

DRAFT PLAN AT-A-GLANCE

LITTLE ROCK CREEK AREA SUSTAINABLE USE OF GROUNDWATER ACTION PLAN

DNR Won't Change Permits Through 2022



The Department of Natural Resources (DNR) will initiate no changes to existing water appropriation permits in the Little Rock Creek Area based on a cumulative use analysis through 2022. Permits that have been issued as “limited” will be extended until 2023.

This Draft Action Plan lays out the steps that DNR will be taking over the next five years to better understand the relationship between groundwater use and the ecosystems of Little Rock Creek.

The lower portions of Little Rock Creek are directly connected to the groundwater system, and the DNR is certain that groundwater use is altering the flow of groundwater into the stream.

We are not yet sure of the magnitude of the impact that cumulative groundwater use is having on the stream. Once we are clear about the magnitude, we can determine whether groundwater use is having a negative impact on the stream and what actions will be necessary to reduce the impacts to the stream.

Why is DNR Doing this Action Plan?

- Groundwater use is vital to the people and economy of the Little Rock Creek Area.
- The DNR wants individuals, communities and businesses to keep using groundwater.
- However, the DNR can issue permits for groundwater use only if the use is sustainable as defined by statute.
- The DNR is concerned that total permitted groundwater use in the area might not be sustainable, because groundwater use might be having a negative impact on Little Rock Creek.
- We know groundwater use is affecting the stream; we don't know if it is causing a negative impact.
- We will be collecting and analyzing additional information to determine whether total permitted groundwater use is or is not having a negative impact on Little Rock Creek.
- We will continue to work with individuals, communities and businesses as we make this determination, and as we develop and implement this action plan.

Where is the Little Rock Creek Area?



The “Little Rock Creek Area” has been delineated by the DNR to help manage the sustainable use of groundwater. Groundwater users in the area are using a connected groundwater system.

The Little Rock Creek Area is located in northwestern Benton and southern Morrison Counties. It is bounded to the North by the Skunk River, to the west by the Platte River, to the east by the watershed boundary of Little Rock Creek and to the south by Little Rock Lake.

The area is home to approximately 5,650 residents; with 1,650 living in the countryside and about 4,000 residing in the cities of Royalton, Buckman and Rice.

The Little Rock Creek Area is approximately 120,000 acres in size. Land use in the area is predominantly agricultural, with a rich history of both animal and row crop operations.

PEOPLE ARE MEETING THE CHALLENGE OF SUSTAINABLE USE

A Message from the Commissioner

The DNR is committed to working with local residents, businesses, and civic leaders to ensure that groundwater use is sustainable in the Little Rock Creek Area.

Together, we can make sure that groundwater supplies support farming and other local businesses, domestic water supplies, recreational resources, and surface water systems.

Minnesota's natural resources are a legacy that all Minnesotans hold in common, enriching our lives economically, recreationally, and ecologically. Lakes, streams, and wetlands, along with the often invisible and essential groundwater systems, are excellent examples of this tremendous inheritance.

The challenge to the present generation of Minnesotans is to use and manage our outstanding water legacy in ways that create a sustainable quality of life.

This requires not only economically efficient use of water today, but also intentional conservation of the surface and groundwater systems that will support our communities, as well as the natural and recreational resources we cherish, well into the future.

The people of the Little Rock Creek Area in Central Minnesota are meeting this challenge head on. Since January of 2016, the DNR has been meeting with residents, irrigators, and local government leaders to discuss, analyze, and plan for the sustainable use of groundwater in the area.

This five-year groundwater management plan is a direct result of those discussions. We deeply appreciate the time and energy these citizens have dedicated to this effort.

— **Tom Landwehr, Commissioner,
Minnesota Department of Natural
Resources**

For additional information about the Little Rock Creek Area and this effort, you can:

- Search mndnr.gov/littlerock.
- Contact Mark Hauck at mark.hauck@state.mn.us or at 320-223-7846.

Public Involvement is Vital

Project Advisors

In January 2016, DNR brought together permit holders, local officials, and other members of the public to provide perspectives and advice on local groundwater management.

This "Project Advisory Team" met thirteen times over the next eighteen months. The team's meetings were open to the public and often had fifteen to twenty audience members.

The advisory team discussed important technical and regulatory questions, shared local information from water users, got updates from other agencies and organizations, and often voiced very different opinions about groundwater issues in the area. (See section *Advisors Made a Difference to this Draft Plan.*)

DNR sincerely appreciates the time and energy members of the Project Advisory Team and other stakeholders have given to this project. Their perspectives and advice have directly shaped the Draft Action Plan, although many still hold different opinions about what DNR should do.

