

I am writing in support of HF 1680. Sustainable diversion limits on groundwater appropriations provided. It states that “groundwater appropriations may be authorized only if they avoid known negative impacts to surface waters.”

- HF 1680 provides stronger statutory definitions for terms that come up in the groundwater sustainability standard and it has stronger language around groundwater appropriations that would impact surface waters.
- “Groundwater supplies 75 percent of Minnesota's drinking water and 90 percent of agricultural irrigation,” according to the MN DNR.
- This bill needs your support to ensure our groundwater and surface water will be sustainable for future generations.

I live in Elko New Market and currently, the City of Elko New Market has requested to triple their groundwater use permit to facilitate the proposed Niagara water bottling facility. Niagara wants to mine 310 million gallons of groundwater annually through the city's municipal wells that draw water from the Jordan aquifer.

- This could draw down the surface water above the aquifer and damage the Vermillion River, a rare urban trout stream.

Now, I am not a water expert, but what will this do to the groundwater that bubbles up and feeds the Vermillion River. The groundwater is cold, and high in dissolved oxygen, a must for a trout stream.

Further, I have learned about a new Calcareous Fen identified in Murphy Hanrahan Park Reserve in Burnsville, known as the Kelleher Park Fen. The Kelleher Park Fen in southwest Burnsville is part of a wetland complex in both Murphy Hanrahan Regional Park Reserve and the adjoining city-owned parkland, Kelleher Park. The Kelleher Park Fen was officially listed for state protection in 2021.

We need regional studies in this area, to show where the Kelleher Fen's groundwater comes from, and to determine if city wells in Lakeville, Prior Lake, Burnsville, Savage, Credit River, and Elko New Market are already affecting it.

There is potential for cumulative negative environmental impacts from current and proposed increases in municipal groundwater pumping in the southwest metro sub-regional aquifer, not just in Elko New Market, but also in adjoining northeastern Scott County and western and northern Dakota County.

This graph shows water volumes permitted by the DNR and Actual use in 2021.

City	Total Volume Permitted by DNR	2021 Volume Used
Empire Township	90,000,000	107,472,000
ELKO NEW MARKET	135,000,000	125,813,000
Montgomery	160,000,000	87,128,000
New Prague	360,000,000	281,033,400
ELKO NEW MARKET PROPOSED (CITY GROWTH + NIAGARA PHASE I)	365,000,000	
ELKO NEW MARKET PROPOSED (CITY GROWTH + NIAGARA PHASE I & II)	475,000,000	
Prior Lake	900,000,000	854,285,000
Northfield	980,000,000	739,166,000
Farmington	1,000,000,000	824,915,341
Rosemount	1,183,000,000	1,117,021,700
Savage	1,250,000,000	391,455,566
Hastings	1,300,000,000	894,118,000
Faribault	1,740,000,000	1,354,200,087
Shakopee	2,246,200,000	2,080,182,000
Mankato	2,800,000,000	1,791,048,000
Lakeville	2,812,000,000	2,855,400,000
Apple Valley	3,000,000,000	2,561,606,000
Burnsville	3,400,000,000	3,431,990,196
Eagan	3,900,000,000	3,300,025,500

Please note: Lakeville, Burnsville and Empire Township are all above there permitted use.

And Prior Lake, ENM, Rosemount and Shakopee are all close to their permitted amount.

It's time to hit the pause button and take a broader look at this entire area and whether municipal wells are having known negative impacts to surface waters. All the cities listed are planning to grow, but we need to be responsible with our groundwater.

So, my ask today,

Please support this bill to ensure our groundwater and surface water will be sustainable for future generations.

Thank you,

Janelle Kuznia
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Elko New Market, MN 55020
612-619-6613



To: Chair Hansen, House Environment and Natural Resources Finance and Policy Committee
From: Nadia Alsadi, Water Policy Associate; Andrea Lovoll, Legislative Director, Minnesota Center for Environmental Advocacy
Re: HF 1680 (Hansen) – Sustainable diversion limits on groundwater appropriations.

Thank you for your service to the people of Minnesota and thank you for the opportunity to testify on HF 1680 (Hansen) for sustainable diversion limits on groundwater appropriations. The Minnesota Center for Environmental Advocacy (MCEA) supports HF 1680 because it acknowledges the urgent need to address the close connections between groundwater and surface water resources throughout our state.

