

May 18, 2020

# Memo

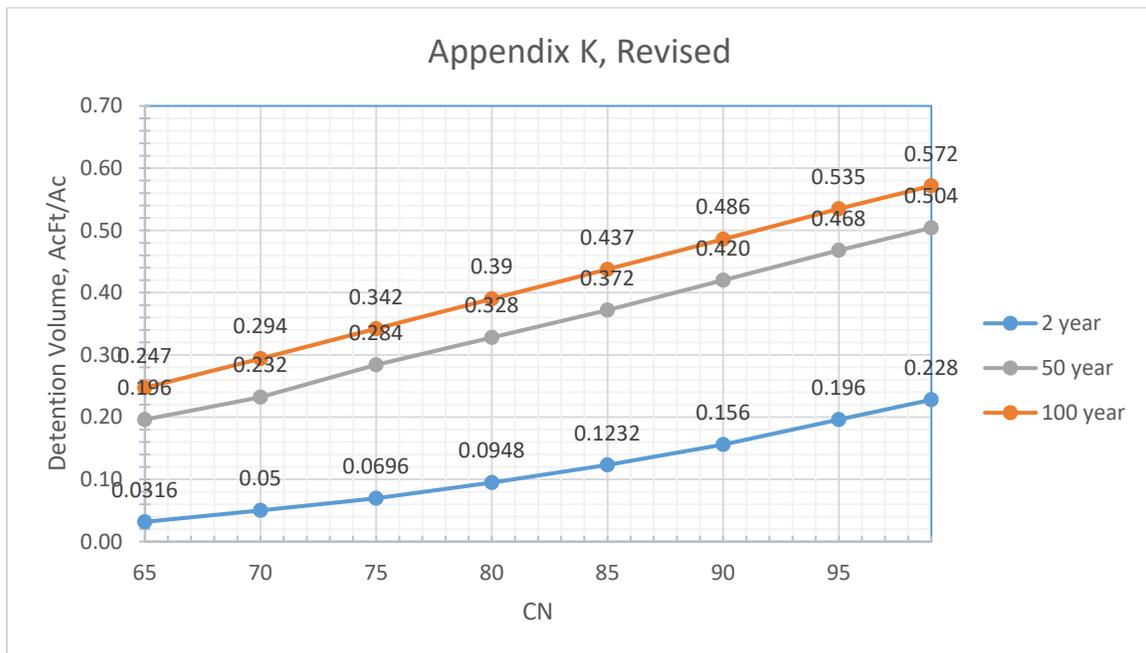
To: Kurt Woolford

From: Joy Corona

Re: WDO Appendix K

Per your request, I have evaluated potential revisions to Appendix K. The current Appendix is from the 1991 NIPC publication Investigation of Hydrologic Design Methods for Urban Development in Northeastern Illinois. The unit area detention curves were created using a calibrated continuous simulation (40 year record) HSPF model at 5 different data points. The curves were presented in a percent impervious versus unit area detention format. Per the study, the resultant "unit area detention volume had a nearly identical 100-yr, 24-hr rainfall depth as Bulletin 70."

As part of its previous discussions, TAC recommended that the revised Appendix K curves be presented based on CN as opposed to percent impervious (format of the existing Appendix K). The new analysis was completed using HEC-HMS. A total of 8 models were created at CN 65, 70, 75, 80, 85, 90, 95 and 99 including the 2-yr, 50-yr and 100-yr events. The volume required for the 50-yr event was interpolated based on model's resultant HWL and the stage-storage rating curve.



The final values were compared with the current Appendix K and the MWRD calculator. The difference between the revised Appendix K and MWRD curves is a reflection of the updated rainfall distribution.

