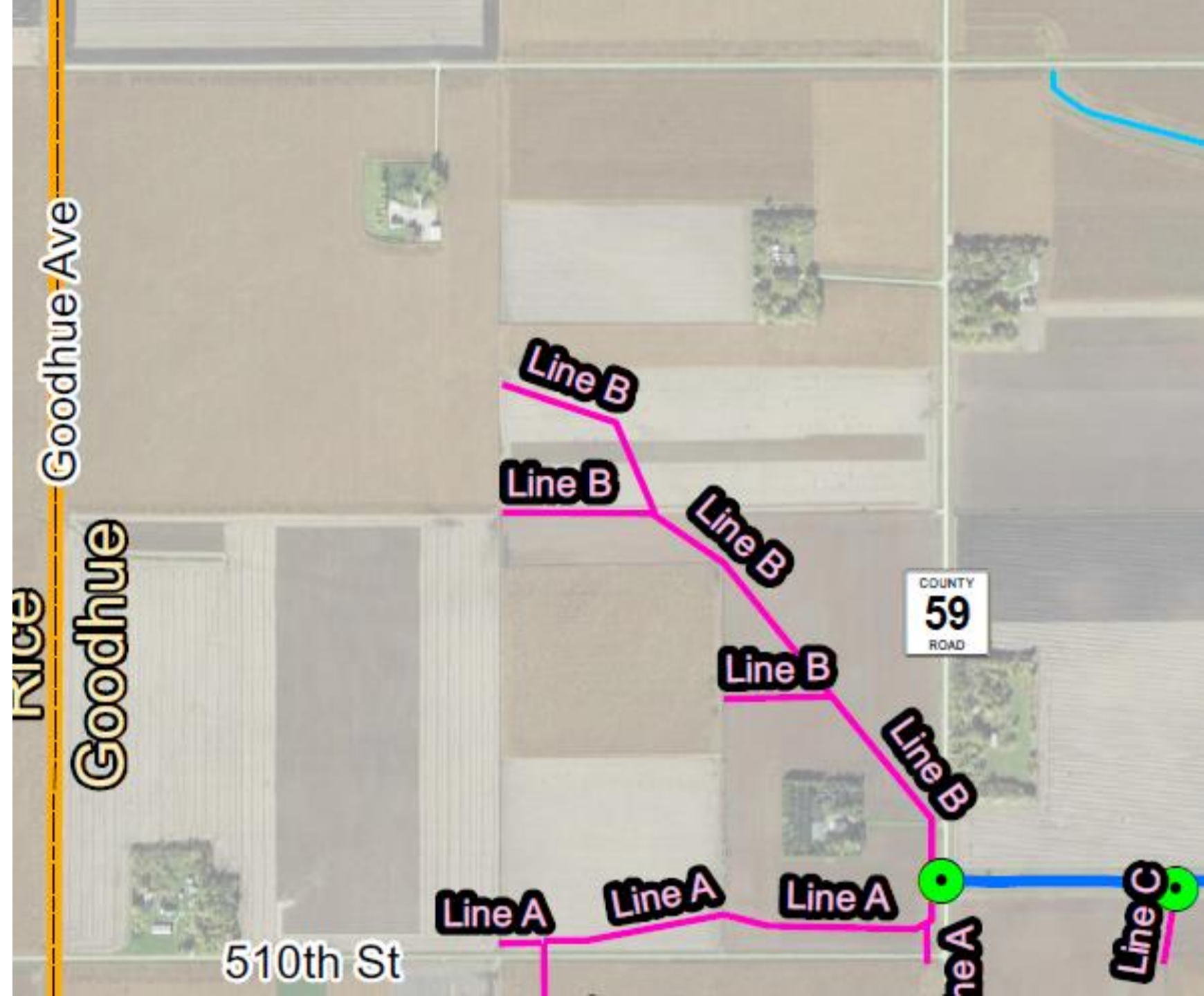


# Goodhue County Ditch 1 Branch B

## Discussion and Feedback on Repair/Improvement Options

Chris Otterness  
Houston Engineering  
February 4, 2021





# CURRENT BRANCH B TILE CONDITIONS



- Broken concrete blocking outlet
- Equipment unable to move upstream

- Erosion outside drop structure



# REPAIR VS. IMPROVEMENT



## Repair

- Replace system at same grade and diameter (or next available size if current is unavailable)
- Entire system pays for replacement
- Branch B is current sized for a capacity of 0.13 in/day (NRCS recommendation is 0.5 in/day)