MCEA supports the addition of scientifically sound definitions into statute, and HF 1680 addresses this need by strengthening the groundwater sustainability standard. We support definitions added into statute that strengthen this standard while addressing the interconnectedness of groundwater appropriations and impacts to surface waters. By clearly defining ecosystem harm and negative impacts to surface waters, this bill will strengthen the sustainability standard in 103G.287. Furthermore, the changes to 103G.287 subd. 2 will give the DNR Commissioner the authority to deny groundwater appropriation permits that have the potential to negatively impact surface waters.

Groundwater resources are inextricably and deeply tied to surface waters. In the karst region of southeastern Minnesota, movement from surface water to groundwater and horizontally can be rapid, with studies showing a horizontal groundwater velocity of 800 feet per day (Groundwater Atlas 2021 - Alexander and others, 1991). The karst region should be considered highly vulnerable and susceptible to compounding damages from appropriations. Groundwater modeling (Bonin, 2019) displays a strong connection between the bedrock and surficial aquifers in this region. Aquifer tests of the Prairie du Chien aquifer in this region indicate that there may be overlying saturated layers that are experiencing “leakage.” As a result, any drawdowns to the aquifer will consequently also drawdown surface water bodies (Bonin, 2009). The Vermillion River would be susceptible to significant drawdowns from groundwater withdrawals, with estimates ranging from 17-38% by 2030 (Scott County, 2009). These bedrock aquifers are already the primary source for many groundwater appropriations and are therefore vulnerable to continued drawdowns, negative aquatic ecosystem impacts, and irreparable wetland damages. The drawdown and drying out within wetlands and aquatic ecosystems could lead to other negative environmental impacts, including critical habitat destruction, infiltration of invasive species, increased probability of soil erosion, and higher likelihood of nutrient pollution in adjacent waterways, ultimately leading to irreversible consequences for water quality.

The karst region and Prairie du Chien aquifer tests (Bonin, 2019) indicate a greater need for DNR to initiate further aquifer testing to better understand the relationship between groundwater

withdrawals to surrounding aquifers as well as surface waters. MCEA encourages the utilization of aquifer tests in permit reviews to better understand these relationships and to more accurately determine if there will be no negative impacts.

The Minnesota Department of Natural Resources (DNR) has reported that there are specific thresholds for groundwater appropriations that may be necessary to ensure that there are no negative or permanent drawdowns to surface water bodies. However, there is currently no easy or clear way to describe what this may look like for any given or particular area. This bill will support the DNR's efforts in ensuring that aquatic ecosystems, wetlands, and riparian habitats are further protected from groundwater withdrawals.

This bill is a critical step to address the close relationship between groundwater and surface waters and the consequences that currently exist regarding these appropriations. For all these reasons, I strongly urge you to support the proposed bill.

Nadia Alsadi
Water Policy Associate
Minnesota Center for Environmental Advocacy

Andrea Lovoll
Legislative Director
Minnesota Center for Environmental Advocacy

Dear Lawmakers,

Many people would be shocked to learn that the Minnesota Department of Natural Resources (DNR) can't fully protect our lakes and streams, because of a loophole in state law.

HF1680 and its Senate companion, SF2703, will close that loophole. I urge you to support this common-sense reform.

Under present law, the DNR can stop users from removing too much surface water from our lakes and streams.

Under present law, the DNR can stop users from removing too much underground water through their giant wells, if the wells lower underground water levels and interfere with the underground water supplying existing wells.

But the loophole means the DNR does **not** have the explicit authority to tell users to dial back pumping through their giant wells, if the wells lower underground water levels, and lower water flow to the springs and seeps supplying our lakes and streams.

Please support HF1680/SF2703, to grant the DNR full power to protect our water resources.

Otherwise, we could lose a historic, noisy, indigenous sacred site in the city of Savage. Originally known as Hattenberger's Boiling Springs, it was a tourist attraction a hundred years ago, with its own post cards. The name refers to the water's surprising appearance, not its temperature.

Pressurized, cold, groundwater erupts above a pond's surface. These and other springs keep Eagle Creek cold enough to support native brook trout in the last trout stream in Scott County.

The DNR protected these sensitive, groundwater-dependent ecosystems in the 1990s, by establishing the first Aquatic Management Area, or AMA, there. Now there are more than 700.

Even though we bought the land to protect them from above, the loophole means the DNR can't protect them from below. The agency can't tell a city to reduce groundwater pumping, when it interferes with Boiling Springs.

Boiling Springs also is an indigenous sacred site, known as Maka Yusota, revered by the Dakota for centuries. It's on the National Register of Historic Places. Out of respect for its religious significance, the DNR doesn't publicize its location, which is why it's not a tourist attraction now.

