Drainage Work Group Meeting Notes

December 7, 2023

1:00PM -3:00PM

Virtual Teams Meeting

*Attendees (online): Tom Gile, Travis Germundson, and Rita Weaver BWSR, Alex Trunnell Corn Growers Assoc., Rob Sip RRWWB, Chuck Brandel ISG, Kale Van Bruggen Rinke Noonan, Myron Jesme and Chris Otternsess Watersheds, Suzanne Jiwani IWL, Scott MacLean MPCA, Warren Formo MAWRC, Linda Varva MW, Mark Deutschman, Dave Craigmile LqYB, Mark Dittrich MDA, Brian Martinson AMC, Allen Wold BdSWD, Chad Engels, , Don Arnosti, Greg Holmivk, Neil Peterson BWSR*

Agenda:

Outlet Adequacy Subcommittee Consensus Topics

Tom G. talked about the agenda and some house cleaning items. These four topics were generally agreed upon by the subcommittee group. The topics are those where a fair about of work is being done, just to find better ways to document it. These are topics where there was consensus and there was a desire to capture that in the report. Rite W. provided some discussion on how the subcommittee came to consensus on these topics in report.

Hydrograph Duration – Becomes an issue when we add storage to a system to reduce peak flows, which increases the overall duration of the event and may make conditions worse downstream, which can cause more erosion. There are things that drainage engineers can do (bulleted items in the report). Rita W. mentioned that the committee determined that duration was not required to be address but wanted drainage engineers to take a look at and considered it. Its more than just streambank erosion and having an impact on uses of the land downstream. Quantify what we are seeing vs what the improvement will achieve. It’ still prudent to address some of these things in the drainage engineer report. It was mentioned that a lot of reports are including hydrographs. An analysis can be made from these hydrographs. It was clarified that no adjustments to 103E statute language is being requested only information to the DWG. The DWG will decide if they want to make changes to statute. Tom G. mentioned that the best path forward is to memorize this, not advocating anything statutorily to be changed.

Calibration of Models- This is primarily just conversations on the level of effort that should go into these models. Again, these are just recommendations for the engineer’s report. Rita W. calibration is our H&H model and gauge flows to identify issues in modeling where poor assumptions were made, etc. The Issue is that we don’t typically have good gauge date. Validation is a lesser level of calibration then gauge data but gives some verification that model is good. Its difficult to do calibration/validation at these sites, since most sites are very small. Trying to determine effects of storm events on an outlet. Report is focused on outlet adequacy as being deemed adequate. Tom G. mentioned that assessments of outlet adequacy are connected to a drainage project. The outlet needs to be deemed adequate for the proposed conditions in order for the drainage project to move forward. This is just talking about calibration of the model and not an assessment of adequacy. Rita W. Indicated that we are not assuming that the outlet is adequate. If excessing outlet is unstable the project may still help the outlet (like adding storage, etc. ).

Software (Modeling): Consideration of modeling and methods used. Drain tile is difficult to apply to models. Particularly things that are not part of the public systems. Rita W. mentioned how we are considering the changes in private tiling to model a public system. Hard to capture since don’t know where all the tile is located at. Can assume certain flow rates. Looking at max build out conditions (future condition). The subcommittee did agree that looking at some future conditions like 1W1P, etc., but fell short on saying it’s a requirement for the drainage authority. Comment – some Watershed Districts require permit for surface water drainage and all tile lines. So, they do have records on some of the tile. It’s an important communication piece to understand what went into the model that lives outside the public systems but have an impact.

Future Conditions What degree of future assumptions should be considered? Rita W. There are other changes out there which are hard to capture. Can’t legally say that drainage authorities consider future condition but recommend that they take a look at things. The report itself tried not to imply causation.

Next steps: Overall no concerns were raised on these topics from the group just a few minor questions regarding clarification. Tom G. again mentioned that he would not advise that the DWG recommend any statutory changes. There seemed to be general agreement to use this information to update sections in the drainage manual. Rita W. stated that no more changes to the report at this time, needs to get to the DWG. Tom G. indicated that these discussions from the group (Nov. 30/Dec.7 meetings) will be mentioned next week at the in-person drainage work group.

Software conversion follow up- Rita W. very difficult to model everything in a system. Group agreed that what drainage engineers are using is good. Different models for different situations, there was a lot of agreement on this from the subcommittee. Some of the modeling software requires a licensing and unable to be reviewed by everyone. Can provide any outputs from the model to the public, thus don’t need to see the model itself. A factor of safety is included in flood models, but this isn’t done in drainage modeling, which is based on current conditions. Also, we can’t be listing out specific models in statute since they change over time. Guidance in the drainage manual does not mean a mandate to incorporate best practices. It doesn’t change drainage law or other legal implications. Its information that can be used by drainage authorities.

Will give updates on the November 30th and todays meeting to the entire DWG.

Place Calendar holds on virtual check in meeting on December 21 and January 4 from 1PM-3-PM.

Next Meeting – 11AM-2PM Thursday December 14, 2023 in St. Paul and 11AM-2PM January 11, 2024 in St. Cloud.

Adjourned 2:13PM