## Improvement

- Replace system at desired diameter/grade (may be bigger and deeper)
- Entire system pays for separable maintenance (i.e. equivalent cost for a repair)
- Branch B landowners pay for added cost to increase pipe size and/or make it deeper

# IMPROVEMENT PROCESS



## 1. Petition for improvement

- Requires signature from 26% of owners of property or 26% of land area
- Petitioners may hire an independent attorney or utilize standard petition template
- Must be filed with a bond for at least \$10,000

## 2. Board appoints an engineer

## 3. Engineer prepares a preliminary survey report

## 4. Preliminary hearing on improvement

## 5. Board appoints viewers

## 6. Engineer prepares detailed survey report

## 7. Viewers prepare viewers report

## 8. Final hearing

- IF benefits exceed cost, THEN Board orders improvement



# NOTES ON IMPROVEMENT PROCESS



- Petitioners must provide addition bond to cover expenses to be incurred up to final hearing
- If petition is successful, cost of proceeding is allocated to those benefitting per viewers report
- If petition is unsuccessful, petitioners are responsible for all proceeding costs
- Entire proceeding process typically takes in excess of one year

Rough estimate of project cost:

- \$250-300k separable maintenance
- \$75-100k improvement

# INPUT NEEDED FROM YOU



- Is it likely you will be petitioning for an improvement?
- Is there any assistance you need from the County and its consultants in your decision and/or moving forward?
- If you are unlikely to petition for improvement, do you wish for the County to proceed forward with a repair?