To fully appreciate the value of this resource, you must see and hear it. Geologist Greg Brick shot and narrated this 3-minute video on YouTube: <https://www.youtube.com/watch?v=IxLvKr9AQIg>

Here's the pressing problem: The eruptions have diminished in frequency, intensity, and noise over the years. I've visited Boiling Springs frequently since the 1970s.

The City of Savage's 1994 AUAR environmental review determined the majority of the water erupting in Boiling Springs and Eagle Creek was regional groundwater from the south.

The water flows like a very slow underground river, north, sideways, through the fractures in the Prairie du Chien-Jordan bedrock aquifer, until it comes out in Savage. The study warned that cities' giant

municipal wells to the south could intercept the groundwater, leaving less water for Boiling Springs and Eagle Creek.

Now the latest Groundwater Impact Analysis study for Scott County, by Barr Engineering, predicts area city groundwater pumping could cause underground water levels to drop up to nine feet near Boiling Springs and Eagle Creek—which also would dry up the wetlands with rare plants, protected in the nearby Savage Fen state Scientific and Natural Area.

The same Barr study says base flows in the Credit River could drop by up to 95%, and baseflows in the Vermillion River could drop by up to 38%. The study is online here:

<https://www.scottcountymn.gov/458/Groundwater-Impact-Analysis>

The Vermillion is classified as a trout stream from Lakeville to Hastings. The river is considered one of the best urban trout streams in the country. The state has spent millions of dollars to buy land for AMAs along the river and do stream restoration projects.

So even though Barr Engineering, the top-notch groundwater-modeling firm in Minnesota, using the best science available, predicts city pumping will damage these groundwater-dependent, fragile ecosystems, the DNR can't tell cities to reduce their pumping.

Please pass HF1680/SF2703 to give the DNR full power to protect our lakes and streams.

One more thing: Please stop a competing bill, that will thwart you if you pass HF1689/SF2703.

HF2304/SF2047 would stop the DNR from using its full powers to protect White Bear Lake.

Under the bill, the DNR can't tell cities around White Bear Lake to reduce their groundwater pumping until 2027, except in an emergency. The bill applies to Lake Elmo and any other city with wells within five miles of White Bear Lake.

When White Bear's water levels drastically dropped in a drought, a lawsuit accused the DNR of letting cities pump out too much water through their city wells.

Please let the bill die. Thank you.

