LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, March 16, 2022

Agenda Item
Item 6. F. – 2022 Legislative Action

Prepared By
Linda Loomis, Administrator

Summary.
The LMRWD approached Senator Julia Coleman from Chanhassen about carrying legislation for Area #3. Senator Coleman said she would be happy to co-author, however, she suggested that the LMRWD approach Senator Cwodzinski about becoming the chief author, since Area#3 is within his District (48). A meeting with Senator Cwodzinski is scheduled for March 16th. An informational piece about the project to assist with education of legislators is attached.

The legislation titled "Salt Applicators; Voluntary Certification Program", which allows for limited liability, also called the "Smart Salting Bill" has had committee hearings in both the House and Senate. It has been passed through first committee hearings. The House bill is HF 2908. This bill was adopted and re-referred to the Environmental and Natural Resource Finance and Policy Committee, because it was amended by the Judiciary Finance and Civil Law Committee. The Senate bill is SF 2768. This bill was amended and adopted by the Environment and Natural Resources Policy and Legacy Finance Committee. The bill was re-referred to the Environment and Natural Resources Finance Committee, which adopted the amended bill and referred the bill to the Civil Law and Data Practices Policy Committee. An informational piece prepared by the MN Center for Environmental Advocacy is attached.

Another bill the LMRWD may be interested in is:

SF1707/HF1700 Carver levee restoration bond issue and appropriation – Request $9,000,000 for capital improvements to restore the Carver levee protecting an important historic district in Minnesota from flood waters of the Minnesota River. This levee restoration must meet the requirements for FEMA certification.

Attachments
Eden Prairie Area #3 Information
How Does Chloride Affect Minnesota's Lakes?

Recommended Action
No action recommended – for information only

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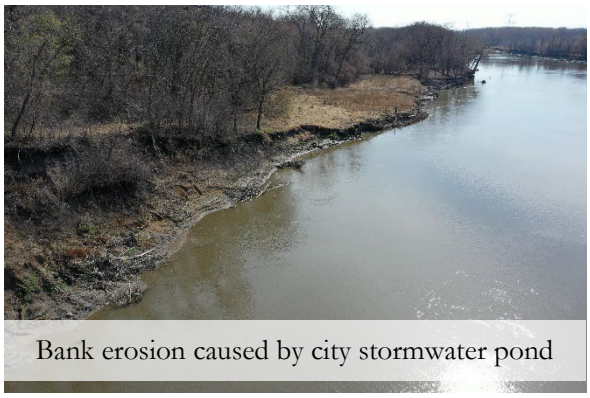
EDEN PRAIRIE AREA 3

Located on the north bank of the Minnesota River, this area has been prone to erosion for some time. The Lower Minnesota River Watershed District, in partnership with the City of Eden Prairie, has evaluated options to stabilize the slope, protect public and private infrastructure, and prevent future degradation of the Minnesota River water quality resulting from Area 3 bank erosion.

PROBLEM



Bank erosion caused by city stormwater pond

- The underlying soils and groundwater seeps, combined with bluff development and erosive flows from the Minnesota River, have destabilized the slope and resulted in continual erosion since at least 2008.
- Using inclinometers, the Lower Minnesota River Watershed District (LMRWD) has monitored slope movements since 2010. However, geotechnical engineers have warned the LMRWD that due to the nature of the soils in Area 3, the slope is more likely to catastrophically fail without advanced warning.
- The City of Eden Prairie has a stormwater pond just downstream of Area 3 that is acerbating the natural erosion processes of the river on the slope, causing further instability.
- This is a larger, more complex problem than either the LMRWD or the City can tackle alone.

SOLUTION

1. Remove the city stormwater pond, capture city stormwater currently being directed to the pond, and convey it to the Minnesota River in a less erosive and bank-destructive manner.
2. Armor the bluff toe and flatten the slope as needed to protect the slope from the Minnesota River.

REQUEST

- To complete the construction, the estimated cost is $4.6M.

For more information, contact Linda Loomis, LMRWD Administrator
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THE PROBLEM

Where does the salt go?

- Minnesota uses approximately 400,000 tons of salt on its roads each year (CBS 2019)
- There is no current widespread way to remove chloride - it is a permanent pollutant to freshwater sources including our lakes, rivers, and wetlands
- 1tsp salt pollutes 5 gallons of water permanently
- "In extreme cases, salinization can generate density gradients within the lake water column that prevent vertical mixing. Permanent stratification can result in anoxia and internal nutrient and metal resuspension, which decreases lake habitability and water quality" (PNAS 2017)
- The natural process of seasonal lake mixing in Minnesota's freshwater lakes may be threatened or impacted due to the increased input of salt (Lake Champlain Basin Program 2008)
- With a changing climate including warming temps and increased precipitation, the salinization of our freshwater systems may increase and may inhibit the natural process of lake mixing. As a result, freshwater sources, including fish habitat, will be severely impacted.

BACKGROUND

Lake Mixing: Freshwater lakes naturally stratify each season, usually based on density and temperature. In the fall, the warmer, and less dense water at the upper regions begins to cool. This causes the density shift, and the upper region begins to "mix" with the lower regions. This is an important ecological event because it allows for distribution of oxygen and nutrients throughout the freshwater system. (Pelican Lake MN) (EPA fact sheet)

"Thermal stratification is the most important physical event in a lake's annual cycle and is a direct result of heating by the sun" (USGS 1989)

MINNESOTA'S FRESHWATER SOURCES DESERVE PROTECTION

Action Items:

- Reduce and mitigate chloride pollution in our lakes by reducing the use of salt on roadways, reducing salty discharges from wastewater treatment plants, and mitigate impacts from water softeners and other commercial chloride products
- Educate the public and land managers through Smart Salting trainings and the Stop Over Salting campaign
- Mitigation efforts may also include the implementation of raingardens throughout urban areas to reduce the amount of impervious surface cover and runoff during storm events

SOURCES

https://www.researchgate.net/publication/273022422_Road_Salt_Impact_on_Lake_Stratification_and_Water_Quality

https://commons.emich.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1456&context=honors

https://www.pnas.org/content/114/17/4453#:~:text=Elevated%20chloride%20concentrations%20in%20lakes%20can%20alter%20the%20composition%20and,%E2%87%93%E2%80%9312%2C%2035).&text=In%20extreme%20cases%2C%20salinization%20can,column%20that%20prevent%20vertical%20mixing.

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