# Goodhue County Ditch 1 Public Information Meeting

Bryan Murphy  
H2OverViewers

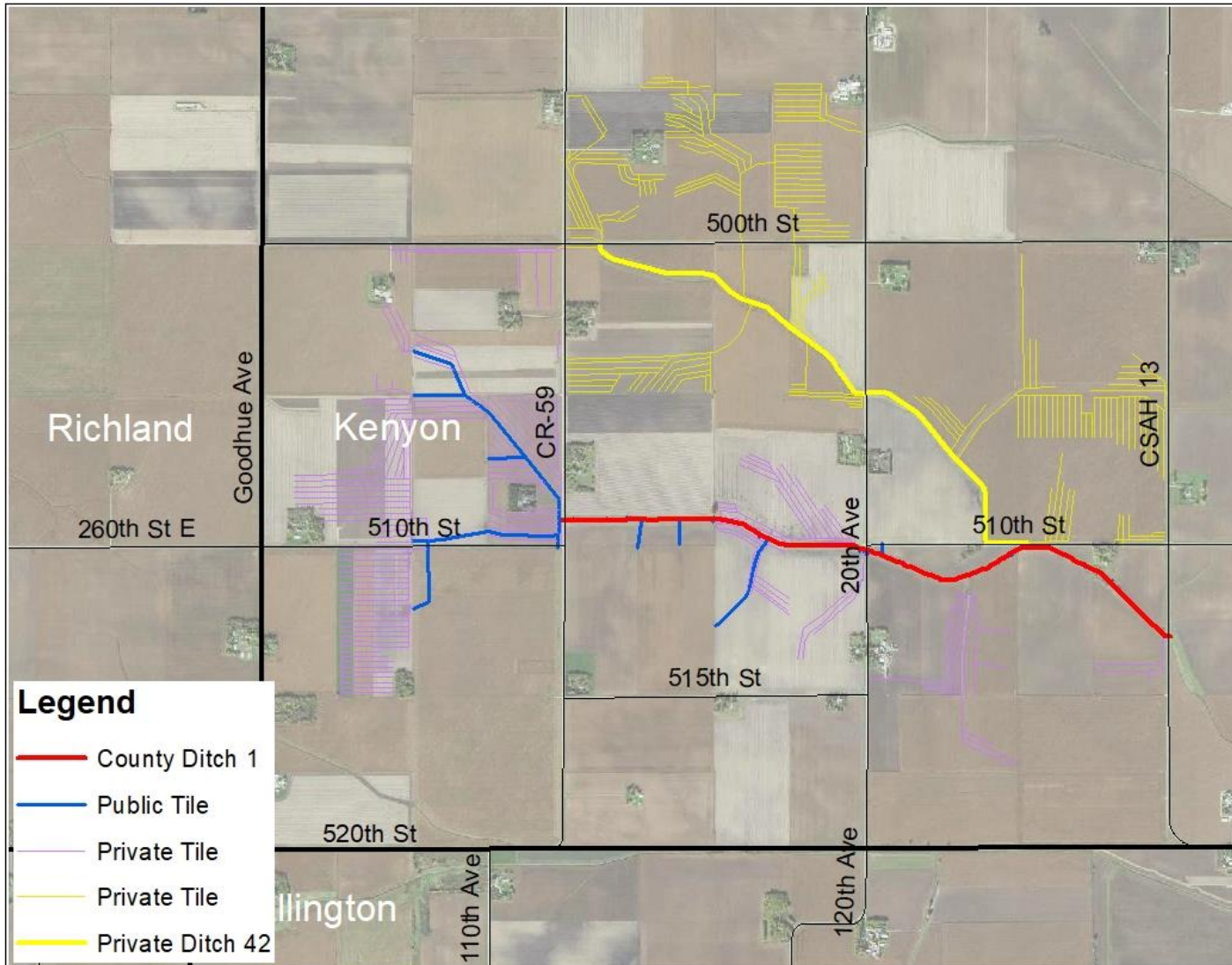
Chris Otterness  
Houston Engineering

Kale Van Bruggen  
Rinke Noonan

February 4, 2021



# WHY WE ARE HERE



- Discuss Redetermination of Benefits process
- Review findings from repair report
- Discuss next steps and timeline
- Address your questions

