

# Stearns County Ditch 28

- Overview of potential projects and their impact to property owners
- August 14, 2020
- Chad Martini, Land Services Manager
- Stearns County Division of Property Services



# Why this presentation is important to you

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The purpose of this presentation is to make property owners aware of potential projects related to Stearns County Ditch 28 which could have potential impacts to current and future participants in the drainage system.



There is a possibility that the number of property owners who participate in the ditch will expand.



The Stearns County Board of Commissioners acting as the County Ditch 28 Drainage Authority will ultimately decide what projects are or not approved.

A stylized sun graphic on the left side of the slide. It features a solid yellow circle at the bottom left, with several short, curved yellow lines above it representing sunbeams. The background is a solid orange color, and a large white semi-circle is positioned on the right side, framing the text.

All costs for projects will be  
assessed to property  
owners in the form of  
special tax assessments

Presentation goal is to educate property owners so you can make a decision about your thoughts on approving the cost of an engineer's repair report for County Ditch 28

Approval of the Engineering Report could  
lead to additional projects

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# What is a legal drainage system?

- Established by property owner petition
- Most are very old (early 1900's)
- Purpose was to drain land for agricultural purposes
- Once established, Ditch Viewers determined which properties participated in the system
- Any costs for maintaining a drainage system are paid by those participating property owners through special tax assessments

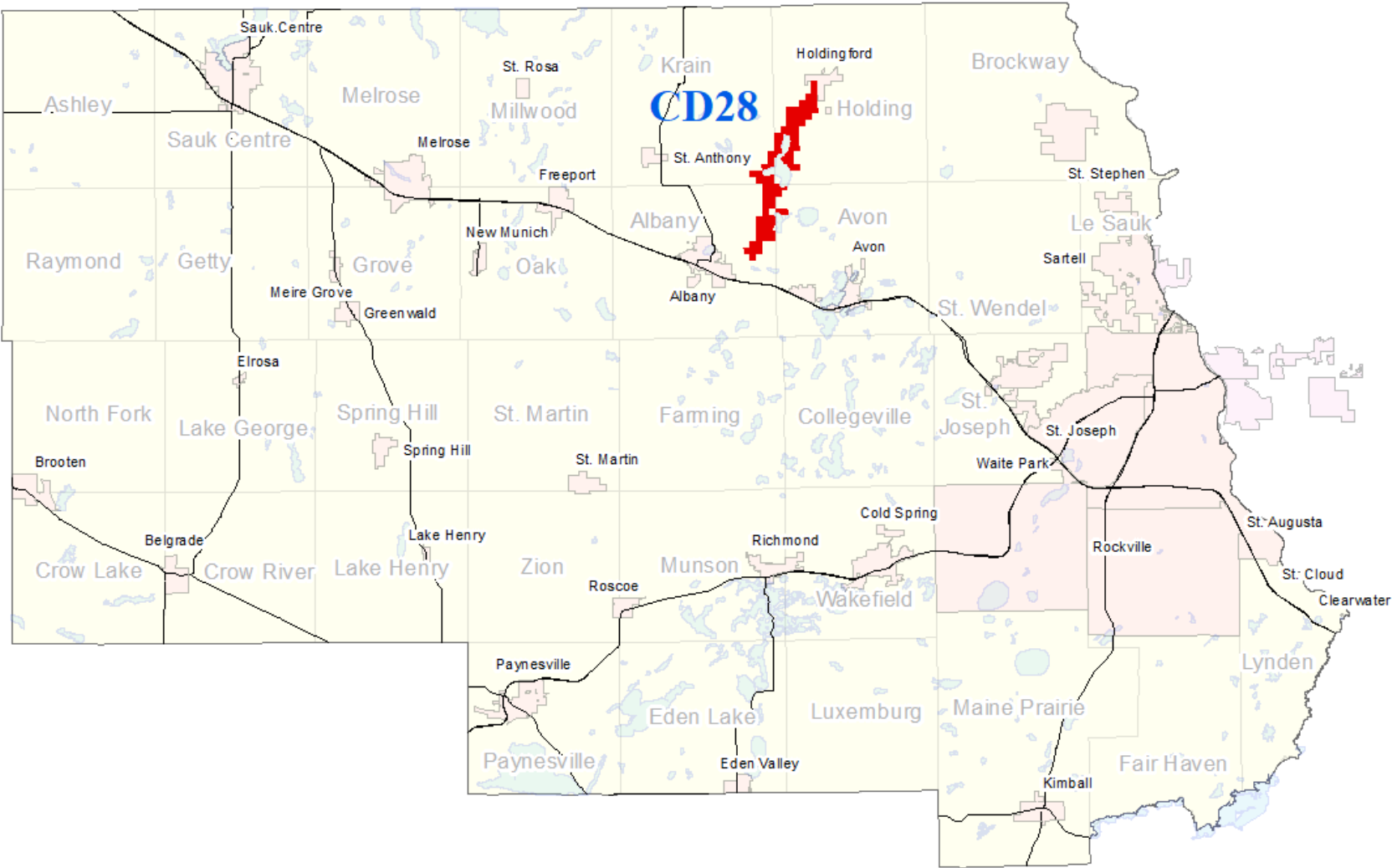
# What is a ditch repair?

