

Engineering Department

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Date: June 21, 2016
To: Water Resource Coordinators Group
cc: Minnesota Cities Stormwater Coalition
From: Jessica Vanderwerff Wilson, Water Resources Coordinator
Subject: Wellhead Protection Plan implementation and stormwater management

The City of Edina completed an update of its Wellhead Protection Plan Part I in June 2011 using the latest regional groundwater flow modeling, MetroModel 2.0, to delineate Edina's Drinking Water Source Management Area (DWSMA). The newly modeled DWSMA covered virtually the entire City and extended into many neighboring cities; it was also more extensive than the model it replaced. The update to Part II was completed in April 2013. Among the objectives were 1) developing an inventory of potential contaminant sources, 2) education and outreach to the public, 3) monitoring and modeling to better understand the source of Edina's water supply, and 4) working cooperatively and collaboratively with other city departments and surrounding municipalities to better understand the groundwater system and accomplish the above listed objectives.

A meeting of the Water Resource Coordinator's Group was held on March 26, 2016 to discuss the MS4 general permit requirements with a focus on the stormwater infiltration limitations for DWSMAs and how to collaborate with neighboring cities on wellhead protection activities.

In addition to open discussion, several topics were posed to the group to gather data on wellhead protection plan activities in each city. Participants were asked to discuss the following topics in the information sharing exercise;

1. Stakeholder mapping
2. How do we share information (strategies, materials, news, etc.)
3. Wellhead protection implementation barriers and opportunities
4. What resources and tools are you using

Transcribed and raw notes for the information sharing exercise are included in the appendix.

Several major themes arose from the conversations and are described below.



MS4 permit implications

The MS4 general permit requires regulatory mechanisms that incorporate stormwater limitations to protect DWSMAs. MCM 5 Post-Construction Stormwater Management states that the permittee's regulatory mechanism(s), "shall restrict the use of infiltration techniques to achieve the conditions for post-construction stormwater management, without higher engineering review, sufficient to provide a functioning treatment system and prevent adverse impacts to groundwater, when the infiltration device will be constructed in areas:

- a) With predominantly Hydrologic Soil Group D (clay) soils
- b) Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features
- c) Within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13
- d) Where soil infiltration rates are more than 8.3 inches per hour

City staff that manage the stormwater pollution prevention program are required to incorporate these requirements into their city review process and should be familiar with the areas covered by their community's and their adjoining community's DWSMA and WHPP to properly manage stormwater infiltration.

DWSMA modeling

As cities update their WHPPs with the new MetroModel 2.0, the extent of municipal DWSMAs have become more extensive. More cities are completely covered by their own DWSMA or through overlap from that of a neighboring community(s). The MPCA has an online tool to map DWSMAs <http://pca-gis02.pca.state.mn.us/ms4/index.html> that can be helpful. Additionally, consultants that do the modeling often scale and refine the model down to the community level.

One issue that was discussed it that there is no single type of model or mapping system that is currently being used and not all plans have been updated to the current requirements which could cause discrepancies in the DWSMAs of neighboring cities.

Stormwater Infiltration Guidance

The group discussed 'higher engineering review' per the MS4 permit language and noted that more guidance on how this is defined or when stormwater infiltration is appropriate would be helpful. Some cities expressed concern over capacity for such review and were unwilling to take on the additional liability.

Only very recently have the MPCA and MDH collaborated on guidance for stormwater infiltration, where previously the MPCA broadly recommended infiltration as a tool for managing stormwater, and MDH broadly cautioned against it due to implications for DWSMAs.

A flowchart for 'MDH Stormwater Guidance for Sites in Drinking Water Supply Management Areas' and supporting documents were made available in the Stormwater Manual on March 1, 2016 at http://stormwater.pca.state.mn.us/index.php/Stormwater_and_wellhead_protection.



Role of Watershed Districts (WDs)

WDs broadly address groundwater protection in their rules; however, they typically don't address wellhead protection or DWSMAs specifically. Another complication is that when watershed district stormwater rules are triggered, infiltration is required. Upon city review, infiltration may be prohibited to protect vulnerable wellhead areas. This lack of a unified approach to stormwater infiltration by permittees and districts can become time consuming, cause confusion, and limit the confidence of residents and developers going through the permitting process. It was suggested that Watershed Districts should incorporate similar review requirements for DWSMAs and infiltration conflicts in their permit review process.

Municipal Roles/Collaboration

In many cities, the Wellhead Protection Manager works on groundwater issues and is housed in the Utilities Department while the stormwater manager deals mainly in surface water and is housed in the Engineering Department. These silos can make it difficult to connect on surface water and groundwater issues and this was a common theme among the meeting participants.

The information sharing exercise data shows that some cities have little or no knowledge of their Wellhead Protection Plan requirements, including education measures being taken, pollution prevention requirements and the areas covered, and cited disconnected departments as a factor. This is in conflict with the MS4 permit which has Minimum Control Measures that overlap with the Plans of Action in the WHPPs.

When the City of Edina created the Water Resources Coordinator position in 2012, it was strategically designed to manage surface and groundwater under the same department. It followed the culture shift to thinking about the connectedness of all water resources that was seen in BWSRs One Watershed One Plan approach. Additionally, there were many overlaps in implementing stormwater and wellhead protection programs. It was felt that cities in the future should look at ways to close these gaps so they work together.

Minnesota Department of Health – Source Water Protection Grants

Some cities have been awarded Source Water Protection Grants to implement WHPPs. Projects have included well sealing campaigns, and public education, and building Potential Contaminant Source Inventories. This might be an option for these types of measures that need funding.

Future meetings

The group discussed the value and interest of meeting regularly to address these issues. Options included meeting as part of the Water Resources Coordinator Group which would draw a wider range of cities and agencies for a discussion. Or future meetings could be coordinated by the Minnesota Cities Stormwater Coalition as it is part of the MS4 permit requirements. Randy Neprash was going to discuss this with the MCSC Board to see if they wanted to play a role in defining this need and convene stakeholders.

As an example, there are eight cities in the north metro that are part of the Anoka County Municipal Wellhead Protection Group who meet regularly to discuss these types of issues, including how to collaborate on issues as they arise.