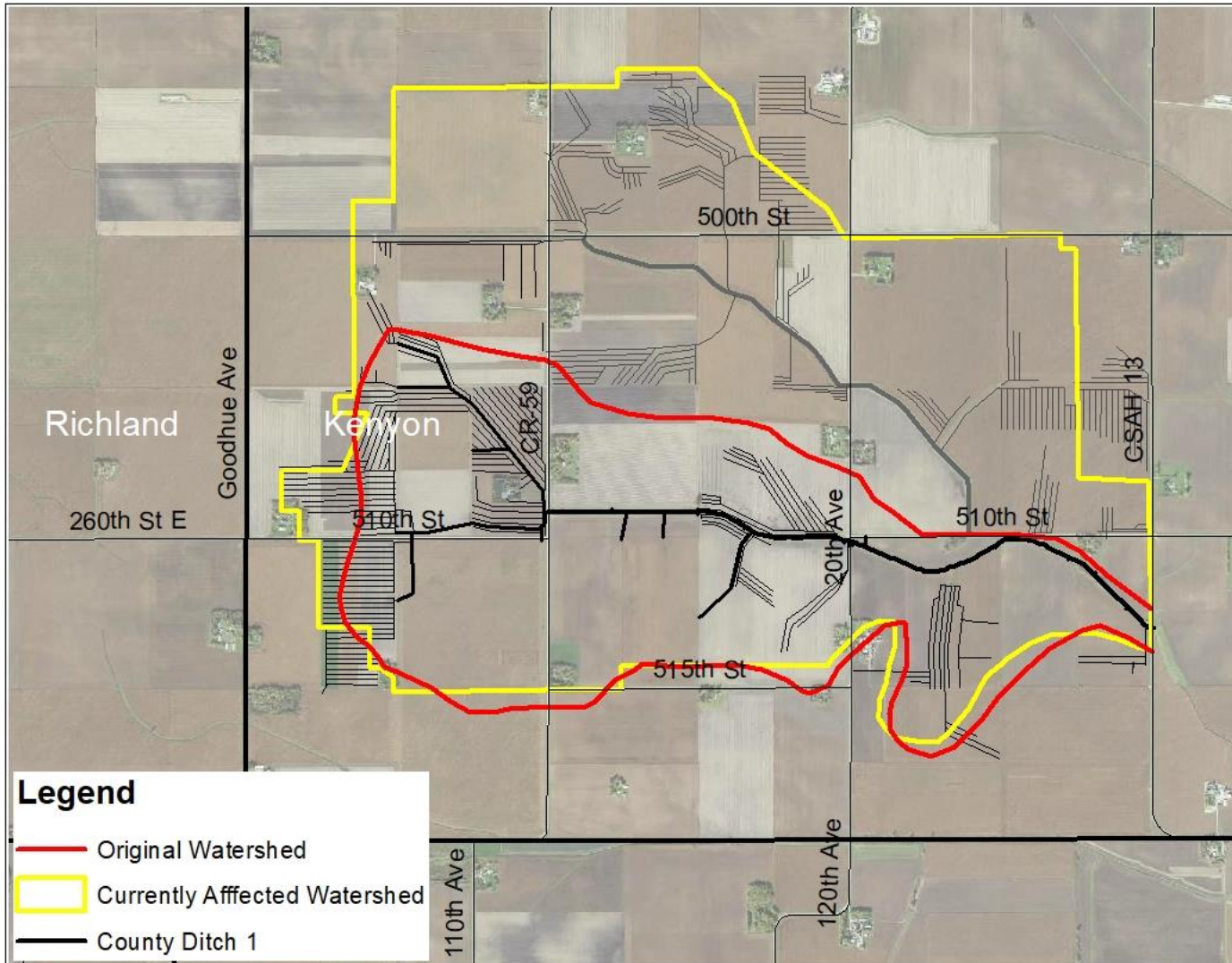


# REDETERMINATION OF BENEFITS



- Bryan Murphy – H2OverViewers

# REPAIR REPORT



## Two Components

- Inspection of public tiles (via televising)
- Repair recommendation for Main Trunk open channel

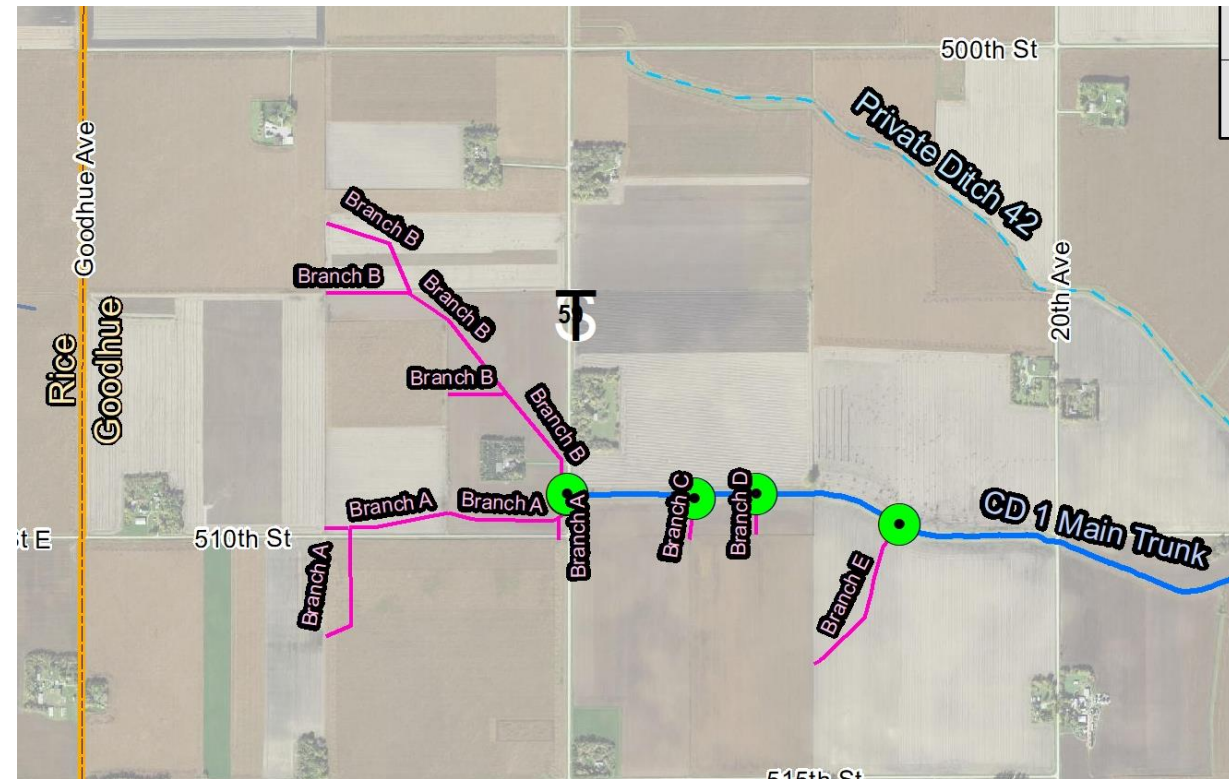
*Note: Inspection of open channel completed as part of a separate effort in the summer of 2020*

