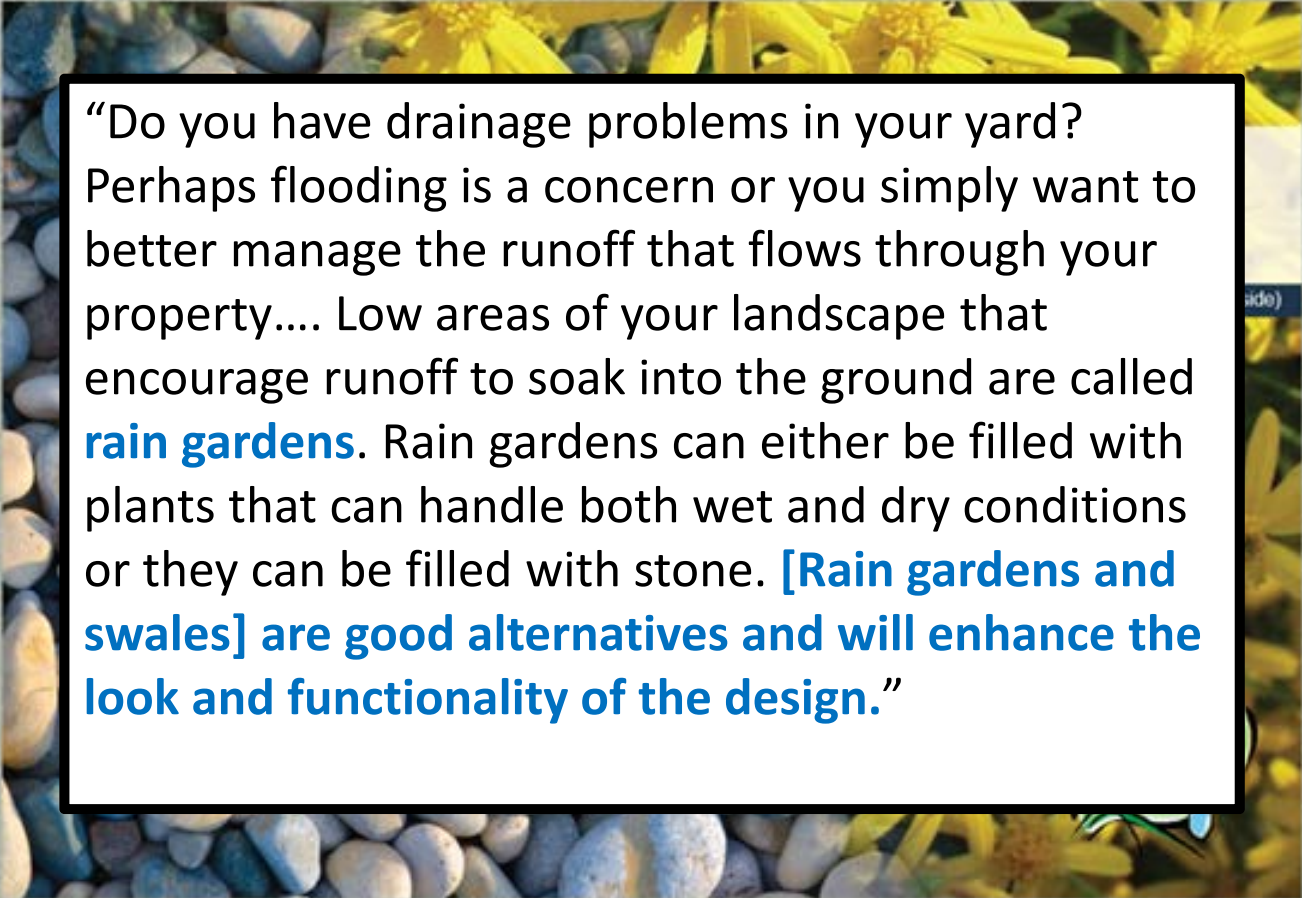
Create A Rain Garden in Six Steps

1 Find the Right Location

- Observe the flow of water from rooftops, driveways or other hard surfaces and place the rain garden where this water collects
- Select an area on gently sloping or flat land
- Calculate the slope of your lawn (instructions on next page). The slope should be less than 10%
- If possible, pick a spot in full to partial sun. Shady locations will still work, but the options for flowering plants are

Austin Parks and Recreation - 919 West 28th Street

But I thought the City liked (and promoted!) rain gardens?



“Do you have drainage problems in your yard? Perhaps flooding is a concern or you simply want to better manage the runoff that flows through your property.... Low areas of your landscape that encourage runoff to soak into the ground are called **rain gardens**. Rain gardens can either be filled with plants that can handle both wet and dry conditions or they can be filled with stone. **[Rain gardens and swales] are good alternatives and will enhance the look and functionality of the design.**”

But I thought the City liked (and promoted!) rain gardens?