Sincerely,

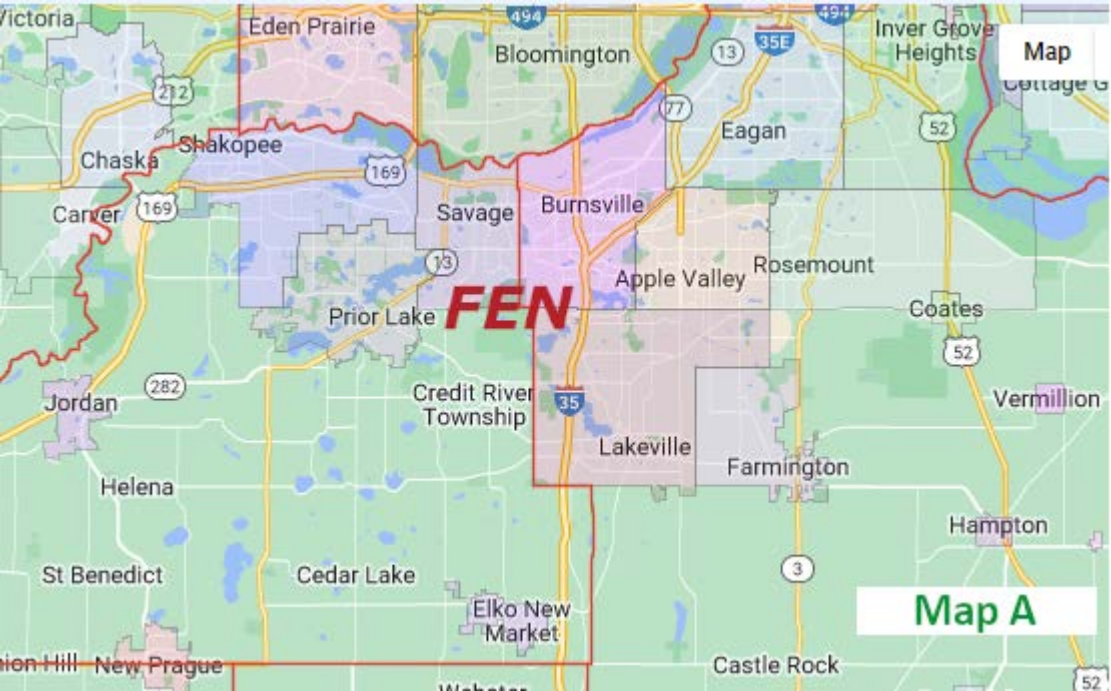
Daniel P. Callahan

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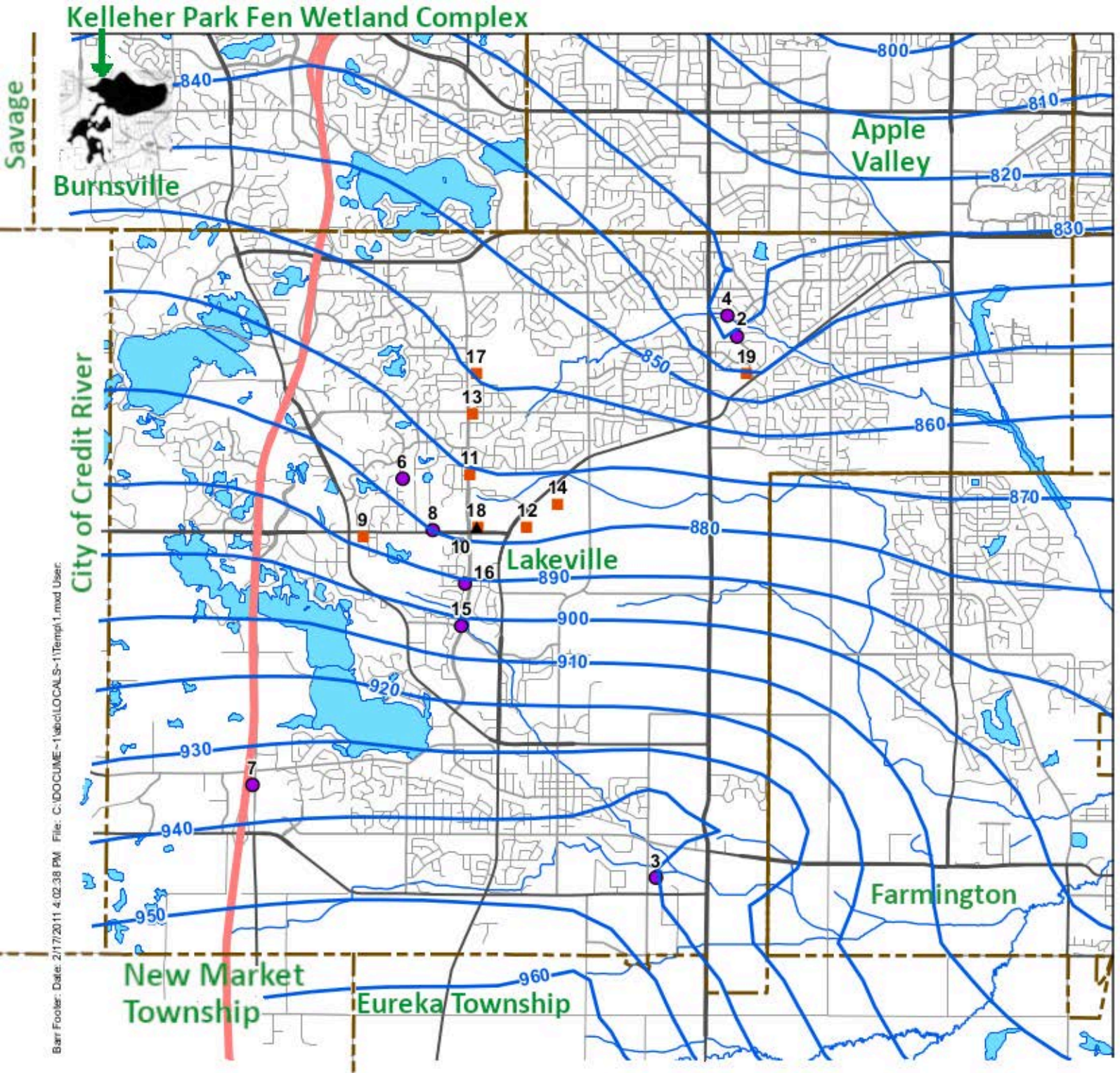
(651) 238-2111

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Map

Map A



Map B

Municipal Wells

- ▲ Tunnel City Group - Wonewoc Sandstone
- Jordan Sandstone
- Prairie du Chien Group - Jordan Sandstone
- Groundwater Contour (feet, MSL)
- Municipality