# TELEVISION OF TILE BRANCHES



## Televising Survey – September 2020

- Surveyor: Empire Pipe Services
- Locations: Branches A, B, C, D, E (Green dots)
- Process: Began at tile outlet, went upstream as far as possible
- Deliverables: Video and surveyor's report



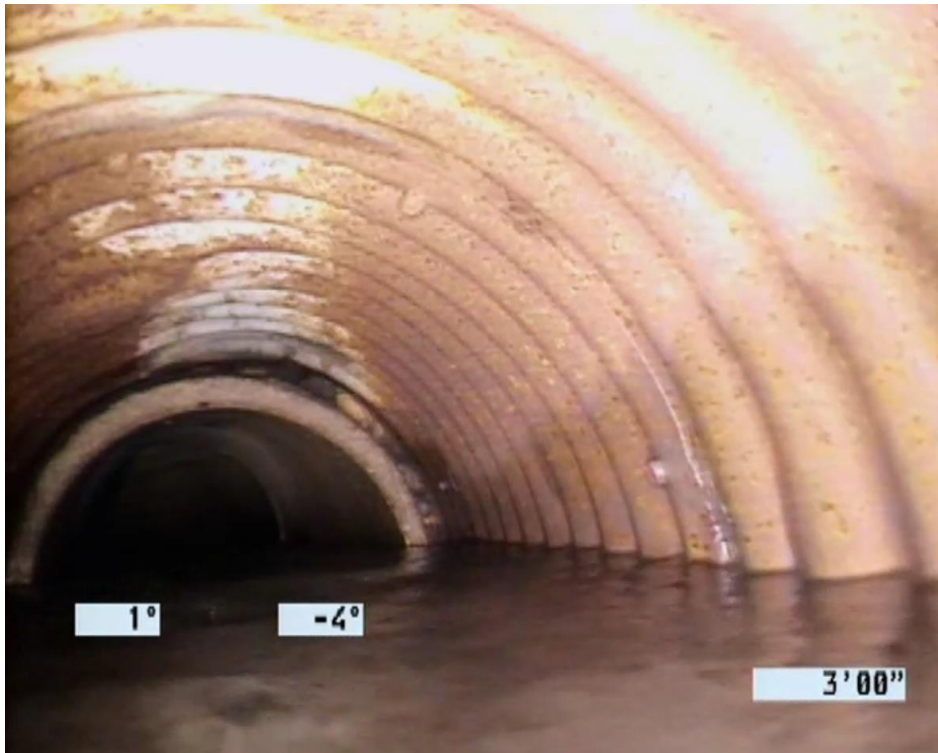


# CURRENT TILE CONDITIONS



## Branch A

- CMP added near outlet by undocumented repair, poor fitting



- Longitudinal cracking of concrete pipe





# CURRENT TILE CONDITIONS



## Branch B

- Broken concrete blocking outlet
- Erosion outside drop structure



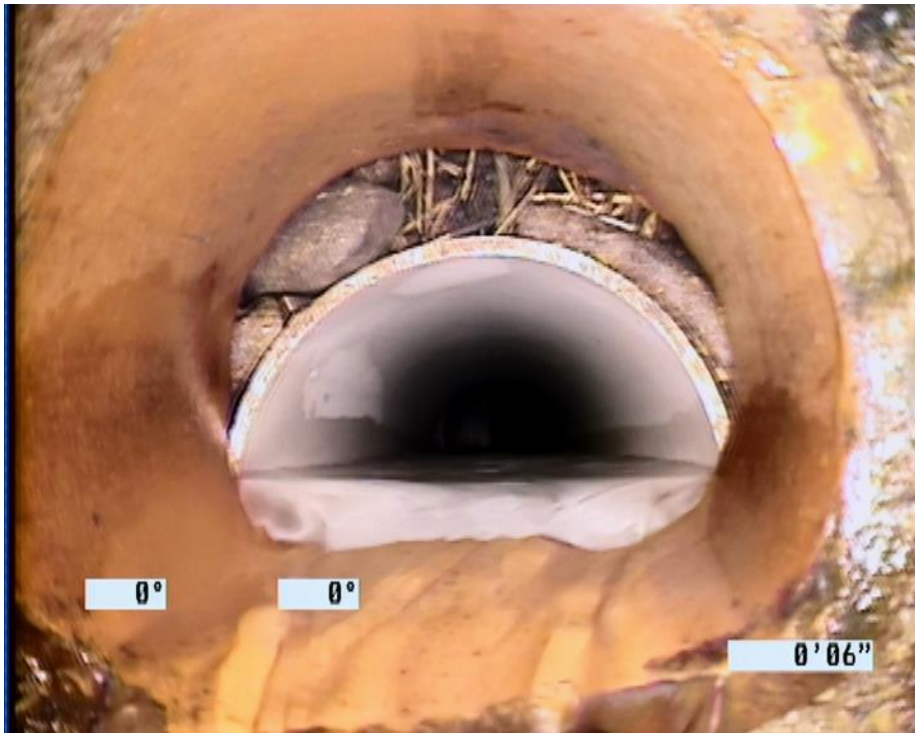


# CURRENT TILE CONDITIONS



## Branches C and D

- Obstructions near outlets



Branch C

## Branch E

- Surveyed up to 620' upstream
- At 8', RCP replaced with HDPE in good condition





# TILE CAPACITY



Current tiles have reduced flow capacity due to obstructions and material changes

