

MEMORANDUM

To: MCWD Board of Managers
From: Tiffany Schaufler
Date: March 7, 2016
Re: Minnehaha Creek 100-year Flood Maps

Purpose:

Provide an update on the Minnehaha Creek 100-year flood maps which were included in the 2014 MCWD Flood Report.

Background:

At the December 17, 2015 Board Meeting staff presented the 2014 MCWD Flood Report for Board review and acceptance. As part of developing the 2014 MCWD Flood Report, District staff worked with the Department of Natural Resources (DNR) who utilized FEMA grant dollars to model and map various flood scenarios for Minnehaha Creek. On December 17, included within the “Maps” section of the report were three maps created by the DNR.

Map 10 was labeled as providing a comparison between FEMA’s effective 1-percent annual chance (100-year) flood event and the Atlas 14 1-percent annual chance flood event. Based on this information, the Board of Managers requested staff develop a plan to communicate the modeled difference to local communities.

Subsequently District staff coordinated with the DNR to review the modeling conducted and the associated maps. Through this coordination it was noted by the DNR that Map 10 was mislabeled and did not directly compare the FEMA and Atlas 14 100-year elevations, as different storm durations were used for each scenario.

FEMA 100-year storm modeling uses precipitation depths for 10 day durations, statistically selected as producing the highest potential peak flood elevation. The Atlas 14 precipitation depths used to produce Map 10 shows an event greater than the 100-year as the modeling was based on a 24 hour duration event with a 100-year flow out of Lake Minnetonka. When comparing 10 day duration precipitation depths between TP49 (used for FEMA) and Atlas 14, the depths are very similar and are therefore not expected to produce a substantial difference in

peak flood elevation. Based on this information, there is no longer a need to immediately communicate the modeled difference to local communities.

Next Steps:

The District continues to work on developing the tools needed to inform a comprehensive flood response plan. Staff will utilize Map 8 (FEMA 100-year versus the measured 2014 flood data) created by the DNR to identify areas where the model needs calibration. Additionally, the DNR and District staff have discussed an opportunity for the District to take advantage of additional FEMA grant funds to develop a series of new maps. These news maps would model a range of precipitation events that could result in high water scenarios along Minnehaha Creek. Utilizing the high water scenario maps, the District would coordinate with the DNR's State Floodplain Manager to develop an outreach plan to inform the communities along Minnehaha Creek.

The District has also been coordinating with the National Weather Service (NWS) to develop a hydrologic forecast model. Through this coordination, the NWS is testing their ability to utilize the existing District XP-SWMM model to weather forecasts to forecast the total inflow to Lake Minnetonka. District and NWS staff are meeting this week to review what the NWS has developed to date and how the District can utilize this tool to inform future dam operations.

Together these tools will help inform how the District responds during high water situations and ultimately be used to form the District's flood response plan. The flood response plan will define the District's role and tools that the District can utilize during high water events. In 2016 the District will coordinate with Hennepin County Emergency Management to develop the flood response plan and develop a communication plan to disseminate it to local communities.

If there are questions in advance of the meeting, please contact Tiffany Schaufler at 952-641-4513 or at tschaufler@minnehahacreek.org.

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