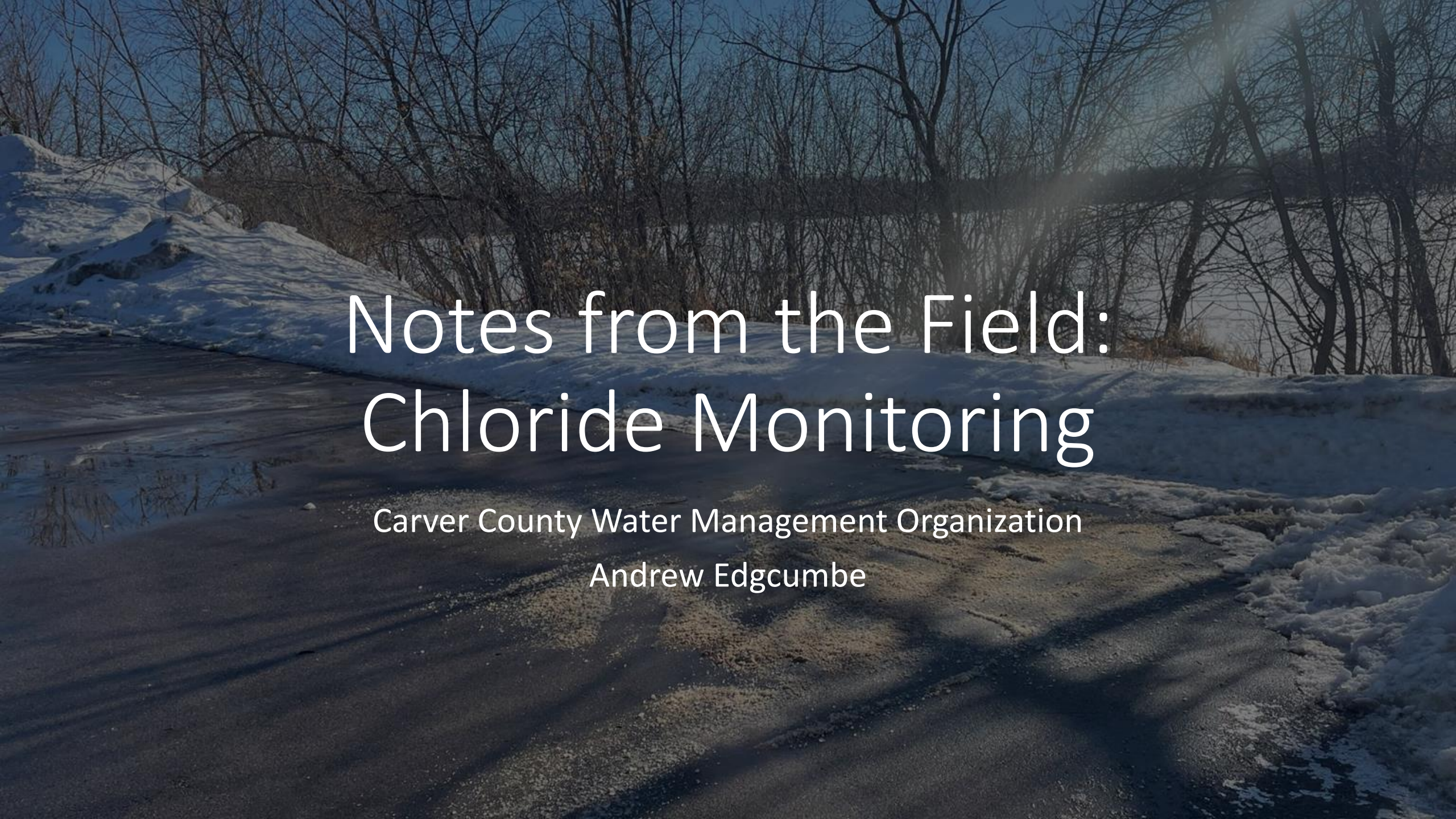


Notes from the Field: Chloride Monitoring

Carver County Water Management Organization

Andrew Edgcumbe

Presentation Overview

- Informational item only
- No committee action required

Chloride

- Chloride compounds (salts) are natural in our environment

- To much salt in freshwater streams and lakes can:
  - Be toxic to freshwater organisms
  - Prevent lake turnover (permenant stratification)
  - Cause infrastructure damage