Miles

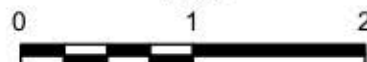
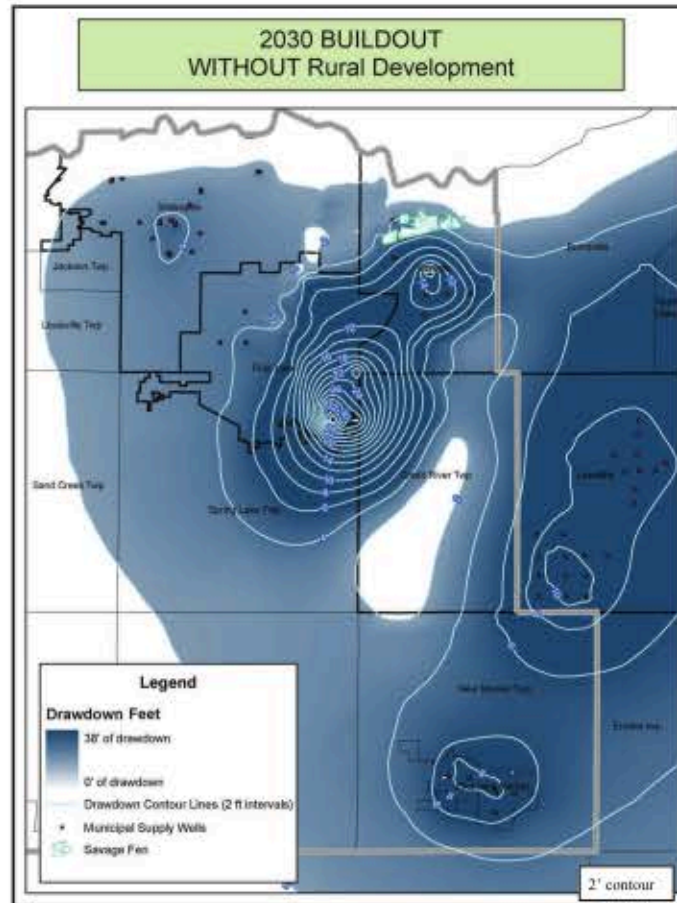


Figure 4

Groundwater Contours
Prairie du Chein Group
WHPP Amendment
City of Lakeville
Dakota County, MN