- By law, a ditch repair means digging can only match what was originally constructed or subsequently improved
- The ditch cannot be excavated wider or deeper than originally constructed
- Stearns County has no authority to work in water beyond the limits of the legally established ditch.

Stearns County Ditch 28 runs 7.8 miles and begins at Quaker Rd in Albany township flowing north to Co Rd 17 in Holdingford. The ditch is split by Two Rivers Lake.

County Ditch 28 was legally established as a drainage system in 1906 by petition of property owners.

The Stearns County Board of Commissioners acting as the County Ditch 28 Drainage Authority have a legal responsibility to maintain the ditch.

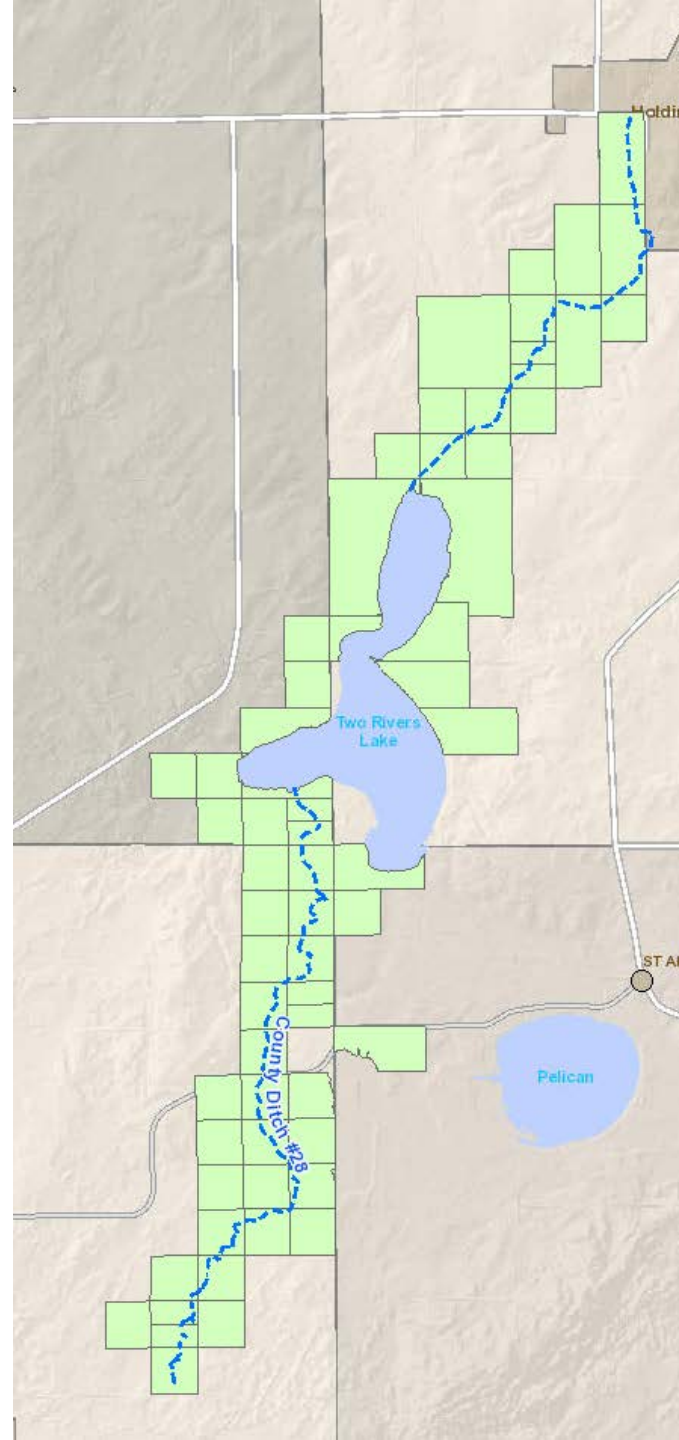


The ditch benefit represents the property that was determined to participate in ditch system.

It is these properties that are responsible for all costs incurred by County Ditch 28.

Individual property cost share is determined during the redetermination process by Ditch Viewers. The costs are not split equally across all properties.

Example costs may be removing beaver dams, inspection, or repairs to the system.



The green areas on this map show the current property making up the ditch benefit and it is those property owners who pay ditch costs through special assessments on their tax bills.



# How did we get here?

- At the direction of the Stearns County Board of Commissioners, staff was instructed to collect feedback about moving forward to the next step in potentially repairing County Ditch 28
- Consideration of moving forward was based on an Engineer's Inspection Report.
- November 17, 2020 Board of Commissioners meeting – decision regarding Engineering Repair Report.

# Inspection Report Summary

- Goal is to determine the condition of the ditch and map the effects of potential repair scenarios
- 3 scenarios modeled
  1. Current conditions
  2. Fish barrier removed
  3. Fish barrier and a full repair excavation from lake outlet to Holdingford
- The scenarios are based on 2, 10, and 100 year rain events

The results of analyzing these scenarios is shown below, in **Table 1**.

