Agenda / Meeting Objectives

- Review Green Stormwater Infrastructure topics
- Review why perviousness matters
- Discuss the need to improve pervious function on highly developed sites
- Discuss relationship to Imagine Austin/Code Next
  - WPO Phase 2: Remove roadblocks (tweaks), ID next steps
  - Code Next: Implement Imagine Austin (big picture)
- Review a possible system to define perviousness
- Discuss artificial turf, porous pavement & rainwater harvesting

Phase 2 Green Stormwater Infrastructure Topics		Perviousness Meetings	Beneficial Use Meetings	Code/ Criteria/ Tools
1.	Beneficial use of stormwater volume		■	Code?
2.	Rain gardens for single-family residential		■	ECM
3.	Alternatives for SOS compliance			ECM
4.	Rainwater harvesting for conservation & water quality		■	ECM & Excel
5.	Rainwater harvesting + green roof irrigation (WQ & detention)		■	ECM & DCM
6.	Porous pavement for non-pedestrian surfaces	■		ECM

Phase 2 Green Stormwater Infrastructure Topics		Perviousness Meetings	Beneficial Use Meetings	Code/ Criteria/ Tools
7.	Flood detention credit for water quality controls			Excel
8.	Rainwater Harvesting Systems & Impervious Cover Determination	■		Code?
9.	Artificial Turf & Impervious Cover Determination	■		ECM
10.	Volumetric flood detention			DCM
11.	Skinny Streets			TCM
12.	Release of Rainwater Harvesting Overflow	■		ECM

Why Perviousness Matters

- Degree of imperviousness (and thus perviousness by extension) is the driver for health and safety issues relating to flood, erosion & water quality
- Increased imperviousness/urbanization drives:
  - Increased runoff volume
  - Increased peak discharge
  - Diminished baseflow
  - Stream channel enlargement
  - Decline in stream habitat quality
  - Increased stream temperature
  - And the list goes on (see Schueler, 2003, and many other sources)
- Importance of natural pervious function underrated, needs our attention

Our Current Trajectory

In the last 30 years, Austin and the US have tried to counter the environmental impacts of urban growth & imperviousness

- Principle strategies include: Impervious cover limits, structural controls, stream buffers, etc.

Austin's population and urban footprint growing rapidly

- Imagine Austin: planning for high-density centers & corridors to help accommodate the growth
- Looking for tools to help counter the impacts of higher density & imperviousness: Beneficial on-site solutions

Defining Perviousness: Option for Discussion

A non-natural, permanent ground covering [artificial turf, porous pavement, etc.] shall be considered as impervious cover unless it meets the following criteria:

1. Effluent concentrations discharged from the system (to both groundwater and surface water) must be equal to or lower than Baseline Pollutant Concentrations for Undeveloped sites as prescribed in Table 1-10, ECM 1.6.9.3 B;
2. Runoff from the system must equal the runoff from undeveloped conditions in volume, peak flow rate, flow duration and time of concentration;

Defining Perviousness: Option for Discussion, continued

3. The system must match the volume and rate of infiltration of the existing/undisturbed soil; and
4. The system shall not have an impermeable liner between natural ground and the boundary layer of the system, inclusive of underdrain layers.
5. Other? Possibilities include support of plant growth and maintenance of an undisturbed soil profile.

Subtopics

- **Artificial Turf**
- **Porous Pavement**
- **Rainwater Harvesting**

Artificial Turf & Impervious Cover Determination

➢ *Can artificial turf systems be counted as <u>pervious</u> cover? If so, under what conditions?*

Current code: Artificial turf = impervious

Staff discussion:

- In considering artificial turf or other proposals to count impervious cover as pervious cover, the applicant has to show that pervious functions are retained.
- See next slide for possible option to define perviousness.

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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

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
- Staff considering whether to count tanks for conservation as pervious (as an incentive, etc.)

Rainwater Harvesting Systems & Discharge to Waterways

- *Can rainwater harvesting systems be allowed to draw down volume directly to receiving waters?**

Staff response: Discuss

- Currently require treatment of overflow in vegetation and soils.
- We do not distinguish between roof and surface runoff (mixing, etc.)
- Is also a volume issue (channel-forming flows, etc.)
- Can use a (likely small) rain garden to handle

* To make space available for volume from next storm within prescribed period of time (5 days or fewer, depending on design).

WPO Phase 2 Schedule, 2014

Phase 2 Kickoff	Jan. 22
Perviousness	Feb. 21
Perviousness, con't	Mar. 7
Beneficial Use of Stormwater	Mar. 21
Beneficial Use of Stormwater, con't	Apr. 4
Wrap-Up	TBD

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Barton Creek at Campbell's Hole

Fort Branch Creek at Manor Road