ESTIMATED GROUNDWATER DRAWDOWN IN THE PRAIRE DU CHIEN AQUIFER UNDER AVERAGE PUMPING CONDITIONS

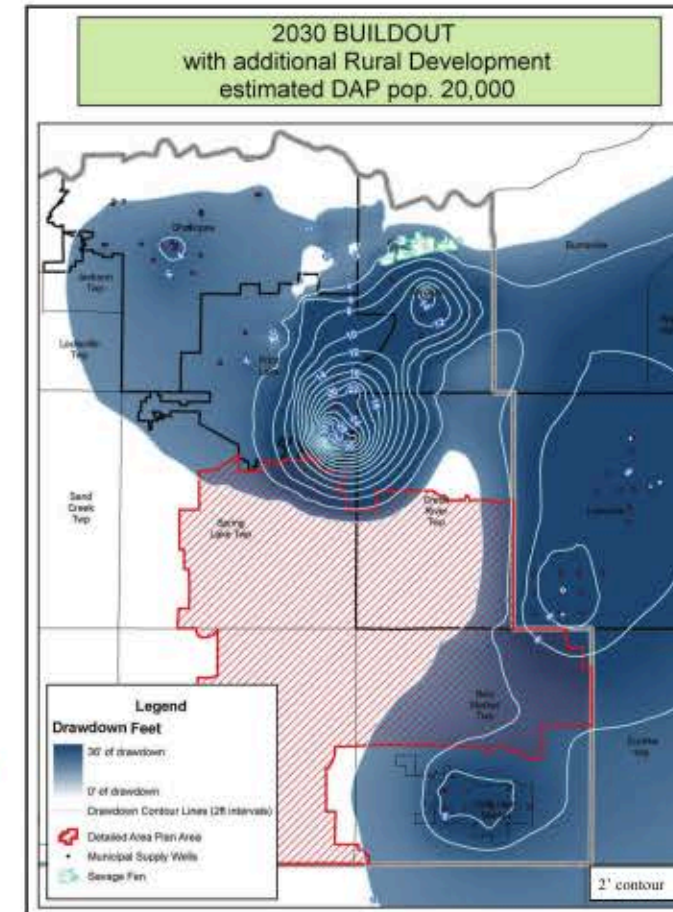


2030 BUILDOUT WITHOUT ADDITIONAL RURAL DEVELOPMENT DENSITY

- This scenario assumes continuation of 2.5 to 10 acre lot development and land in farm production
- Model includes surrounding cities population and land use at 2030
- Results in a maximum drawdown of 38 feet in the Prairie du Chien Aquifer
- Results in a 42% reduction in the Credit River Base Flow
- Results in a 19% reduction in the Vermillion River Base Flow
- Results in a 4.3 foot drawdown in the Savage Fen
- Existing large lots (1 per 10 acre) would not significantly disrupt existing agricultural drainage systems

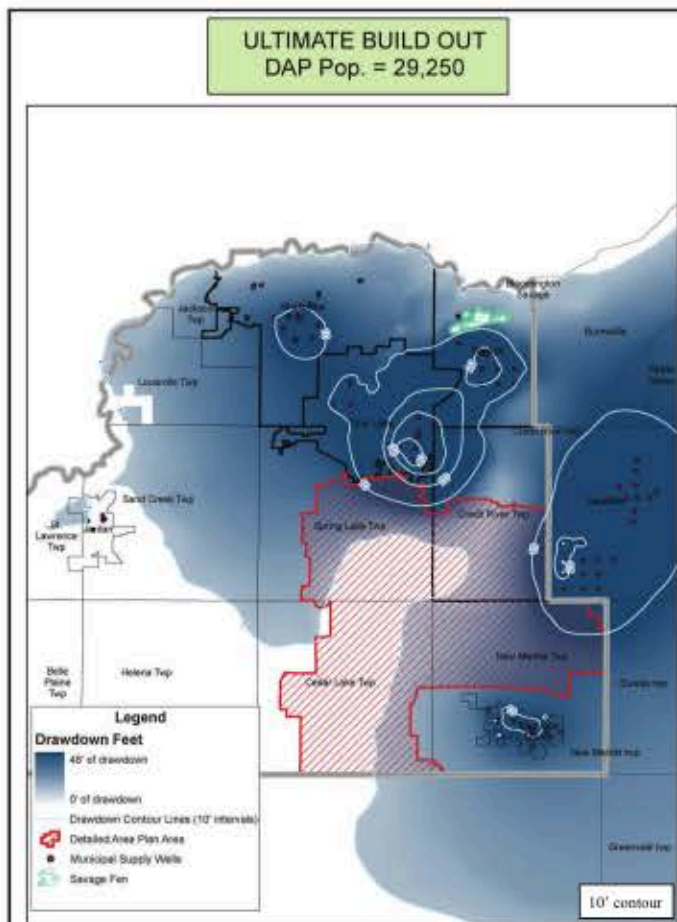
Map C

Excerpted from "Impacts to Groundwater Supply from Development of the Detailed Area Plan Study Area" prepared by Barr Engineering for Scott County, February 2009.