**Table 1: Maximum flood elevations at Two Rivers Lake (feet).**

Scenario	2-year*	10-year	100-year
<b>1: Existing Conditions</b>	1132.49	1134.40	1136.82
<b>2: Barrier Removed</b>	1131.95 <i>(-0.54)**</i>	1134.09 <i>(-0.31)</i>	1136.67 <i>(-0.15)</i>
<b>3: Full Repairs</b>	1131.66 <i>(-0.83)</i>	1133.94 <i>(-0.46)</i>	1136.58 <i>(-0.24)</i>

*\*All rainfalls modeled are 24-hour duration*

*\*\*Values in italic are reduction in peak water surface elevations relative to Existing Condition*

- The maximum peak reduction occurs during 2 year rain event
- The larger the rain event, the less impactful the results are.

# Conversion of FEET to INCHES

Scenario	2-year	10-year	100-year
<b>1: Existing Conditions</b>	1132.49 feet	1134.40 feet	1136.82 feet
<b>2: Barrier Removed</b>	1131.95 feet (-0.54 feet = -6.48 inches)	1134.09 feet (-0.31 feet = -3.72 inches)	1136.67 feet (-0.15 feet = -1.8 inches)
<b>3: Full Repairs</b>	1131.66 feet (-0.83 feet = -9.96 inches)	1133.94 feet (-0.46 feet = -5.52 inches)	1136.58 feet (-0.24 feet = -2.88 inches)

About 10 inches is the maximum benefit which can be achieved

6.48 inches by removing fish barrier (65%)

3.48 inches additional by performing repair (35%)

9.96 total Inches by removing fish barrier and performing repair (100%)

# Recommendations



Recommendation that the fish barrier be removed immediately because it realizes the most available reduction during peak



