



# Watershed Protection Ordinance (WPO)

## Stakeholder Meeting:

### Phase 2

# Green Stormwater Infrastructure

January 22, 2014



# Meeting Objectives

- **Review staff progress to add new/improved options for Green Stormwater Infrastructure (GSI)\***
- **Identify stakeholder interest in further discussions of each option**

**\* Following up WPO GSI meetings on May 17 & 31, 2013**

# Potential Improvements

- 1. Best use of storm runoff volume**  
(e.g., conservation & infiltration)
- 2. Rain gardens for single-family residential**
- 3. Alternatives for SOS compliance**
- 4. Rainwater harvesting for conservation & water quality**
- 5. Rainwater harvesting + green roof irrigation**  
(also flood detention credit)
- 6. Porous pavement for non-pedestrian surfaces**

# Potential Improvements

7. **Flood detention credit** for water quality controls
8. **Rainwater Harvesting Systems & Impervious Cover Determination**
9. **Artificial Turf & Impervious Cover Determination (New)**
10. **Volumetric flood detention** (Drainage Criteria Manual)
11. **Skinny Streets** (Transportation Criteria Manual)

# Best Use of Storm Runoff Volume

(e.g., Conservation & Infiltration)

- *Major Imagine Austin Comprehensive Plan goal:*
  - Green Infrastructure
  - Sustainable water resources
  - Environmental protection
- Treat water as valued resource
- Use on-site: Conservation & Infiltration
- Maryland model: infiltrate portion of WQ volume
- Others?
- Discuss with stakeholders

# Rain Gardens for Single-Family Residential

Staff proposal:

- **Allowed:**
  - Treat clusters of single-family residences
  - Located in Right-of-Way (ROW), dedicated easement accessible from ROW, or dedicated common lot
  - City to assume maintenance responsibility. Can arrange for residents to provide more frequent mowing, landscaping, etc.
- **Not allowed:**
  - Individual lot treatment systems [with isolated exceptions]
  - Any system enclosed in private fence
  - In a backyard
- Focus: performance → inspectability → access
- Note: is current policy; need update to ECM to formalize

# Additional Options for SOS Compliance

➤ *Widespread interest in alternatives to retention-irrigation systems*

Staff proposal:

- Re-write ECM 1.6.9 (SOS WQ controls) to provide avenue for alternative compliance
- Develop stormwater control calculator tool to support
- Treatment train allowed as alternative to retention-irrigation (e.g., sand filter + infiltration field)

# Rainwater Harvesting for Water Quality and Conservation

Staff proposal:

- Develop criteria and spreadsheet calculator to show how to demonstrate “equivalency” of rainwater systems with standard water quality controls
  - Flexibility to release water from tanks longer than allowed under existing criteria (5 days)
- Explain additional options in ECM, e.g., installation of second, separate tank for water conservation.

# Rainwater Harvesting + Green Roof Irrigation

➤ *Options to use green roofs for stormwater control exist now but are not widely known, lack criteria*

Staff proposal:

- Add ECM option to treat water with rainwater harvesting (storage) & green roof (irrigation). Show:
  - Storage of WQ volume;
  - Demonstrate application rate and drawdown time;
  - Demonstrate infiltration rate of green roof;
  - Consider other factors such as ET, flow-back to tank, etc. to show how water moves through and out of the system.
- Add DCM option for rooftop detention

# Porous Pavement for Non-pedestrian Surfaces

- *Water quality credits given for sidewalks and other pedestrian surfaces, but not larger areas such as parking lots and driveways.*

Staff proposal:

- Expand ECM criteria to allow WQ credit for porous pavement for non-pedestrian surfaces
- Expected date: Summer or Fall 2014
- Limited to privately maintained facilities (e.g., parking lots and drives and not public roads?)
- Cannot propose over karst/recharge zone

# Flood Detention Credit for Water Quality Controls

- *Water quality controls assist with flood mitigation but need a way to standardize credit during design and permitting.*

Staff proposal:

- Staff developing a “quick sheet” calculator tool in spring 2014
- Credit based on standard SCS Unit Hydrograph methodology

# Rainwater Harvesting Systems & Impervious Cover Determination

- *Are rainwater harvesting systems given impervious cover credits for tank and/or catchment areas?*

Staff proposal:

- WPO/code clarifies that water quality controls do not count against impervious cover limits. So rainwater tank footprints are counted as pervious
- Staff does not support counting the catchment area as pervious

# Artificial Turf & Impervious Cover Determination

➤ *Can artificial turf systems be counted as pervious cover? If so, under what conditions?*

Staff interpretation:

- In considering artificial turf and other proposals to count impervious cover as pervious cover, the applicant has to show:
  - No increase in pollutant loads;
  - Same volume, peak flow, timing, and initial abstraction as undeveloped conditions; and
  - There must be connectivity to soils/groundwater

# Volumetric Flood Detention

- *Volumetric flood detention represents an alternate approach (from peak-matching requirements) to mitigate flood impacts from development. It is not yet included in the Drainage Criteria Manual (DCM).*

## Status:

- Working on draft criteria now with consultant (Freese & Nichols)
- Stakeholder meeting anticipated in Fall 2014

# Skinny Streets

- *Skinny Streets have a narrower road profile and reduced impervious cover footprint, which can mitigate stormwater impacts as compared to wider, conventional streets.*

## Status:

- Skinny Streets are being considered as part of larger changes considered in ongoing efforts to revise the Transportation Criteria Manual (TCM)

# Contact Information

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