Meeting Update: Sustainable Groundwater Use In The Little Rock Creek Area

On March 23, 2022, staff from the Minnesota Department of Natural Resources hosted both virtual and in-person meetings with Little Rock Creek Area stakeholders to provide information on recent analysis and to discuss next steps for assuring a sustainable supply of groundwater in the Little Rock Creek area.

Dan Lais, Central Region Manager welcomed attendees and recognized the importance of the discussion. He said that DNR knows and understands that groundwater is tied to livelihoods, family and community. He said that DNR representatives will describe different options for water management in the Little Rock Creek Area. He closed by saying that the DNR will listen to and collaborate with water users to explore a full range of potential ways to manage water in the Little Rock Creek Area.

Regulation

Randall Doneen, DNR Manager for the Conservation Assistance and Regulation section restated something he said at last June's stakeholder meeting; the DNR is opting for a regulatory approach in the Little Rock Creek Area that provides flexibility for irrigators while at the same time protecting natural resources. Doneen said groundwater appropriations for irrigation are administered under the groundwater part of Minnesota statutes. However, if groundwater appropriations are having a negative impact on surface water, that appropriations are subject to surface water statutes. This would result in unacceptable implications for irrigators in the Little Rock Creek area in the form of all appropriations being temporary and permit suspensions at low flow. The DNR will forgo setting a protected flow at this time to allow time for water users to develop an alternative plan.

Water users can propose a plan

Doneen said that a "water use conflict" exists in the Little Rock Creek Area because the competing demands among existing and proposed water users of the same class (agricultural irrigation) exceeds the reasonably available water supply. He highlighted Minnesota Rule 6115.0740 that describes the process for resolving water use conflicts. That process provides a path for the water users to come up with a plan to resolve the conflict and submit that plan to the DNR Commissioner for approval. The DNR will meet with irrigators to collaborate on an action plan to resolve the water use conflict.

Managing water differently

Jason Moeckel, DNR Manager for the Information Monitoring and Analysis section summarized the analysis he described at the last stakeholder meeting. The amount of groundwater use, as authorized by permits, is causing adverse impacts to Little Rock Creek in 4 of 12 years analyzed. However, these adverse impacts can be avoided by limiting the diversion of streamflow to no more than 15% of August median baseflow.

Moeckel then reviewed the potential water management scenarios found in the Sustainable Use of Groundwater in the Little Rock Creek Area Plan:

- managing water in the Sartell WMA (Wildlife Management Area) differently,
- increasing water conservation,
- using pipelines to distribute water from sources farther from the stream,
- augmenting stream flow during low flow periods by pumping water into the stream from a well(s), and
- modifying permits.

DNR acts on Sartell WMA

Little Rock Creek is impaired for aquatic life, nitrates and dissolved oxygen (See Little Rock Creek TMDL). The DNR has determined that the impoundment in the Sartell Wildlife Management Area is a contributing factor. The DNR will modify the operation of the dam for a trial period of three years by removing all boards in the dam spillway and allowing a free-flowing stream system. Stream temperatures will be monitored to determine if this action has the desired effect.

Groundwater recharge

The DNR supports groundwater recharge through practices like soil health and wetland restorations. Though beneficial, these practices alone cannot achieve the required reduction in stream diversion due to the amount of land that would be needed to get enough recharge to get to a 15% streamflow depletion.

Water conservation

Moeckel said that the DNR supports efficient and reasonable use of water. The DNR will work with the Benton SWCD and others to support water use efficiency. However, the analysis indicates that water conservation measures alone are insufficient to reduce streamflow depletion by the amount needed.

Shift pumping away from stream

Moeckel went on to describe importing groundwater for irrigation from a distance sufficiently far enough from the stream to keep streamflow depletion below the 15% threshold. This option would involve distributing water to a relatively small number of irrigation fields near Little Rock Creek. This

approach has many details that need to be considered, but Moeckel said that the DNR's initial analysis indicates this may be the lowest impact solution. A new, local governing body like an irrigation district or rural water district might be necessary to install, operate and maintain such a system. He said that the DNR will provide technical support if this option is pursued.

Streamflow augmentation

At the request of stakeholders, Moeckel said that the DNR evaluated the potential to augment streamflow by pumping water directly into the stream. However, the DNR's evaluation of this alternative has identified several feasibility and policy challenges that may be difficult to overcome. For example: Water quality impacts, governance, funding, precedent and it is possible the law does not allow it in areas like Little Rock Creek. Moeckel said that the DNR does not recommend further exploration of this option.

Permit amendments

The last option, although not preferred, involves adjusting permits within the zone of influence to reduce the volume pumped that results in no more than a 15% diversion of the August median baseflow. To implement this option, the DNR would establish a "zone of influence" based on the hydrogeology of the area such that permits with a de-minimus impact on stream flow are not considered for reduced volume. A draft map of the zone of influence was discussed during the meeting. The modeling analysis indicates that that the reductions needed are substantial and would likely require considerable changes in crop selection. Even with additional flexibility to use water across multiple fields it's likely that this option would still have considerable impacts to the agricultural economy of the area.

Stakeholder feedback

Attendees to the meeting questioned how quickly the DNR was going to move to resolve the water use conflict. While this issue must be resolved, the DNR recognized that working with affected irrigators may take some time.

Several statements were made suggesting water conservation and efficiency should still be pursued and included in any proposal.

Some irrigators were questioning why stream augmentation is not DNR's preferred option. The DNR staff responded that there are many hurdles and the most prominent is that it is not allowed under existing law in "areas of concern". Additionally, because DNR does not have the authority to do the work to install or to operate such a system, new authorities such as an irrigation district would have to be developed and would be a first in the State of Minnesota.

Next steps

Some attendees turned their attention to next steps and the future. There was interest in a smaller group of irrigators getting together to meet with DNR to understand the analysis and formulate what next steps irrigators would take. One attendee suggested an experiment to use lottery funds to pay to fallow some fields next to Little Rock Creek.

The DNR committed to meet with irrigators to provide information and some technical analysis to work towards development of a plan that the DNR can review and consider for approval. The DNR will also be notifying all permittees within the Little Rock Creek Study Area of these analyses and next steps.

Contact Information

Questions about this project can be addressed to Mark Hauck, DNR project manager, 320-223-7846, mark.hauck@state.mn.us

For more information on the Little Rock Creek area groundwater project, visit the project web page at www.mndnr.gov/littlerock. For more information on DNR's groundwater management programs, visit www.mndnr.gov/gwmp/index.html.