Feedback on this Draft Action Plan

DNR wants your feedback on this Draft Action Plan. We have developed four ways for you to share your ideas with us:

We have posted the Draft Action Plan and a Feedback Survey on our website: mndnr.gov/littlerock. The survey makes it easy for you to share your thoughts and get them to us.

The DNR will host a public meeting on **Saturday, December 9, from 11 a.m. to 3 p.m.** at the **Little Falls Community Middle School Commons, 1000 1st Avenue Northeast, Little Falls, Minnesota**. DNR staff will answer questions and provide opportunities for public comment on the draft plan.

You can talk directly with our lead staff person about the Draft Action Plan, either by email or phone. Please contact Mark Hauck at: mark.hauck@state.mn.us or 320-223-7846.

The People Expect Sustainable Use

State law directs the DNR to conserve, manage, and develop surface and groundwater resources of the state. It also requires that DNR ensure that Minnesota's surface and groundwater resources are being used sustainably (see Minnesota Statutes 103A and 103G). These laws guide DNR management and helped frame this Draft Action Plan.

PROPOSED ACTIONS TO SUPPORT SUSTAINABLE USE OF GROUNDWATER

In order to keep the public aware of and involved in the management of groundwater in the Little Rock Creek Area, the DNR will do the following:

- Develop a five-year action plan and work with the public to review the plan. The plan will guide DNR management from 2018 through 2022.
- Keep interested individuals informed about the plan using the DNR website, periodic email updates, and at least one public meeting per year.
- Initiate a second round of action planning in 2022.

In order to inform future decisions about a protected flow and a sustainable diversion limit for Little Rock Creek, the DNR will do the following data collection and analysis before 2019:

- Expand collection of stream flow and temperature data on Little Rock Creek.
- Continue monitoring groundwater levels throughout the area.
- Measure and analyze the fish habitats in Little Rock Creek, which includes a detailed analysis of stream flow, water depth, type of stream beds and presence of aquatic vegetation.
- Finalize groundwater flow analysis (a MODFLOW model) incorporating perspectives from a technical advisory team and a third party reviewer. Publish a report on the analysis.

In order to determine if cumulative use is having a negative impact on Little Rock Creek, the DNR will work with the public to:

- Establish a protected flow for Little Rock Creek in 2020.
- Based on the protected flow, establish a sustainable diversion limit for cumulative groundwater appropriations in the Little Rock Creek Area in 2020.
- Determine whether cumulative use is greater than the sustainable diversion limit in 2021.

In order to improve the hydrology and biology of Little Rock Creek, the DNR will first evaluate the impact and feasibility of a variety of management actions. Then, the DNR will work with stakeholders to determine the most appropriate management actions to keep permitted water use within the sustainable diversion limit. The management actions to be evaluated include:

- Managing water levels differently in the Sartell Wildlife Management Area.
- Pumping groundwater into Little Rock Creek and/or Bunker Hill Creek during times of low stream flow (stream augmentation).
- Enhanced water conservation by current water appropriation permit holders.
- Additional groundwater recharge.
- A new rural water distribution system to supply irrigation water from wells that are farther away from the creek.
- Installing vegetated riparian buffers to improve temperature, sediment, and other water quality aspects of the creek.
- Modifying existing water appropriation permits (evaluate the impact not only on water quality and fish habitat but also on the regional economy).

In order to more accurately estimate the amount of water being used in the Little Rock Creek Area, the DNR will do the following over the next several years:

- Work with all water appropriation permit holders to evaluate the accuracy of their reported water use estimates. This will start with a group of irrigators who volunteered to compare their own existing water use estimates to flow meter measurements.
- Clarify the number of livestock operations in the Little Rock Creek Area and their annual groundwater use.
- Clarify the extent of non-permitted groundwater uses in the area,

including low-volume domestic wells and any high-volume users operating without permits.

In order to improve water quality in the Little Rock Creek Area, the DNR will provide data and technical support to the following organizations:

- Minnesota Department of Health and Minnesota Department of Agriculture to help keep drinking water within health risk limits.
- Minnesota Pollution Control Agency and local Soil and Water Conservation Districts to reduce water quality impairments in Little Rock Creek.