- Standards
  - MN Standard: 230 mg/L chronic toxicity (one teaspoon NaCl in 5-gallons of water)
  - Canada Standard: 120 mg/L

- 78% of applied chloride remain in the environment

2022-2023 Versus 2023-2024

Last Winter

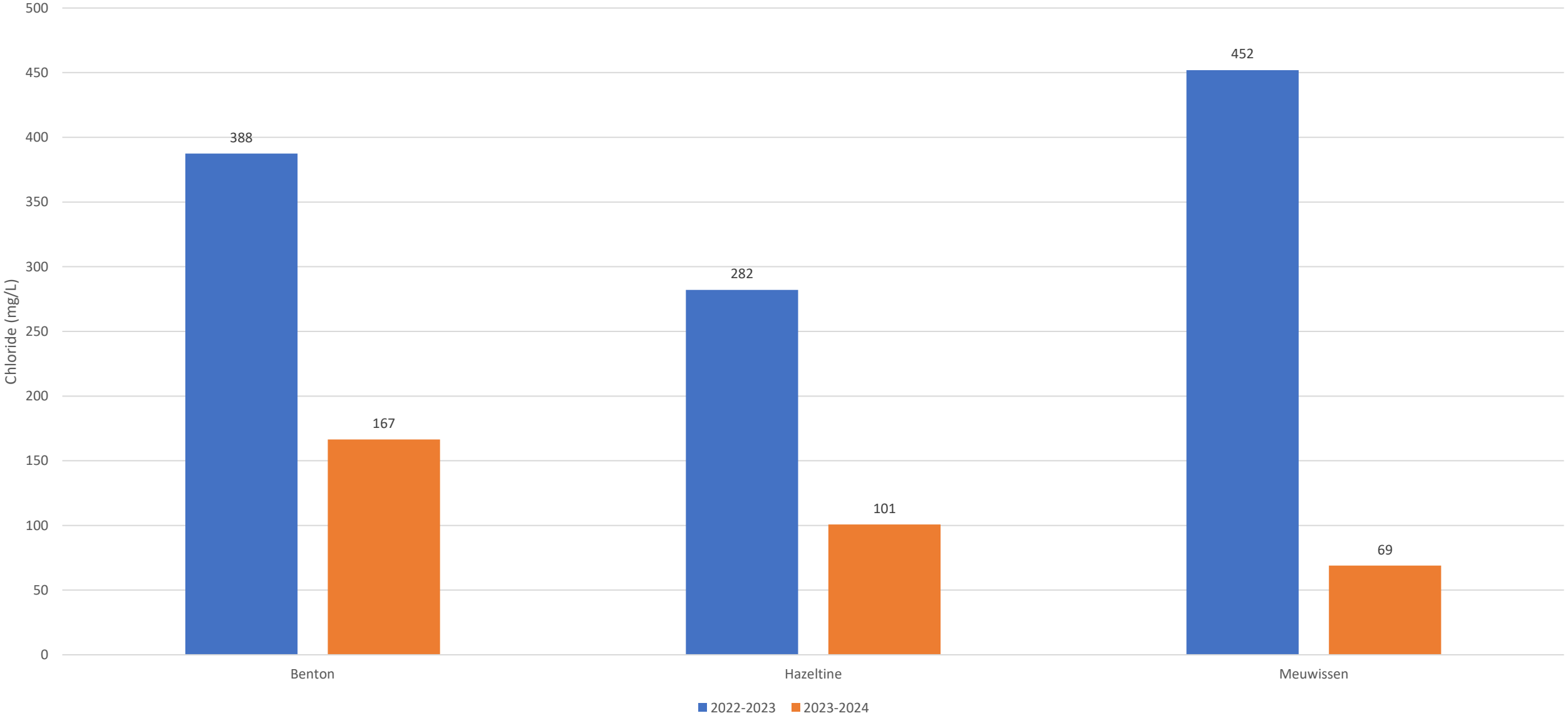
- Lots of Snow
- Normal winter temps
- Sufficient ice
  - Sampled in the middle of lake