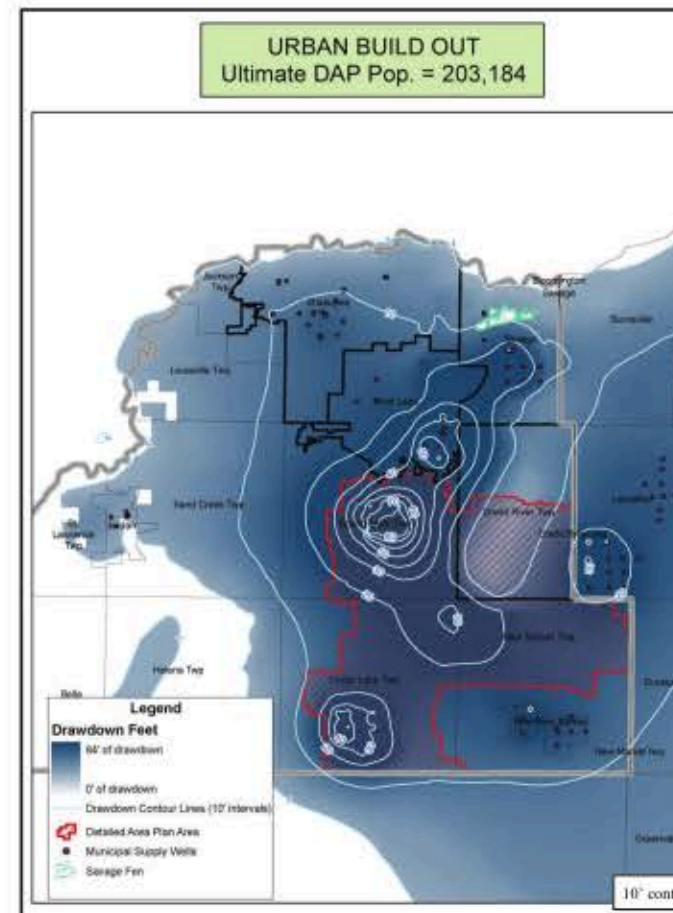
2030 BUILDOUT WITH ADDITIONAL RURAL DEVELOPMENT DENSITY

- This scenario assumes 2.5 acre lots with development in Spring Lake, New Market, and Credit River Township in the DAP area (estimated pop. 20,000)
- Model includes surrounding cities population and land use at 2030
- Model includes recharge from septic systems and stormwater basins. It was determined that under rural conditions additional recharge from stormwater basins was negligible
- Results in a maximum drawdown of 36 feet in the Prairie du Chien Aquifer
- Results in a 26% reduction in the Credit River Base Flow
- Results in a 17% reduction in the Vermillion Base Flow
- Results in a 4.2 foot drawdown in the Savage Fen
- Rural Development Density in the DAP area will increase recharge by 1.6 inches. The recharge is due to reduced runoff and infiltration beyond the root zone.



ULTIMATE BUILDOUT WITH ADDITIONAL RURAL DEVELOPMENT DENSITY

- This scenario assumes 2.5 acre lots and the DAP area is fully developed (estimated pop. 29,250)
- Model includes surrounding cities population and land use at 2030
- Results in a maximum drawdown of 48 feet in the Prairie du Chien Aquifer
- Results in a 55% reduction in the Credit River Base Flow
- Results in a 29% reduction in the Vermillion River Base Flow
- Results in a 6.6 foot drawdown in the Savage Fen



ULTIMATE BUILDOUT WITH URBAN DEVELOPMENT DENSITY

- This scenario assumes 80% residential (3 units per acre) and 20% commercial/industrial land use (estimated pop. 203,184)
- Results in a maximum drawdown of 84 feet in the Prairie du Chien Aquifer
- Results in a 95% reduction in the Credit River Base Flow
- Results in a 38% reduction in the Vermillion River Base Flow
- Results in a 9.2 foot drawdown in the Savage Fen
- This scenario created the greatest drawdown of all the scenarios, due to increased population and reduced recharge.
- In this scenario homes are connected to municipal sewer and the additional recharge from septic systems is lost

SUMMARY OF IMPACTS AND MITIGATION MEASURES

The anticipated environmental impacts of the alternatives are summarized below.

Physical Impacts on Water Resources

Savage Fen

Assuming that lowering the hydraulic head in either the water table or Prairie du Chien-Jordan aquifer will result in adverse impacts to the Savage Fen wetland complex, the model results predict that the impact of new Prairie du Chien-Jordan municipal water supplies in the City of Savage would have an adverse impact on the wetland complex than development within the AUAR study area. The groundwater modeling results indicate that hydraulic (piezometric) head conditions in the vicinity of the Savage Fen Wetland Complex are relatively insensitive to changes in recharge rates within the City limits of Savage. This is not surprising because regional groundwater flow conditions appear to be the most important factor controlling hydraulic heads in the fen area.

The model results also suggest that the development of new drift or Prairie du Chien-Jordan municipal water supply wells in communities neighboring the City of Savage could have an adverse impact on the fen wetland complex. Thus, this is a regional issue, and fen protection will require multi-jurisdictional cooperation.

A joint Scott County-City of Savage project for the proposed alignment of CSAH 27 from TH 101 to CSAH 16 (on top of the bluff) would likely impact the wetland complex but would avoid the calcareous fen portions of the complex. None of the City of Savage's other proposed projects will be located within the wetland complex.