Recommendation that a Repair Report be completed

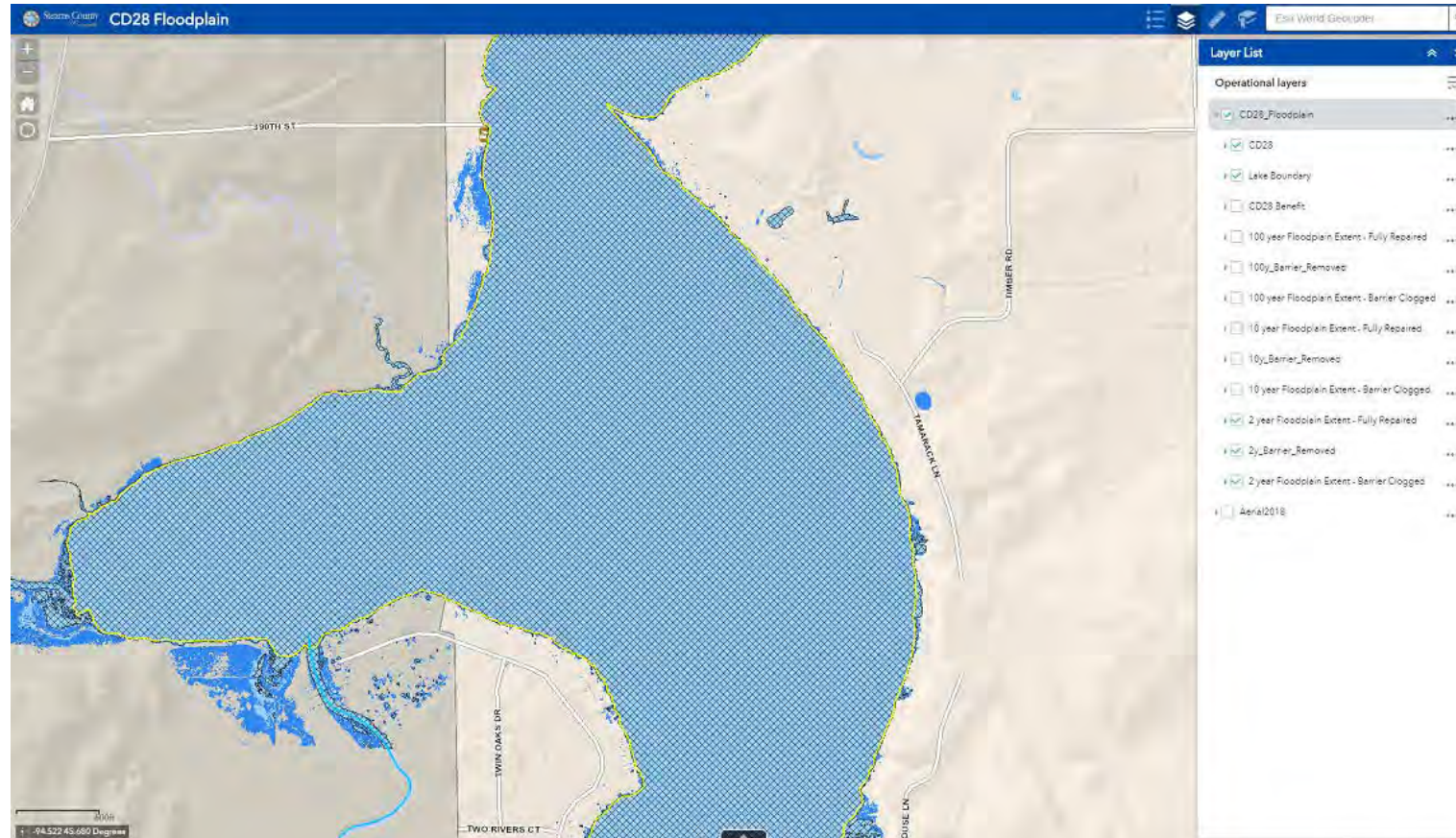


Performing a single repair is both functionally and financially more efficient



Recommendation that a redetermination of benefits be considered

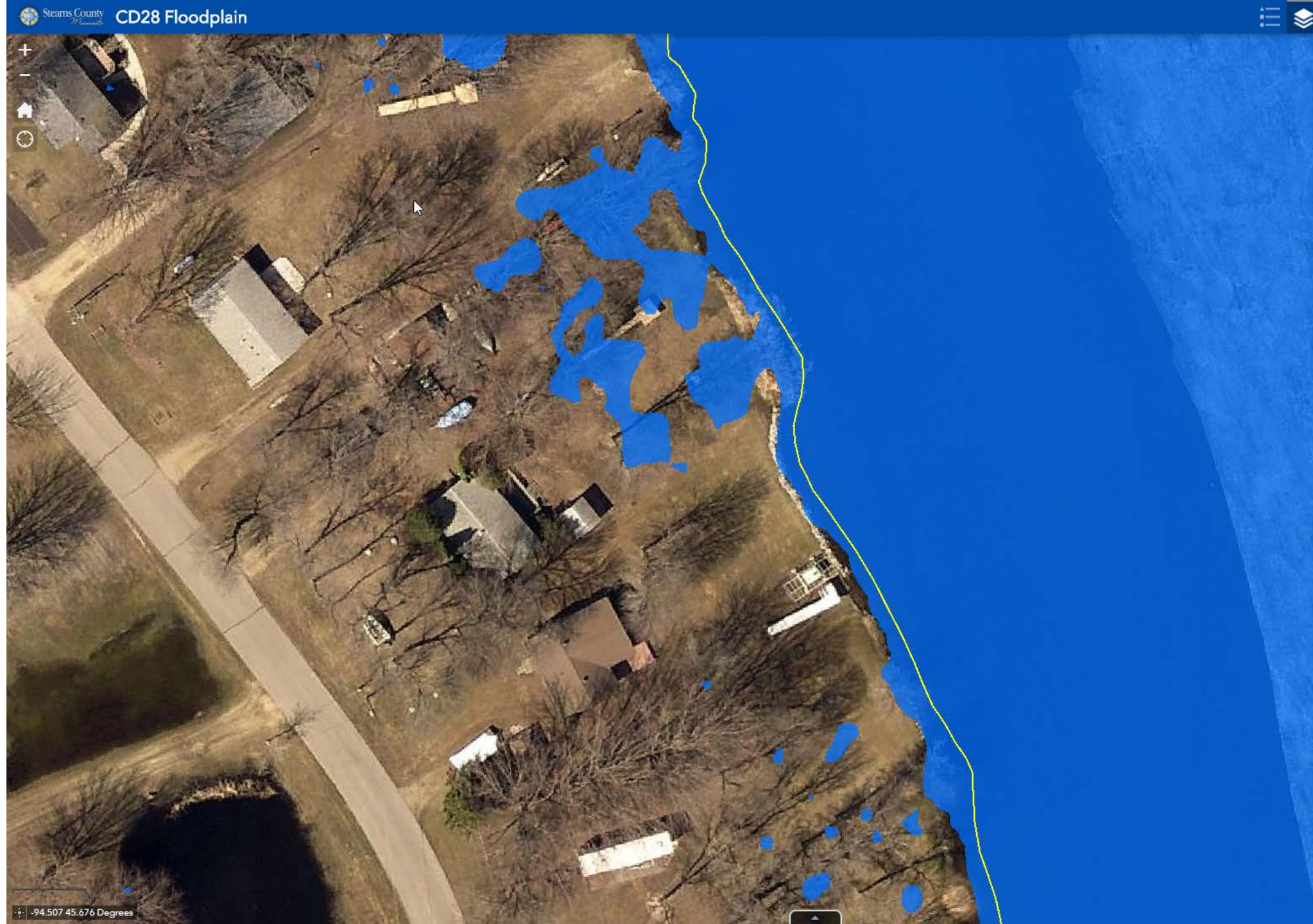
# GIS Mapping



<https://gis.co.stearns.mn.us/CD28Floodplain>

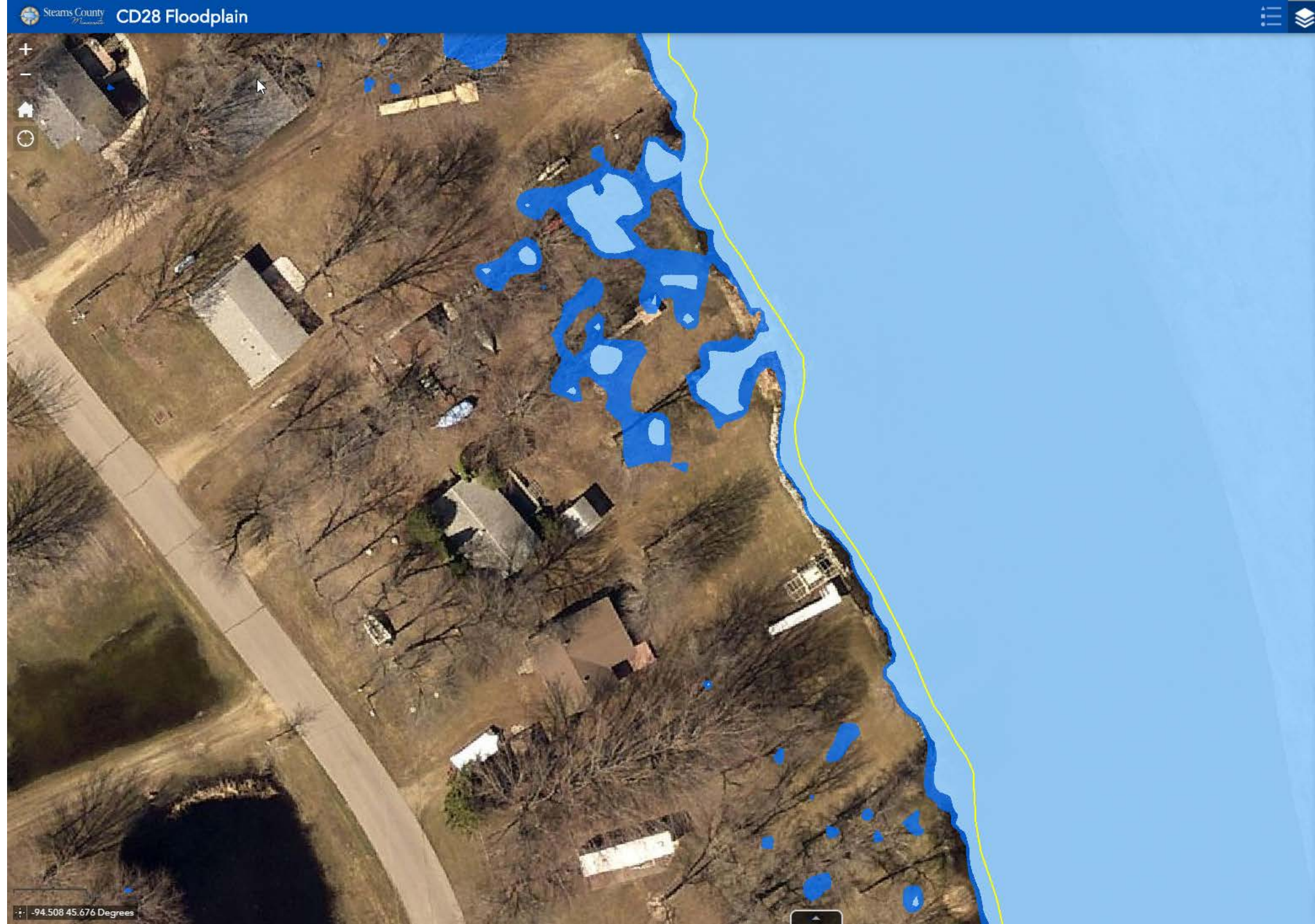


Current 2 year  
rain event before  
moving forward  
with a  
recommendation



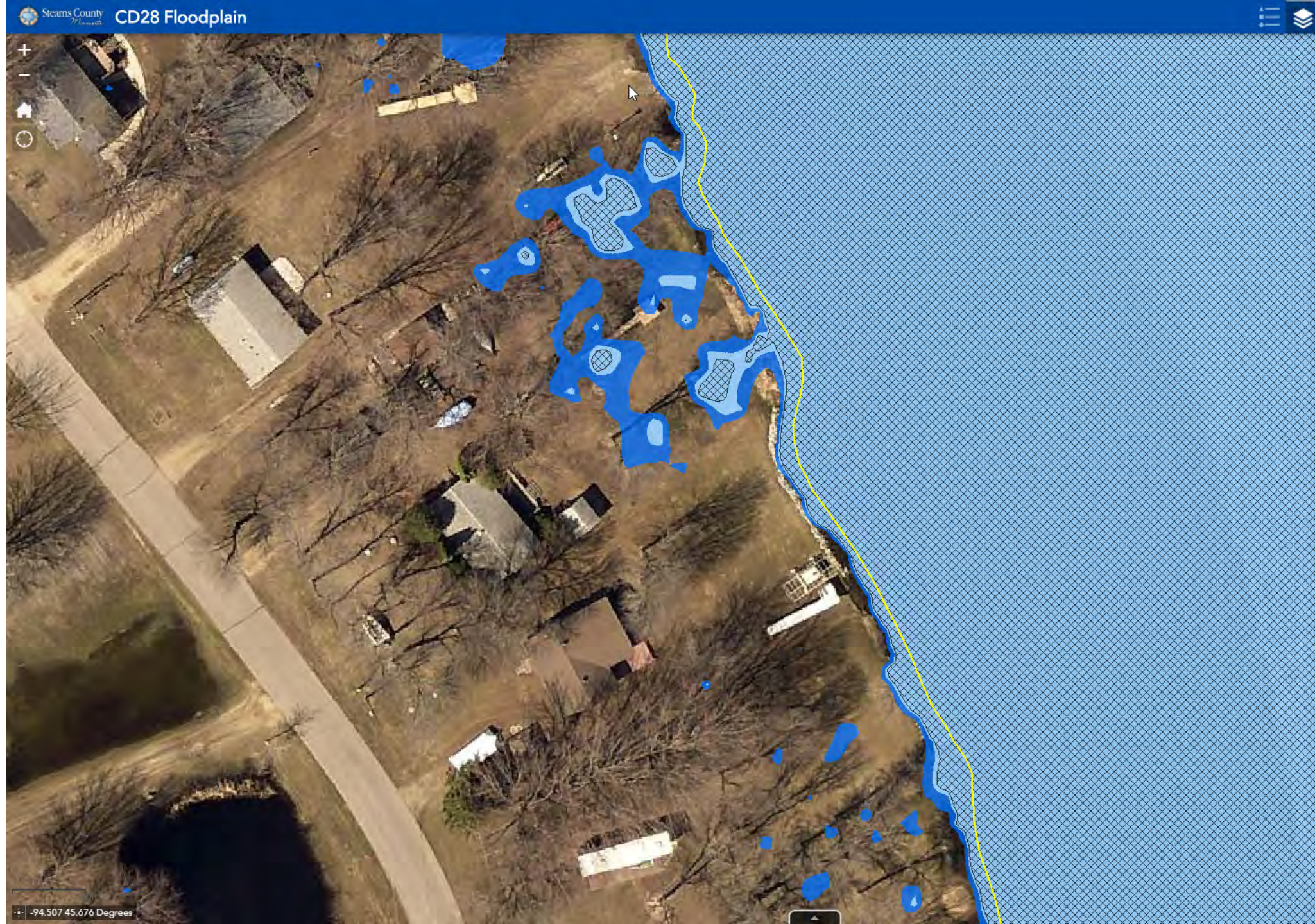


2 year rain  
event with  
fish trap  
removed





2 year rain event  
with fish trap  
removed and  
repairs performed





# Project History

- Ditch inspections have occurred regularly since 2014 due to complaints of flooding around Two Rivers Lake
- Reestablishment of Records completed in 2019 – establishes ditch elevation profile and right of way of ditch
- Engineer's Conditions Report completed in 2020 – provides a hydraulic model to simulate rainfall events and offer insight into the prevalence of flooding tied to the condition of the ditch
- Both reports highlight maintenance needs that arise over time due to weather events, sedimentation, land use changes, and other factors

# DNR Involvement

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County Ditch 28 is both a legal drainage system, but also public waters. This circumstance means the DNR has a role in oversight of this body of water.



To help the DNR understand how potential activity in the ditch might impact their oversight of public waters, engineering such as reestablishment and engineer's repair report are necessary.