This Winter

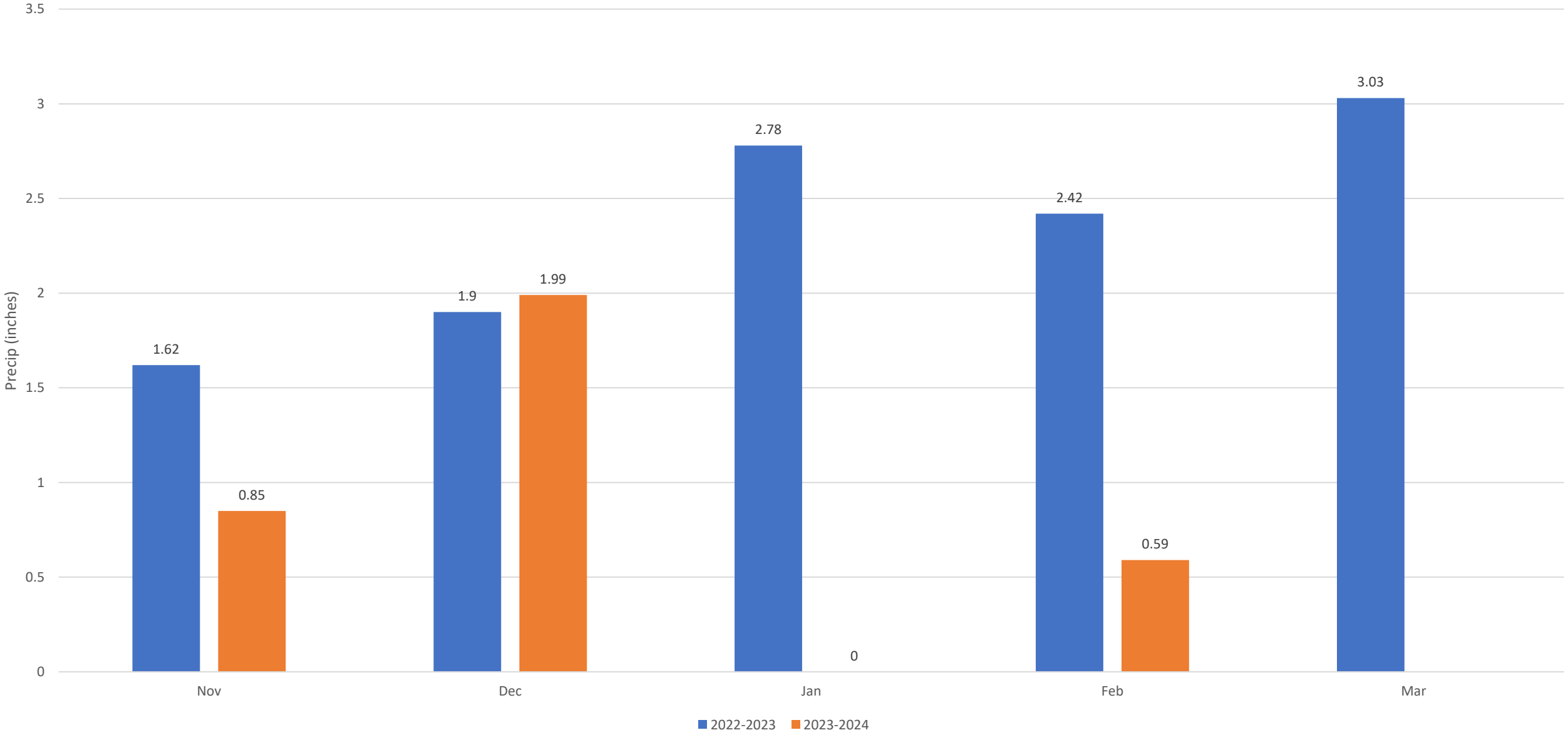
- Lower snow totals
- Higher winter temps
- Unsafe ice
  - Sampled at lake outlets