In order to support the continued permitting of water use in the Little Rock Creek Area, the DNR will do the following:

- Issue only time-limited water use permits for new permits or permit amendments in the Little Rock Creek Area to assure compliance with Minnesota rule and statute. “Limited” in this context means that permits are in force through December 2022.
- Extend all existing limited water use permits through December 2022 to allow for continued water use while data gathering and analysis are completed.
- Approve water use permit transfers if there are no changes in volume and all other legal requirements are met.

Project Advisors Made a Difference in this Plan

Project Advisors have made a difference in this Draft Action Plan. Here are a few important examples:

Advisor Input: When you write the plan, be clear about the problem and what DNR intends to do about it.

DNR Response: The DNR created a plan that is concise, describes the problem and is focused on actions.

Advisor Input: If depleting stream flow only happens in August, pumping more water in the stream for that month might maintain habitat without reducing permitted use.

DNR Response: The DNR will evaluate the feasibility of stream augmentation to mitigate August stream depletion.

Advisor Input: The DNR is trying to put irrigators out of business.

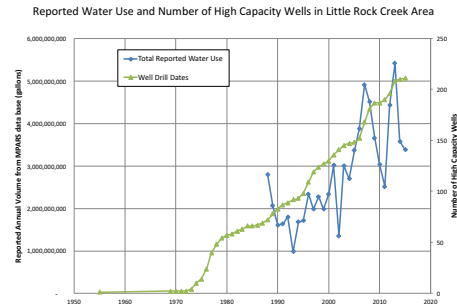
DNR Response: The DNR has committed to conduct substantial additional data collection and analysis to ensure that sound science is applied to our management of groundwater in the Little Rock Creek Area.

The DNR will not modify permitted volumes for existing water appropriation until first evaluating other water management strategies such as water conservation.

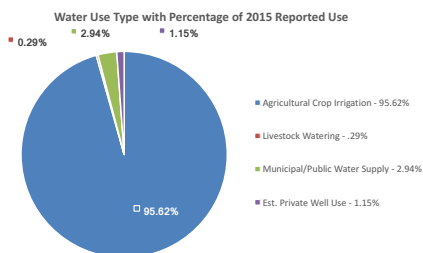
The DNR will extend permits issued for a limited time period to allow continued groundwater use while the additional data collection, analysis and alternatives evaluation are being completed.

Groundwater Use in the Area

From 1988–2016, the annual reported groundwater use varied from about 1 billion gallons in 1993 to about 5.4 billion gallons in 2014.



Of the reported 2015 water use, 95.6% of the groundwater use was for agricultural irrigation, 1.2% was reported for municipal (city) water supply and 0.3% was for livestock watering. An estimated 2.9% was pumped from private domestic wells that do not typically require a water appropriation permit.



Little Rock Creek is an Important Coldwater Trout Stream

Little Rock Creek is a coldwater stream that relies on a regular flow of cold groundwater to maintain its temperature. Coldwater streams and their particular biology are uncommon in this part of the state. Little Rock Creek is also a designated trout stream. DNR actively manages the stream as a recreational trout fishery. It was originally stocked in 1908. Yearly stocking occurred from 1962 to 1972. Stocking resumed in 1995. Currently, DNR stocks trout every year alternating between brown trout and brook trout.

DNR conducts annual trout population assessments, periodic fish community assessments, and regularly monitors stream temperatures. DNR has obtained access easements to provide fishing recreation opportunities along both Little Rock Creek and Bunker Hill Creek, another designated trout stream in the area.

Protected Flow in the Stream is a Key to Sustainable Use

According to Minnesota Rules, a stream’s “protected flow” is the amount of water required in the watercourse to meet the needs of fish and wildlife habitat, water quality and priority downstream users.

DNR is proposing to work with the public to set a protected flow for Little Rock Creek in 2020, following some additional data collection and analysis in 2017 through 2019.

Once a protected flow is established for the stream, DNR can calculate the amount of groundwater use that is sustainable (what we call a “sustainable diversion limit”).

Groundwater Use Affects Little Rock Creek

The lower portions of Little Rock Creek are directly connected to the groundwater system. The stream flow is made up of groundwater that seeps into the stream and runoff from rainfall and snowmelt. Groundwater appropriations can end up diverting groundwater from entering the stream.

Little Rock Creek is listed as having impaired water quality by the Minnesota Pollution Control Agency (MPCA). It has high nitrate levels, low dissolved oxygen levels, and a lack of cold water assemblage. The MPCA identified groundwater use as a contributing factor to the water quality impairments in the stream.