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Resident

Business

Development

Government

Environment

Rain Garden Workshop

Back



RAIN GARDEN WORKSHOP

Saturday, April 5, 2014 - 9:00am - 12:00pm

Learn how to build a rain garden at your home, school, or community garden! A rain garden is a low area that absorbs and filters rain water runoff that comes from roofs, sidewalks, and driveways. Rain runs off the hard surfaces, collects in the shallow depression, and slowly soaks into the soil.

Rain gardens are planted with colorful native plants and grasses, and, where the water collected is free of contaminated run-off, food-producing plants can be used, as well! Join the City of Austin's Watershed Protection Department and the Sustainable Food Center for an interactive, outdoor, hands-on introduction to rain gardens at the J.P.'s Peace, Love and Happiness Foundation Teaching Garden at Sustainable Food Center.

Registration: \$35 at <http://sustainablefood.nonprofitssoapbox.com/calendar/event/241>

Learn more about rain gardens: www.austintexas.gov/raingardens, more gardening tips at www.growgreen.org

Date: Saturday, April 5, 2014

Time: 9:00 a.m. – noon

Location: Sustainable Food Center, 2921 E 17th St, Building C, Austin, TX 78702

Location Information

Sustainable Food Center
2921 E 17th St Building C
Austin, TX 78702
See map: [Google Maps](#)

<http://www.austintexas.gov/event/rain-garden-workshop>

Draft Proposal: Restrictions on Rain Gardens for Single-Family Residential

1. Must treat clusters of single-family residences (i.e., not individual lots)
 2. Must be located in the right of way, dedicated common area, or within a drainage easement that is accessible by standard maintenance equipment from the right of way
 3. Cannot be located in backyards or fenced in yards
 4. Not allowed in the Barton Spring Zone per the Edwards Aquifer Protection Program rules
 5. The City of Austin will provide functional maintenance. Homeowners may add additional native landscaping
- Note: Current ECM prohibits use of rain gardens for single-family residential water quality credit. The above proposal is for stakeholder discussion purposes only and has not yet been presented for Environmental Criteria Manual review.

Concerns about Rain Gardens on Individual Single-Family Properties

1. Larger number of ponds/workload to review, inspect & track (in design, construction & post construction)
2. More complex communication and coordination for inspections and enforcement with homeowners
3. No professional/consistently reliable maintenance (and some rain gardens may be removed entirely)
4. Inaccessibility to inspect (fencing, guard dogs, hostile or absent homeowners, etc.)
5. Difficulty to compel compliance in municipal court
6. City may be asked by owners in future to assume maintenance responsibility

Explanation of Draft Proposal

Treat clusters of single-family residences.

- Addresses proliferation of numbers of controls to a more manageable level
- Rain gardens still small compared to most subdivision ponds (e.g., four houses instead of twenty or fifty, etc.; rain gardens have a max. drainage area of 2 acres vs. up to 50 for a sand filter, etc.)
- Still gets the advantages of a rain garden (large pond-area-to-volume ratio due to shallow depth; increased retention and infiltration, aesthetic amenity, compatibility with home scale, etc.)

Explanation of Draft Proposal

Located in right-of-way, dedicated easement accessible from ROW, or dedicated common lot.

- Addresses concerns about inability to gain safe, adequate, efficient access for inspection and maintenance
- Formal location (ROW, easement, own lot) gives permanent status (as opposed to someone's yard and subject to being considered "optional" and subject to removal by the homeowner)

Explanation of Draft Proposal

City to assume maintenance responsibility. Can arrange for residents to provide more frequent mowing, landscaping, etc.

- Addresses concerns about having to coordinate with multitudinous individual owners, compel maintenance compliance, or have these revert back to the City under poor circumstances anyway (inaccessible, destroyed, etc.)
- Proposal stakes out middle position where residents have heavy maintenance assured by the City but understand that they can contribute themselves (since many will want more frequent attention, specialized plants, etc.)

Explanation of Draft Proposal

City to assume maintenance responsibility. Can arrange for residents to provide more frequent mowing, landscaping, etc.

(Discussion continued)

- Rain gardens need maintenance. They don't usually need heavy equipment (like bigger filter and wet ponds) but will not function properly unless they receive modest attention on a routine basis to clear blocked inflow structures, remove trash, etc.

WPO Phase 2 Schedule, 2014

Phase 2 Kickoff	Jan. 22
Perviousness: Introduction	Feb. 21
Perviousness: Porous Pavement (part 1)	Mar.07
Porous Pavement (part 2), Artificial Turf & Rainwater Harvesting	Mar.21
<ul style="list-style-type: none">• Porous pavement: conclusion• Rainwater harvesting options (conservation storage, green roofs, etc.)	
Rain Gardens for Single-Family Residential	Apr. 04
Beneficial Use of Stormwater: Potential Policy Approaches	
Introduction/National Examples	Apr. 18
Conclusion	May 02
Next Steps	TBD

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<http://austintexas.gov/departments/watershed-protection-ordinance>