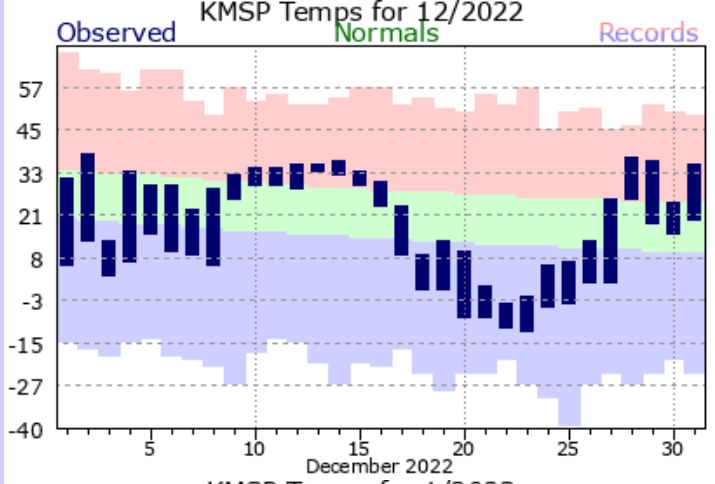

2024 Monitoring Locations
• Benton
• Hazeltine
• Meuwissen
• All impaired for chloride in 2023
• First time lakes were impaired for chloride

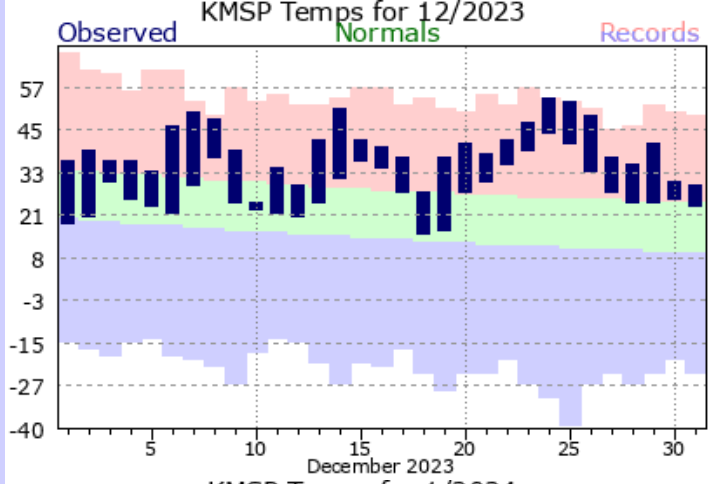
Winter Chloride Average



Winter Precipitation




KMSP Temps for 12/2022
Observed
Normals
Records
57
45
33
21
8
-3
-15
-27
-40
5
10
15
20
25
30
December 2022


KMSP Temps for 12/2023
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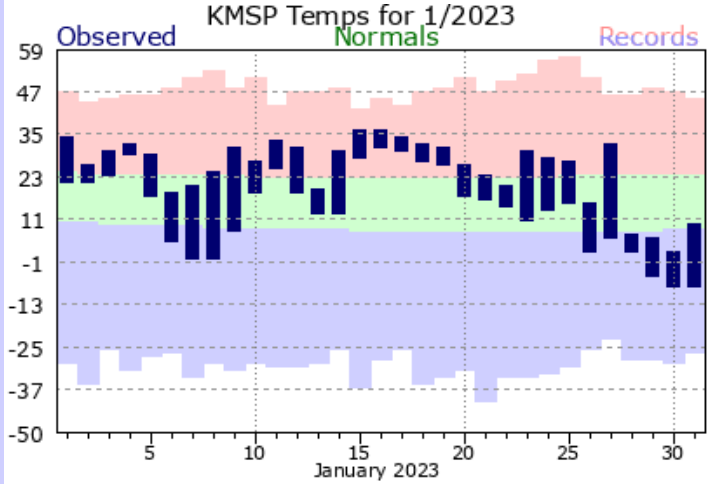
December 2023