# Projects Under Consideration

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ENGINEERS REPAIR REPORT



DITCH REDETERMINATION



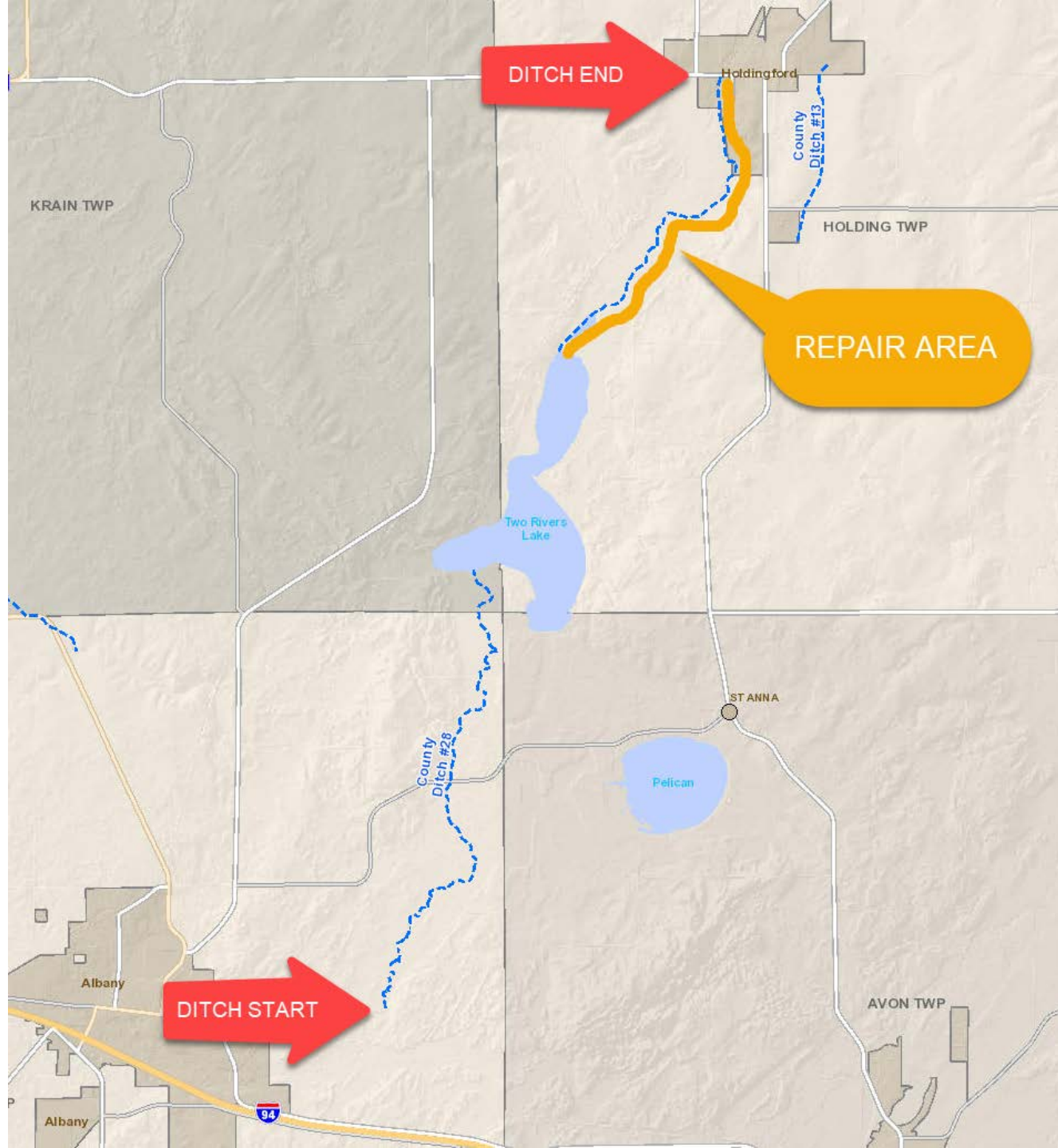
REPAIR DITCH FROM LAKE OUTLET  
TO CO RD 17 IN HOLDINGFORD

# Engineer's Repair Report

- The next step towards a repair of County Ditch 28
- Estimated cost \$25,000 to \$30,000
- Based on MN Statute 103E.715 Sub.2 the repair report shall:
  - Show necessary repairs
  - The estimated cost of the repairs
  - Details, plans, and specifications necessary to prepare and award a contract for the repairs

# Repair to Ditch

- The purpose of the repair is to remove sediment accumulation, so the ditch is in its “as constructed” condition.
- The project area is about 2.83 miles in length (14,940 feet)
- Repair is based on estimate of \$5 a linear foot. Engineering, legal, and tree removal costs are very roughly estimated at \$200,000. An engineer’s repair report would provide a better estimate.



The proposed repair is from lake outlet to ditch end in Holdingford.

Excavation south of Two Rivers Lake would require discussion with the DNR to accomplish as very little excavation was performed here in 1906.


## What is Ditch Redetermination?

- Drainage system Redetermination is a legal process by which the drainage system is updated to reflect current conditions.
- In the case of CD28, costs would be shared by property owners determined to use CD28 based on 2020 conditions rather than the original 1906 determination.



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## Ditch Redetermination

- Redetermination is advisable because current assessments are tied to 1906 and land use and benefited areas of the system have changed.
  - Based on ditch viewers estimate of new benefitted acres of approximately 43,000 acres, cost of redetermination is at least \$175,000.
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- A series of four yellow dashed line segments are arranged in a curved, upward-sloping pattern in the bottom right corner of the slide.