Eagle Creek and Boiling Springs

Impacts of Development on Surface Water Runoff to Eagle Creek

On an average annual basis, the four sites mentioned along Eagle Creek would have slightly higher discharges for both Land Use Scenarios compared with existing conditions. Storm water in Eagle Creek at Sites 3 and 4 would be approximately the same as existing conditions. The largest effect on flows would occur if Drainage Option 2 were selected. Average flows in the stream would be decreased approximately 10 percent

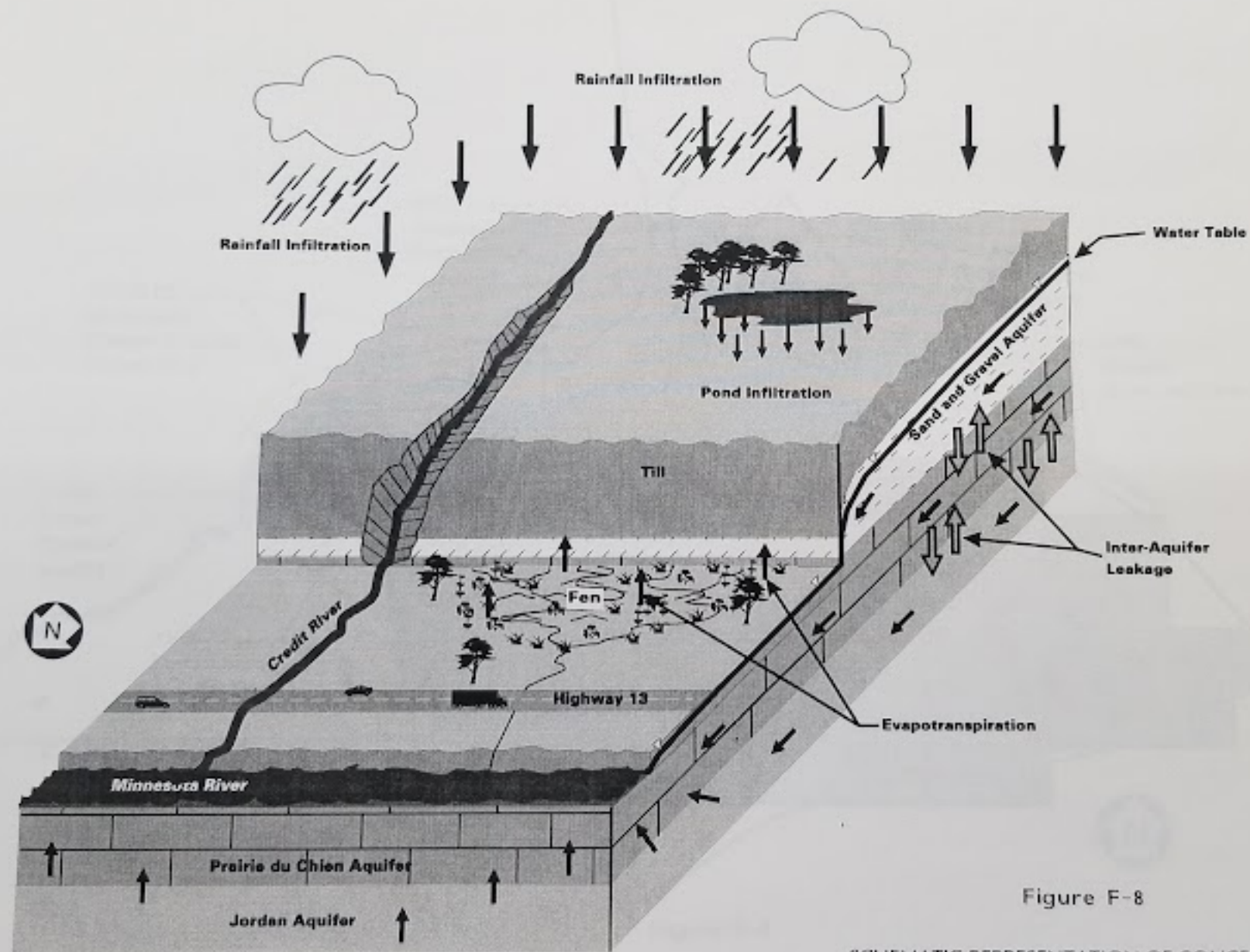


Figure F-8

SCHEMATIC REPRESENTATION OF CONCEPTUAL
GROUNDWATER MODEL

Rep. Hansen,

I'm concerned there is no language in HF1680 that would protect Boiling Springs, also known as Maka Yusota, an indigenous sacred site on Eagle Creek in Savage, if excessive groundwater pumping diminishes the characteristic noisy groundwater eruptions that are its namesake.

Maka Yusota is revered by the Dakotah, and is on the National Register of Historic Places.

Could you amend the following section of HF1680, to add the text in red?

Subd. 13b.

Negative impact to surface waters.

"Negative impact to surface waters"

means a change in hydrology sufficient to cause aquatic ecosystem harm, ~~or~~ alter riparian
uses long term, **or diminish the defining characteristics of aquatic features on the National**
Register of Historic Places.

Perhaps there is better language that would help.

Let me know. Thanks.

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