

Watershed Protection Ordinance (WPO): Stakeholder Meeting

Structural Stormwater Controls Part 2

February 17, 2012



Meeting Objective

Discuss potential options to address issues with structural stormwater controls identified by stakeholders and staff.

Meeting Agenda

- **Introductions [5 min.]**
- **Staff Presentation [30 min.]**
 - **Summary of Stakeholder Feedback**
 - **Wet Ponds**
 - **Non-Degradation Controls (Barton Springs Zone)**
 - **Subsurface Ponds**
 - **Trigger for Water Quality Controls**
- **Small-Group Breakout Sessions [65 min.]**
 - **Discuss advantages and disadvantages of proposed policy options**
- **Full Group Wrap-Up [20 min.]**
 - **Summary of discussion**

Summary of Stakeholder Feedback

- **Use more innovative approaches**
 - Mimic predevelopment hydrology
 - Smaller, distributed controls
 - Operation & maintenance need further study
- **Facilitate innovation and flexibility**
 - Eliminate barriers to implementation
 - Reduce permitting obstacles
 - Provide tools/methodology for easier review
- **Allow additional/improved options**
 - Rainwater harvesting, porous pavement
 - Stacking of flood and water quality



Wet Ponds



Wet Ponds: Advantages

- **Can be community/aesthetic amenity**
- **Only control option serving > 50 acres**
- **Aquatic habitat/wetland mitigation**
- **Can “stack” flood control function on top of water quality function**
- **Cost effective retrofit for existing, untreated development**

Wet Ponds: Disadvantages

- Makeup water / water conservation issues
- Liner problems (leaks, shrink/swell, karst)
- High maintenance costs
 - Difficult access (e.g., submerged trash)
 - Specialized work, complexity
 - High sediment removal costs
 - High vegetation management needs
- High dam inspection & maintenance
- Bedload transport interruption & biological damage
- Public safety concerns (e.g., swimming, fishing)
- Headwaters hydrology not controlled, upstream creeks not protected

Wet Ponds: Disadvantages

Makeup water/water conservation issues



Wet Ponds: Disadvantages

Liner problems (leaks, shrink/swell, karst)



Wet Ponds: Disadvantages

Liner problems (leaks, shrink/swell, karst)



Wet Ponds: Disadvantages

High maintenance costs (specialized, complex)



Wet Ponds: Disadvantages

High maintenance costs (vegetation)



Wet Ponds: Other Disadvantages

- **Bedload transport interruption & biological damage**
- **Public safety concerns (e.g., swimming, fishing)**
- **High dam inspection & maintenance**
- **Headwaters hydrology not controlled: upstream creeks not protected**



Wet Ponds: Policy Options

- **Change minimum drainage area to 64 acres**
 - **Would always be located within Critical Water Quality Zone and thus require a variance**
 - **Land use commission vs. administrative**
- **Disallow wet ponds over the recharge zone**
- **Require money for future maintenance**

Non-Degradation Controls (BSZ): Maintenance/reliability concerns

1. Retention-Irrigation Systems

- Pump malfunctions**
- Irrigation spray head blockage & breakage**
- Prefer a more passive design (e.g., gravity, not pumped)**

2. Vegetative Filter Strips (VFS)

- SOS-sizing requirements pose special challenges**
- Difficult to construct properly: level spreader, vegetated area**
- Tend to erode and concentrate flows over time**
- Better if flows controlled prior to entry into VFS**

Non-Degradation Controls (BSZ): Retention-Irrigation Systems



Non-Degradation Controls (BSZ): Retention-Irrigation Systems



Non-Degradation Controls (BSZ): Vegetative Filter Strips



Non-Degradation Controls (BSZ): Vegetative Filter Strips



Non-Degradation Controls (BSZ): Policy Options

- **Alternatives to retention-irrigation & vegetative filter strips:**
 - **Small-scale, distributed infiltration practices, e.g., rain gardens**
 - **Modified vegetative filter strips with up-front retention**
 - **Other?**

Subsurface Ponds

"Out of sight, out of mind"



Subsurface Ponds

"Out of sight, out of mind"



Subsurface Ponds

Specialized inspection (confined space entry)



Subsurface Ponds

Maintenance difficult/requires special equipment



Subsurface Ponds: Policy Options

- **Develop design criteria**
 - e.g., standards for access, dimensions
- **Educate design community of alternatives**
 - Small footprint innovative controls
- **Inspection options**
 - Require third-party inspections
 - City charges an annual fee and inspects as part of the operating permit program

Trigger for Water Quality Controls

- **Current Code requires water quality controls for sites with more than 20% impervious cover**
 - All development triggers controls within the Barton Springs Zone
 - 5,000 ft² trigger within Urban watersheds

REVISIONS/CORRECTIONS

No.	Description	Revise (R) Add (A) Void (V) Sheet No.'s	Total # Sheets in Plan Set	Net Change Imp. Cover (sq. ft.)	Total Site Imp. Cover (sq. ft.)/ [%]
1	REDUCED IMP. CVR. TO ELIMINATE W. Q. POND	R) A1.1, C2.3, 2.4, 3.0, 3.1, 3.2, 4.3 4.4, 5.1, 5.2, 5.3 5A (V) C4.5	35	-4.36%	19.95%

Trigger for Water Quality Controls



25 acres of IC
19.3% of Total Site
No WQ Controls Required

Trigger for Water Quality Controls: Policy Options

- **Require controls for 5,000 ft² impervious cover (instead of 20%)**
 - **Current standard for Urban watersheds**
 - **Multiple “innovative control” options helpful for these sites (e.g., vegetative filter strip)**



Breakout Groups

- **Discuss advantages and disadvantages of proposed policy options for:**
 - **Wet Ponds**
 - **Subsurface Ponds**
 - **Non-Degradation Controls**
 - **Trigger for Water Quality Controls**

Adoption Schedule

Stakeholder Meetings

Sep 2011 – April 2012

(Meetings approx. every two weeks)

- | | |
|--|-----------------------|
| 1. Creek Protection | Sep 9, 23, Oct 7 |
| 2. Floodplain Protection | Oct 21, Nov 18, Dec 2 |
| 3. Development Patterns & Greenways | Dec 16, Jan 6, 20 |
| 4. Improved Stormwater Controls | Feb 3, 17, Mar 2 |
| 5. Mitigation Options (DDZ) +
Rule Simplification & Flexibility | Mar/Apr |
| 6. Staff develops Draft Ordinance | Apr/Jun |
| 7. Stakeholder Feedback on Draft Ordinance | Jul/Aug |

Boards & Commissions

Sep – Oct 2012

City Council

Nov/Dec 2012

Travis County Commissioner's Court

Winter 2012/13

Contact Information

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**[www.austintexas.gov/page/
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