KMSP Temps for 1/2023
Observed
Normals
Records
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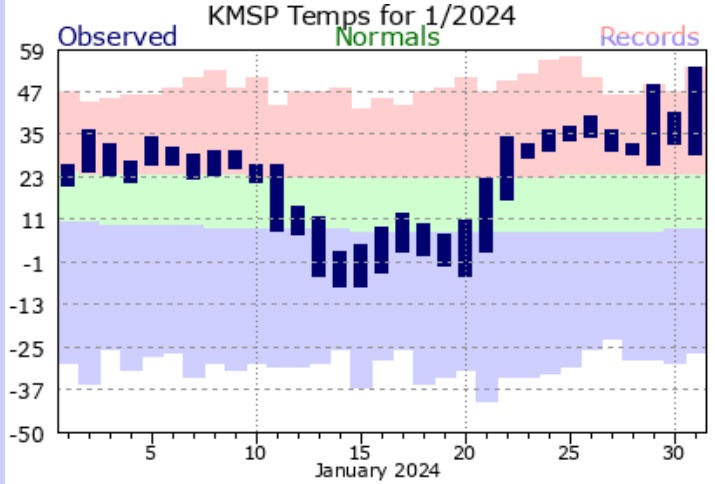
January 2023


KMSP Temps for 1/2024
Observed
Normals
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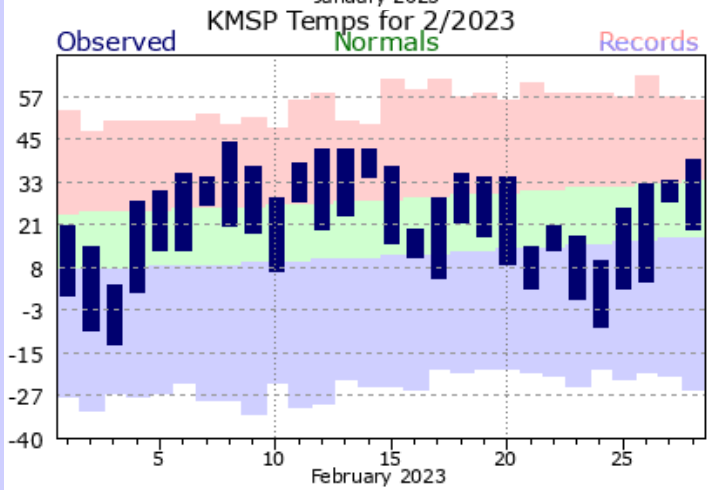
January 2024


KMSP Temps for 2/2023
Observed
Normals
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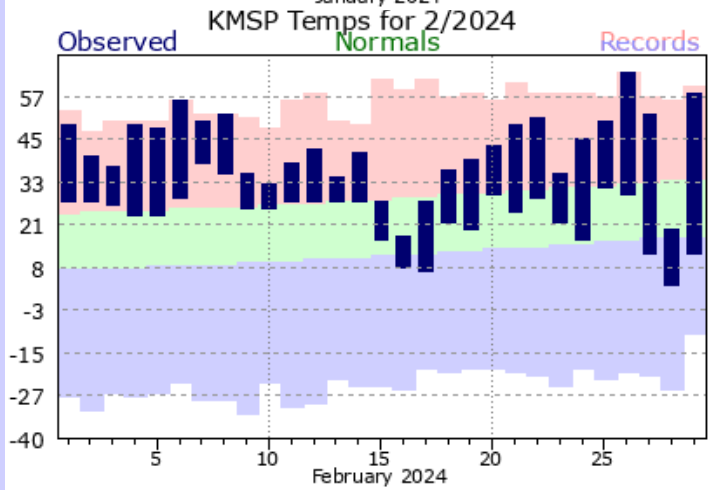
February 2023