Branch	Size	Flow Reduction
A	14"	28%
B	10"	41%
C	8"	25%
D	6"	37%
E	8"	4%

Three of five tiles appear to be undersized based on current design standards (Coefficient = 0.5 in/day)

Branch	Size	Max Flow (cfs)	Drain. Area (acres)	Coeff. (in/day)
A	14"	3.8	300	0.30*
B	10"	1.1	212	0.13
C	8"	0.8	107	0.18
D	6"	0.5	21	0.57
E	8"	0.5	61	0.20

\* Capacity of Branch A will be 0.41 in/day once repaired

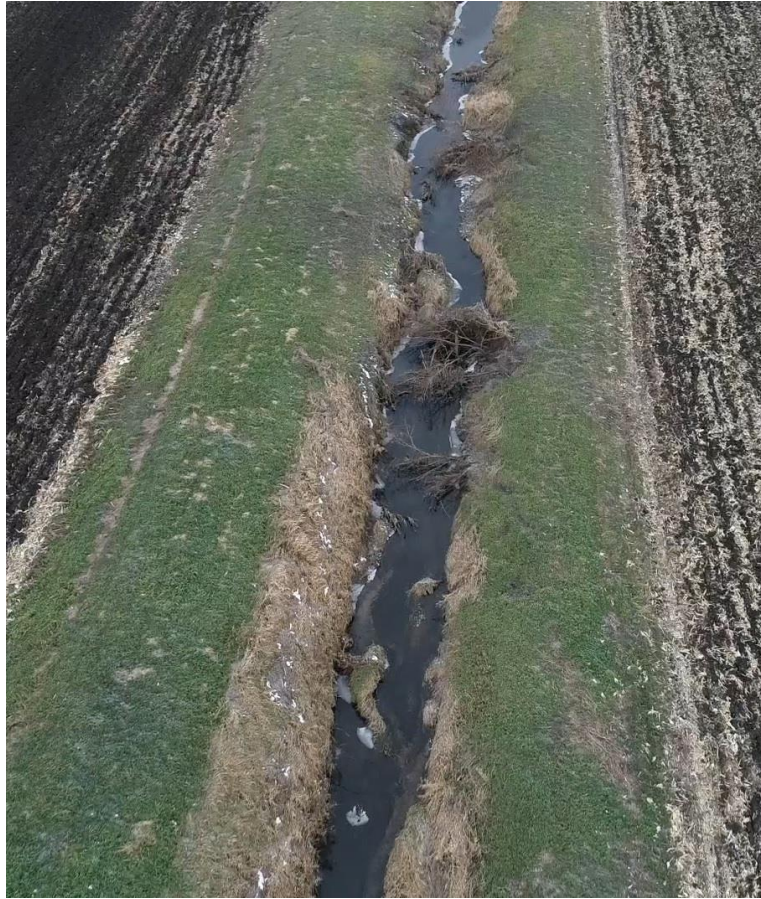
# RECOMMENDATIONS – TILE BRANCHES



- **Branch B:** Consider petitioning for an improvement
  - Improvement can only be initiated by a petition of benefitting landowners
- **Branch A:** Repair (replace) to current grade / cross-section
  - May use next larger size if unavailable (e.g 14-inch becomes 15-inch)
- **Branches C, D:** Recommend repair only if desired by underlying landowner
- **Branch E:** No repair necessary at this time



