



Storm Water Commission
6801 Delmar Boulevard, University City, Missouri 63130,
Phone: (314) 505-8560, Fax: (314) 862-0694

**MINUTES OF THE STORMWATER COMMISSION – AD-HOC SUB-COMMITTEE
TO REVIEW UNIVERSITY CITY MUNICIPAL CODE REVISIONS PROPOSED BY THE UNIVERSITY
HEIGHTS FLOOD TASK FORCE
November 30, 2023**

Call to Order. The subcommittee listed above was called to order at 5:40 PM by Eric Karch.

1. **Attendance-Roll Call.** The following Commission members were present at Blueberry Hill: Susan Armstrong, Garry Aronberg, Eric Karch. This was a non-quorum meeting, as allowed by our bylaws.

Agenda. To discuss revisions to the proposed code language, and specifically the matrix of eight (8) proposed mitigation practices presented by the University Heights Association Flood Task Force (version dated 11/10/2023 Impervious Surfaces Draft Bill). This meeting is being held in response to an action item from the 11/14 Ad-Hoc Subcommittee meeting.

2. Business

- Checked back in on the U Heights goals. Goals discussed included:
 - Improve U City code which does not currently regulate new impervious area less than 1 acre. Improvement should be as close as you can get to zero increase in stormwater runoff. Try to catch all raindrops from new impervious area, but not at the expense of perfection. Improvement is more important.
 - Include a table of acceptable stormwater offsets to new impervious area that can be understood and installed by a homeowner or craftsman (no engineer required). The table currently includes 8 offset methods and was developed by Susan Armstrong.
 - Recognition that in some cases a property may already be so developed that it does not have enough space for both proposed new impervious cover and the associated stormwater offsets. This creates the potential to prevent some proposed impervious cover projects.
- Section 415.510 – Site Grading, Erosion Control, and Stormwater Consideration in Site Design
 - Matrix was discussed.
 - Threshold at which the proposed ordinance would apply.
 - Agree that this is for projects < 1 acre, since projects > 1 acre fall under MSD.
 - Currently discussing 100 SF as lower threshold.
 - City (M. Celaj) indicated that 200 SF might be better since it would address reasonably-sized projects while minimizing burden on City staff.
 - Consensus was that we will continue to work on the matrix assuming an interval of 100 SF, since it can be easily scaled to a threshold of 200 SF (or higher) at a later date, if needed.
 - Discussed that developer could be given the option to use MSD guidelines for projects < 1 acre.
 - Item #1 – plant native plants, such as grass and herbaceous vegetation
 - Discussed that an offset of 5:1 would not meet the goal of fully mitigating the impervious area. Aronberg will work on an improved offset that accounts for the change in runoff coefficient between native plants and impervious area.
 - Item #2 – Direct new impervious surface runoff to permeable areas on the property
 - Discussed scratching this item and replacing it with Amended Soil. For example, a new 15-foot wide sidewalk requires a new 15-foot wide area of soil



that is amended with compost. Discussed that this concept is typically applied by adding new amended soil parallel to the new impervious area and that the improvements are typically designed to shed water perpendicularly to the new sidewalk. For example, a new 50-foot long sidewalk would need to discharge rainwater runoff evenly along its entire length and not concentrate flow onto a smaller section of amended soil. Otherwise, a small area of amended soil would become overwhelmed and could fail. In addition, it may not be reasonable to successfully design a 100-foot wide amended soil area for a 100-foot wide area of new impervious area. Karch will work to provide a definition of Amended Soil and suggested limits.

- Item 3 – Install tree cover
 - Discussed that the Arbor Day calculations are for a full year of rainfall. However, the U Heights goals require looking at an individual storm event. Aronberg will work on an improved offset that accounts for the change in runoff coefficient between trees and impervious area.
- Item 4 – Install permeable pavement
 - Armstrong clarified that the offset, as presented, is that if the developer is adding 100 SF of new permeable pavement, there remains a deficit of 50 SF of offset remaining. Armstrong will work to update the offset to clarify this.
- Item 5 – Build green roofs
 - Armstrong clarified that the offset, as presented, is that 100 SF of new impervious area requires 20 SF of new green roof.
 - Discussed that the evaporation information is good information, and is true. However, similar to the tree cover discussion, evaporation does not meet the U Heights goal to address runoff from an individual storm event. Therefore, it is best to eliminate language about evaporation from the matrix.
- Item 6 – Rain Barrel
 - Discussed that the rain barrels must be emptied between rain events for the U Heights goals to be met. Armstrong will work to update the offset to clarify this.
- Items 7 & 8
 - Discussed that volume-based offsets are really the pertinent measure. Also, because the ground on which a basin will be installed is often sloped, slope must be accounted for in determining the effective area of the basin. However, to keep the offset simple and area-based, the best path forward is to provide two different offset areas in the matrix. For example:
 - If new basin will be 6-inches deep, basin area must be at least # SF
 - If new basin will be 18-inches deep, basin area must be at least # SF
 - The only area eligible for measurement is at or below the basin's control elevation.
 - Discussed that the basin must be able to dry up between rain events, and that the proposed design must include a means to self-drain. For example, a perforated underdrain would be acceptable.
- Swap – discussed that the concept of a swap should be included in the ordinance. For example, the project involves widening a driveway. Rainwater runoff from the widened driveway would drain right out to the street, and there is no reasonable way to redirect



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the runoff to a new rain garden because the yard along the widened driveway is also too steep for a rain garden. However, there is room for a new rain garden on the other side of the house and the developer could redirect the gutters from the roof into the rain garden. The roof area draining to the new rain garden is larger than the proposed driveway widening project. Since the rooftop does not currently drain into a rain garden, this area could serve as a swap to still meet the goals.

- Pre-existing matrix items
 - Discussed the idea that a progressive homeowner took it upon themselves to install a pervious driveway. After the ordinance is implemented, that homeowner decided to install a new sidewalk. It would be reasonable for that homeowner to get credit for the pervious driveway that they already installed to help offset the new sidewalk.
 - Discussed that the ordinance could include language that the City will consider allowing credit for pre-existing matrix items on a case-by-case basis.

3. Adjournment. Adjourned at 7:00 PM.

Minutes Preparation. The minutes were prepared by Eric Karch.

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