KMSP Temps for 2/2024
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Normals
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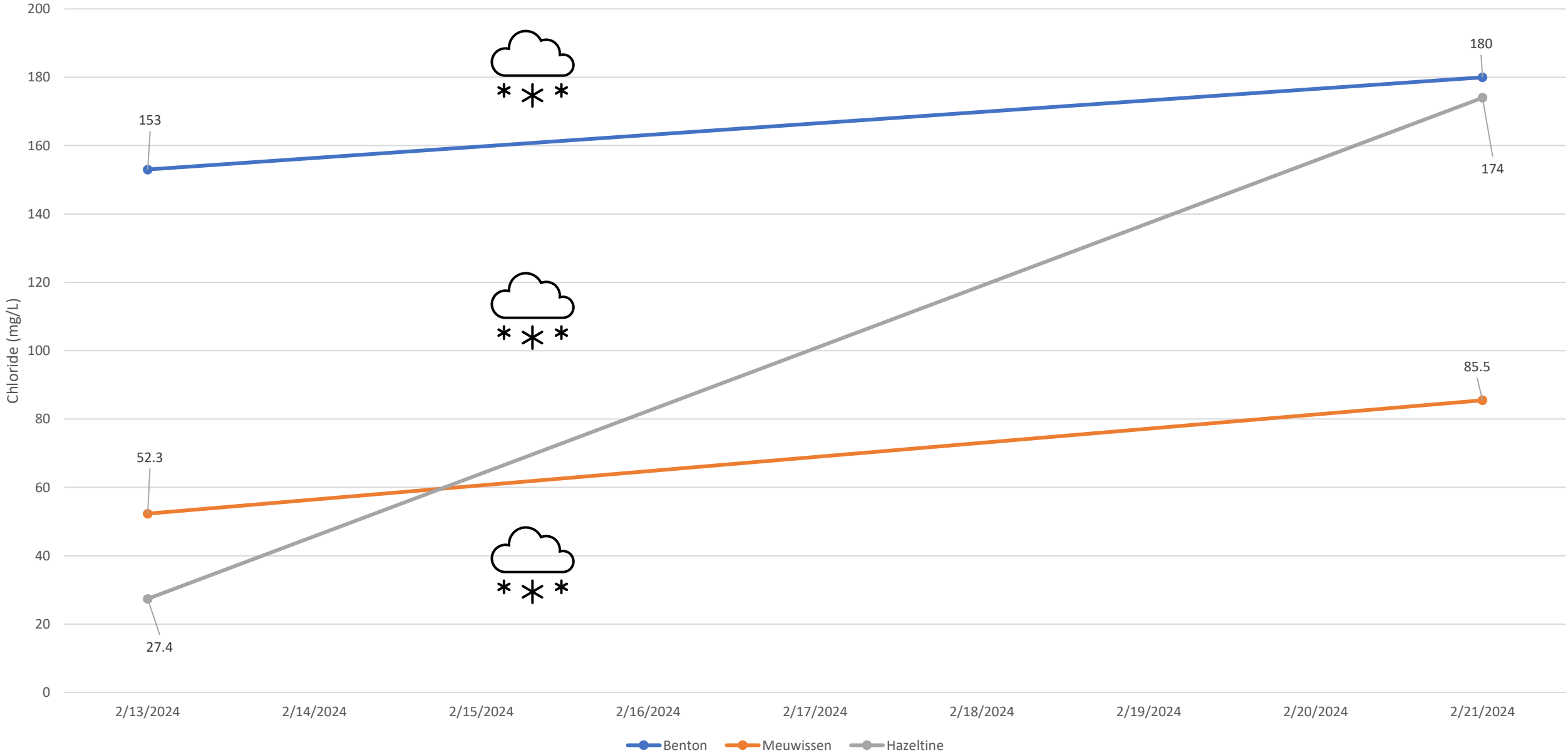
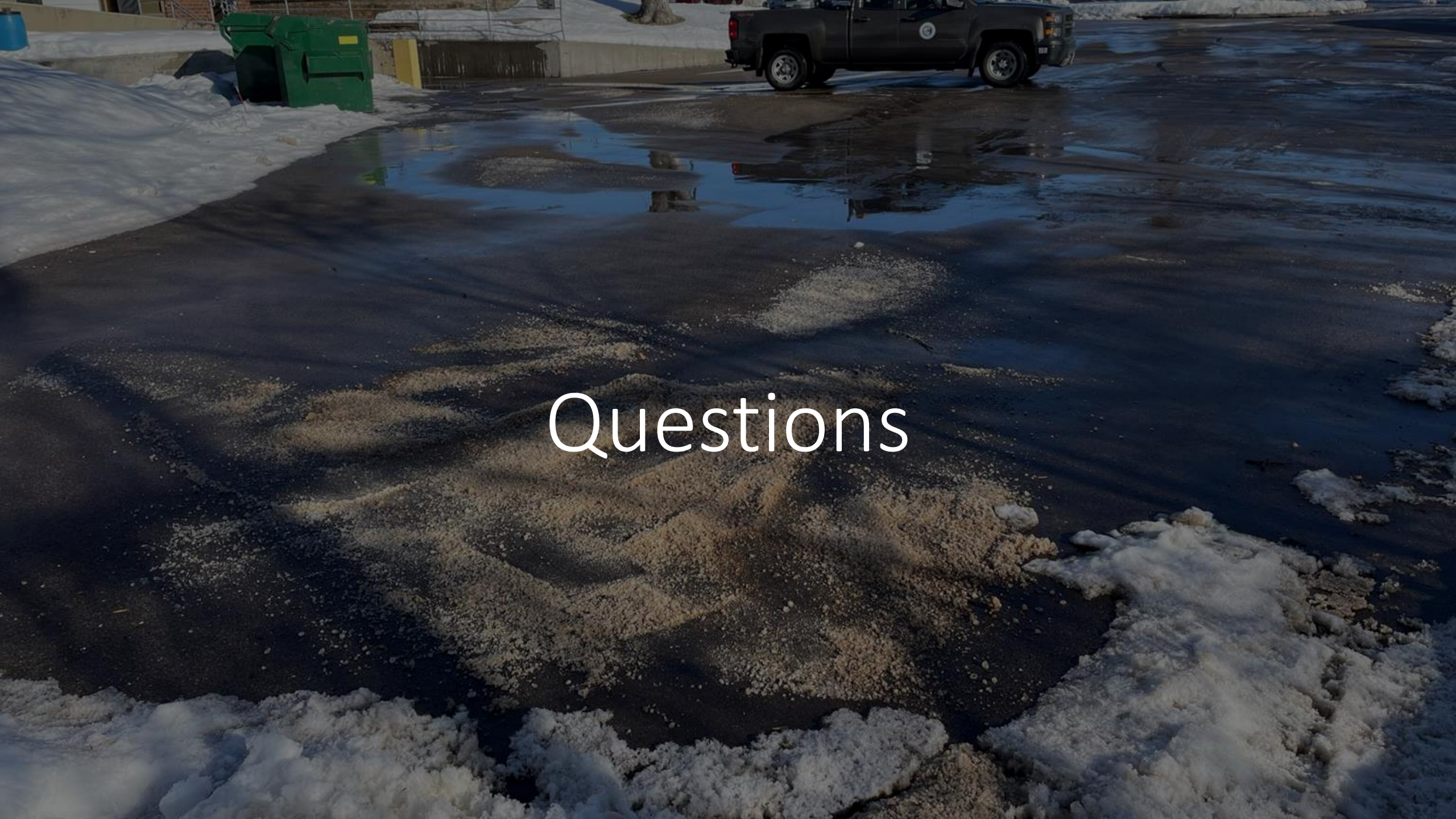
February 2024