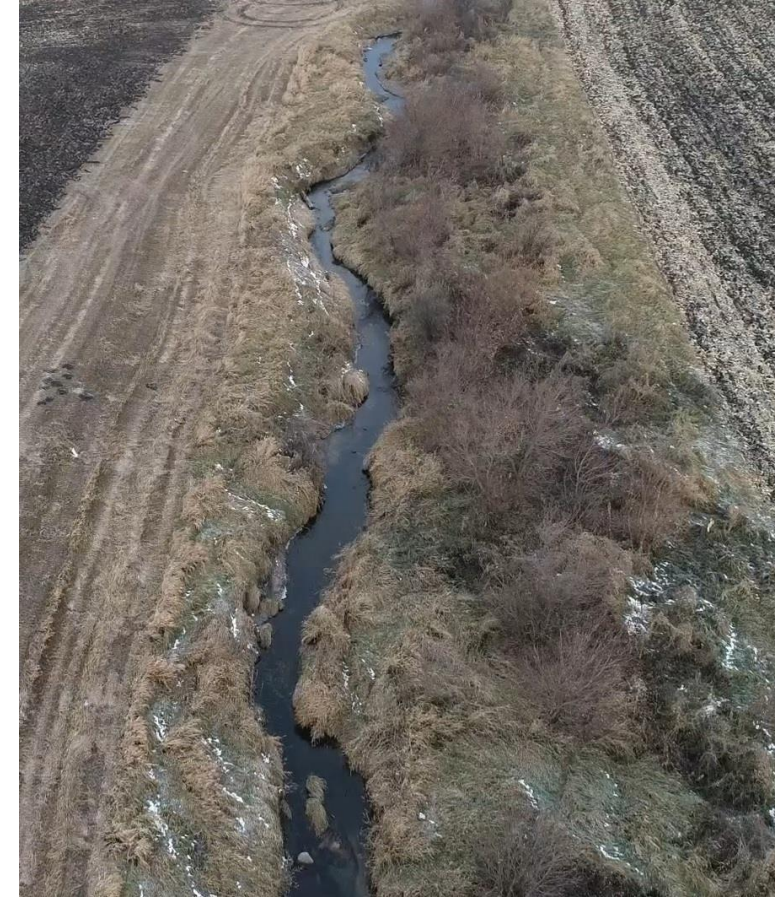
# MAIN TRUNK CURRENT CONDITIONS



Vegetation Growth  
and Debris



Bank Sloughing



Channel Meandering



# MAIN TRUNK OPEN CHANNEL



## Recommended Repair

- Remove trees and brush along top of bank
- Remove accumulated sediment from channel and place at top of bank
  - Level spoils if desired by landowner
- Replace culvert under 20<sup>th</sup> Ave.
- Replace culvert at field crossing
- Repair bank sloughing



# PRELIMINARY OPINION OF CONSTRUCTION COST



Category	Cost
Construction Costs	\$252,860
<i>Public Road Crossings</i>	<i>\$25,920</i>
<i>Public Drainage Infrastructure</i>	<i>\$226,940</i>
Engineering	\$42,140
Legal and Administrative	\$20,000
<b>Total Repair Project Costs</b>	<b>\$315,000</b>

- Costs shown are for Main Trunk repair only
- Engineering is 20% of Construction Cost
- Construction costs have 20% contingency applied

# PRELIMINARY TIMELINE



2/4/21: Informational Meeting

2/16/21: County Board sets Final Hearing date on ROB

3/1/21: County Board sets Final Hearing date on repair

3/24/21: Final Hearings on ROB and repair (via web)

4/27/21: Advertise for bids

5/25/21: County Board considers bids

Summer/Fall 2021: Construction of Main Trunk Repairs

*Note: Timeline does not include repairs/improvement of tile branches*



# QUESTIONS AND INPUT FROM LANDOWNERS

- Landowners with a CD 1 tile on their property: do you want the tile repaired at this time?
- All benefitting landowners: Are there any thoughts concerns about the timeline/schedule of repairs?
- Any other concerns/input?

*Note: You will have the opportunity to provide input on the record at the public hearing.*