# CD28 Watershed

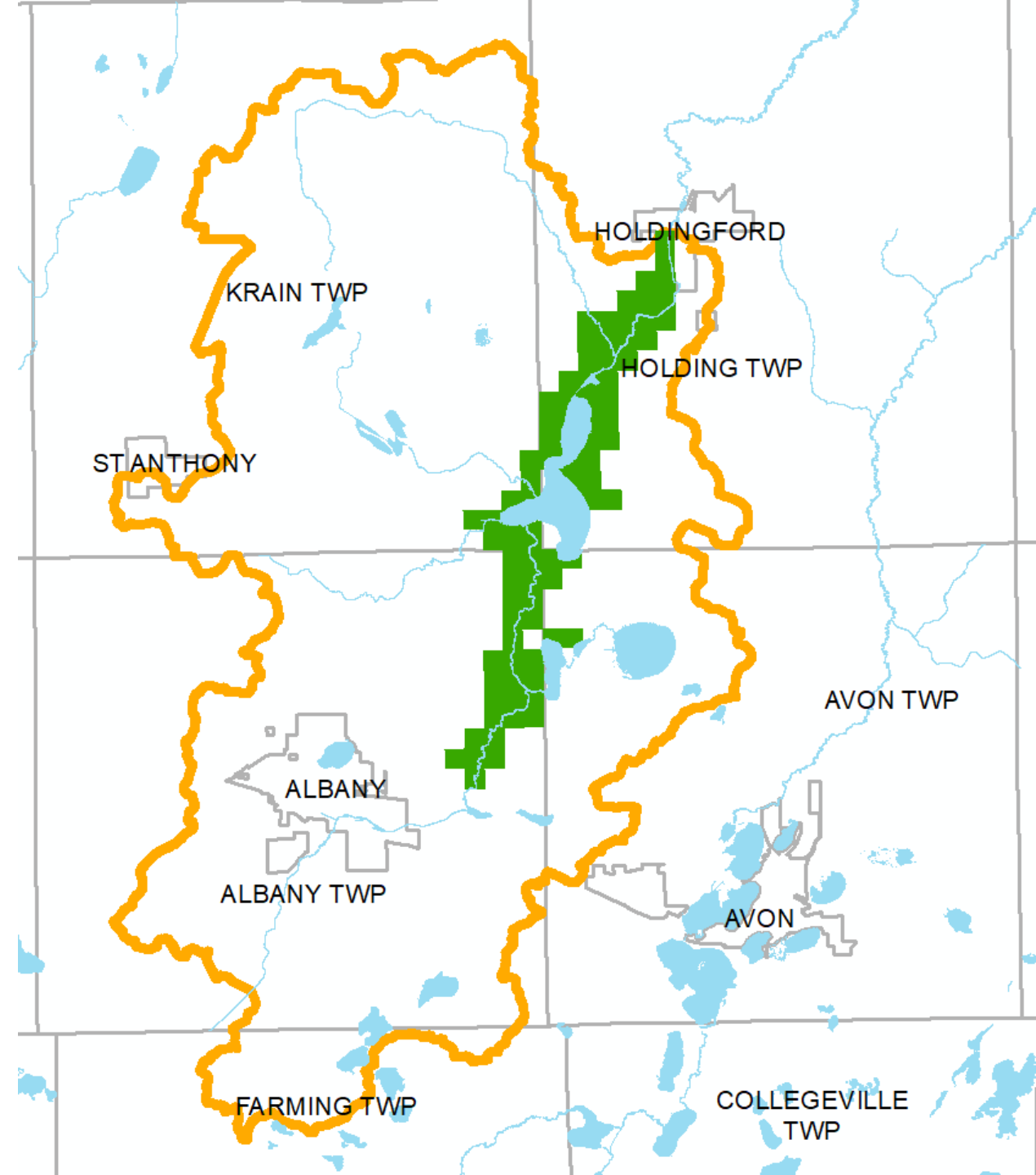
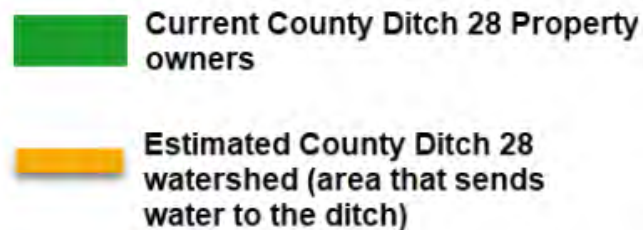
The CD28 watershed is the area determined through engineering to contribute water to the drainage system.

Current Benefit – 3,089 acres – 231 properties

CD28 Watershed – 43,791 acres – 3,000 properties

Redetermination will update the drainage system based on what properties contribute water

Properties that send water to CD28 would be part of the system and responsible for paying expenses incurred



# Project Summary

- The next required step to move forward is the Engineers Repair Report. If approved on Nov 17, 2020, it may lead to redetermination and repair projects.
  - If approved at a future Board of Commissioners meeting, the redetermination of the ditch system would move forward
  - If approved at a future Board of Commissioners meeting, the repair project would move forward
- An approximation of costs:
  - Engineers Repair Report - \$25,000 to \$30,000
  - Ditch Redetermination – minimum of \$175,000
  - Repair – Cost estimate will be more accurate after repair report - \$200,000

# SHARE YOUR THOUGHTS

## Mail to:

Land Services  
Stearns County Service Center  
3301 County Road 138  
Waite Park, MN 56387

## E-Mail to:

County.Drainage@co.stearns.mn.us



The Stearns County Commissioners will make a decision about whether to proceed with any projects at a later date



Visit CD28 project website  
[https://gis.co.stearns.mn.us/Ditches/cd28/cd28\\_2020.html](https://gis.co.stearns.mn.us/Ditches/cd28/cd28_2020.html)



Please share your thoughts by:



Fill out digital survey <https://arcg.is/1uWaGr>



Write a letter or email



Your  
Feedback is  
Important!

Online Survey for County Ditch 28  
proposed projects

<https://arcg.is/1uWaGr>

