



MEMORANDUM

TO: Environmental Commission

FROM: City of Ann Arbor Systems Planning Staff

DATE: April 22, 2024

SUBJECT: Responses to Environmental Commission questions following the 3/28/24 presentation regarding the proposed Public Street Stormwater Management Guidelines

During the Environmental Commission meeting on March 28, 2024, Jen Lawson, Water Quality Manager for the City of Ann Arbor (City), and Jerry Hancock, Stormwater and Floodplain Programs Coordinator for the City of Ann Arbor, presented on Stormwater Management Guidelines for Public Street Construction and Reconstruction (formerly the Green Streets Policy). The following are the questions generated by the Environmental Commission following the presentation, and answers provided by Systems Planning staff:

- **General advice: What stormwater concerns should be on the watch list for the next 10 -20 years, on right of way areas, and non-right of way areas?**

City staff continue to look for opportunities to manage run off in the public right of way on both a site-specific small scale, and larger scale regional projects. It is anticipated that the City's comprehensive stormwater management plan will make recommendations to accompany this endeavor.

- **What changes are anticipated for floodway and flood fringe areas over time?**

If storm intensity continues to increase, as predicted, it is likely that floodplains would increase in size.

- **Will floodway and flood fringe areas likely change in response to changes in runoff from hardscape areas?**

If the percent of impervious area in the city increases, it is possible that floodplains could have small increases in size. However, if the City/county stormwater regulations are implemented on redevelopment sites we could see flood improvements, particularly in smaller storm events (see next answer).

- **What is the anticipated effect of mitigation actions on floodway and flood fringe areas?**

Stormwater management efforts are expected to have more effect on smaller flooding events than larger events. Within the City Calibrated Stormwater Model (SWMM) there is a "Future Scenario" - If all single family homes had a rain garden, all private and U of M property were redeveloped to meet current local stormwater standards, and all streets were reconstructed to meet the green streets policy we would see: Major water quality improvements; Significant reduction of flooding for small events; Most flooding eliminated up to the 10%-annual-chance; However, there would still be a 1%-annual-chance floodplain similar to the current floodplain, particularly in Allen Creek, and only a slightly smaller floodplain in other watersheds. So, from a floodplain management standpoint it is more effective to focus on preventing new structures, elevating or floodproofing existing structures, and removing structures from the floodplain.



- **What geographic regions of Ann Arbor that remain of concern?**

Areas within the floodplain, both identified on Federal Emergency Management Agency (FEMA) maps and known areas of system surcharge based on stormwater modeling, are a key focus of capital improvement projects for stormwater management.

- **Observation: Slide 4 of the 3/28/24 presentation indicated that public right of way comprises 25.9% of the surface area of Ann Arbor. Using that information, one can calculate that 11.9 sq mi (40%) of Ann Arbor's 28.97 square miles is hardscape. As more development proceeds and increases impervious areas, what is the likelihood that 1% stormwater events will be managed adequately overall?**

Redevelopment in the City is desired, as it increases the amount of stormwater runoff that is managed, either through infiltration or detention. The stormwater system will still be overwhelmed in a 1% chance (100-year/5.1 inches) storm event, because the system design standard is a 10% chance (10-year/3.26) storm event. However, larger regional storage facilities, both above ground and below ground will build resilience within the stormwater system.

- **What is the plan (timing) for updating flood maps?**

The City is still working on updating the flood maps to represent the changes due to the Allen Creek Railroad Berm Opening Project. FEMA required the City to update the entire Allen Creek floodplain, not just the lower reach affected by the project. Flood depths near the new culverts will drop by ~6 feet. Throughout the rest of the floodplain, flood depth will drop by a few inches due to the City's far more accurate calibrated SWMM Model. A Letter of Map Revision (LOMR) application will be submitted to FEMA for all of Allen Creek before the end of April. For the remainder of the City's floodplains, typically FEMA takes the lead on updating Flood Insurance Rate Maps. It has been 12 years since our last update, and a 20-year gap prior to that. So, FEMA probably won't be updating our maps for a while. However, Project #29 in the 2022 Hazard Mitigation Plan identifies the following city activity for 2027 - The SWMM model shows three areas that indicate flooding beyond FEMA's model. As a result, the city is currently working with FEMA to do a LOMR for the Allen Creek area. The two other areas are on Malletts Creek. Alternatives will be explored for future modeling of the Malletts Creek area, such as the approach being taken for the Allen Creek area.

- **Of future street rehabilitation, what proportion or length of streets and easements will include deep revisions that could include geothermal pipelines, and install other underground services?**

Unknown at this time

- **Sending applause for plans to install underground utility structures that will limit above ground utility management!**

Many thanks and appreciation!

- **Looking forward to dashboard information on management of stormwater.**

Once the dashboards go live, staff will be sure to update the Environmental Commission with data.