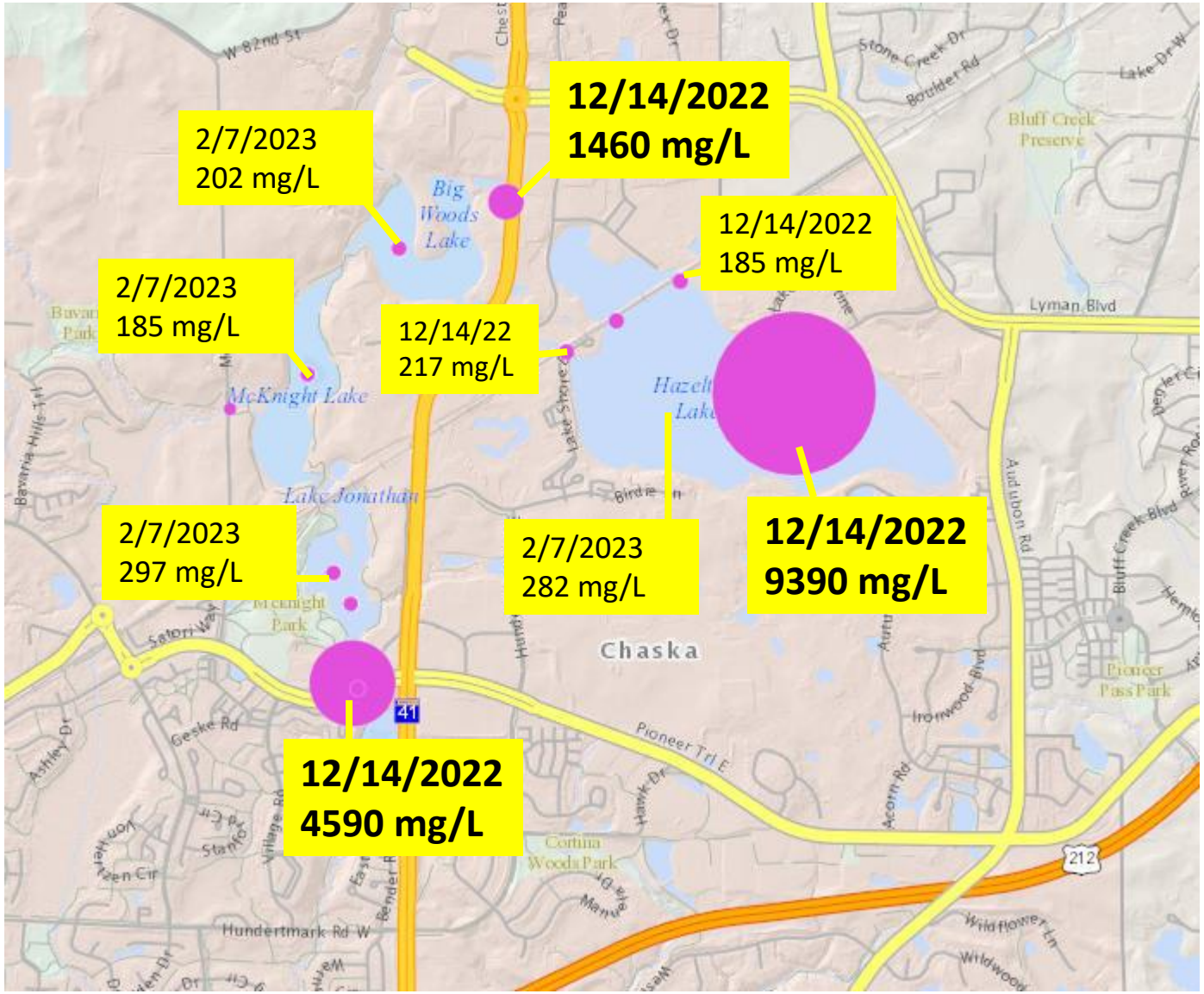
2024 Chloride





Questions

Expanded monitoring to identify source areas



Next Steps

- Cologne Water Softener Rebate Program (pilot)
- Business Education Packet
- IWLA Salt Watch Program
- Targeted outreach for identified source areas
- Host MPCA Smart Salt trainings
- City comparison of Waconia and Chaska
- More events and public outreach!!