RCWD
RICE CREEK WATERSHED DISTRICT

MARCH

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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

APRIL

S	M	T	W	T	F	S
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7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

RCWD BOARD OF MANAGERS WORKSHOP

Monday, March 11, 2024, 9:00 a.m.

Rice Creek Watershed District Conference Room
4325 Pheasant Ridge Drive NE, Suite 611, Blaine, Minnesota
or via Zoom Meeting:
https://us06web.zoom.us/j/88354854434?pwd=OgjuEq6hgTCglBoWGsZFrXqx8oQgVb.1
Meeting ID: 883 5485 4434
Passcode: 981278
Dial by your location
+1 312 626 6799 US (Chicago)
Meeting ID: 883 5485 4434
Passcode: 981278

Agenda

ITEMS FOR DISCUSSION (times are estimates only)

9:00 2024 Rule and Regulatory Program Revision

9:45 PDS Facilities Annual Report & Forecast

10:30 PDS ACSIC Determination Step 2 – Anoka County Ditch 10-22-32

Administrator Updates (If Any)

9:00 2024 Rule and Regulatory Program Revision

MEMORANDUM
Rice Creek Watershed District

Date: March 5, 2024
To: RCWD Board of Managers
From: Patrick Hughes, Regulatory Manager
Subject: 2024 Rule and Regulatory Program Revision

Introduction

RCWD is seeking to update its regulatory rules during the 2024 calendar year. The proposed revisions are expected to increase the efficiency and effectiveness of regulatory administration. The updated rule set is scheduled for a January 1, 2025 implementation date.

Background

Per the 2020 RCWD Watershed Management Plan (WMP), the District will review the need for rule modification every 2 to 3 years. The current rule set was adopted in 2020 and implemented on January 1, 2021. This past rulemaking effort has been successful in providing rule clarity, resulting in more complete applications, and greatly reducing the amount of variance requests. Since 2021, staff and engineer have kept a running list of potential rule revision and overall program efficiency considerations (e.g. permit enforcement procedures) for the next rulemaking effort.

The workshop is an opportunity to inform the Board of the anticipated effort and the expected timeline. Staff and HEI will share a presentation that outlines the goals of rule revision, the successes of the 2020 rule revision effort, the 2024 rule revision priorities, a sample of the anticipated rule considerations, and the proposed timeline for implementation. After the workshop discussion, HEI will finalize a task order to assist with evaluation of potential rule modifications, preparation of draft rule language, and administration of the statutory process/obligations. Please note that the 2024 adopted budget includes monies for the rule revision effort.

Staff Recommendation

Staff seek concurrence from the Board of Managers to begin the process of updating the regulatory rules and consider potential changes to the surety schedule and the policy for enforcement of permit conditions.

Attachment

- RCWD Rule Revision – 2024 Overview of Process and Timelines

RCWD Rule Revision – 2024
Overview of Process and Timelines

Board Workshop
March 11, 2024

Goals of Rule Revisions

- Efficient and effective rule administration
- Reduce variance requests
- Minimize rule complexity and increase clarity
  - Decrease applicant cost
  - Decrease District review efforts and cost

RCWD Watershed Management Plan specifies the need to assess rules every 2 to 3 years

Status

- List of rule revision and overall program efficiency considerations prepared and prioritized by HEI and District staff
- HEI has prepared a draft task order to assist District staff with evaluating potential rule modifications, preparing draft rules, and administering statutory process
  - Potentially 3/27 regular board meeting

Recap of 2020 Rule Revision

- Prompted by input from regulatory staff, MS4 Rule changes, and WMP comments
- Major focus areas:
  - MS4 / RCWD Rule alignment (Rule C)
  - Variance reduction (Rules E & F)
  - Clarify Public Drainage Requirements (Rules G & I)
- Process took ~ 9 months
- Effective 1/1/2021

Effect of 2020 Rule Revision

- Variances down from 7 per year (2016-2019) to 2 per year (2021-2023)
- Fewer applicant questions on Rule C (Stormwater)
- More complete submittals on Rule I (ditches)
- Less legal/staff time on resolving rule inconsistencies

2024 Rule Revision Priorities

- Continue to address variances
- 37 low to moderate priority items identified by regulatory staff for consideration
    - Rule clarifications
    - Exemptions for low impact/risk activities
    - Modernization
- NO “major” policy items or rule re-writing identified
- Input on priorities will continue to be received from staff, Board, City/County partners, and public

2021-2023 Variance Request

- **Total of 6 variances**
  - **Floodplain Freeboard (3)**
  - **Floodplain Fill (1)**
  - **Wetland Management Corridor (WMC) triggered by Rule C (1)**
  - **WMC on outlot (1)**

- **Most of these may by addressed / avoided via minor clarifications in the rules**
- **NOTE: Goal is <u>not</u> to eliminate all variances**

Permit File Number	Project Name	Municipality	Status	Rules	Variance to Rule
23-056	Hartman Shed	Arden Hills	Issued	Rule D,Rule E	Freeboard Rule E.3(g). Less than <2' for garage
23-039	Naegeli Two Car Garage	Shoreview	Issued	Rule D,Rule E	Freeboard Rule E.3(g). Less than <2' for garage
21-135	Voxland	Forest Lake	Amended Issued	Rule E,Rule D	Rule E - fill greater than 100 Cy (186 CY)
21-094	Waldoch Farm Expansion	Lino Lakes	Issued	Rule D,Rule C	Rule C.10(d)/F.6 - buffer requirements of CWPMP
21-077	Arora	Shoreview	Closed	Rule D,Rule E	Freeboard Rule E.3(g). Less than <2' for garage
21-032	The Blaine Back 40	Blaine	Issued	Rule D,Rule E,Rule F,Rule C	Rule F.5(b)(1) - CWPMP platted outlot
23-079	Rice Lake Chain of Lakes Park Reserve Roadway and parking Lot Improvements	Lino Lakes/ Centerville	Under Review	Rule C, D, F, E	Rule C - Percent of treatment
23-032	35W Logistics	Blaine	Under Review	Rule C, D, F	Rule C - Bounce and inundation

Sampling of 2024 Rule Considerations

Rule C (Stormwater)

- Removing ROC requirement for public linear construction
- Requirements for use of existing regional basins
- BMP / treatment requirement for road reconstruction & turn lanes
- Regulation of upsizing of stormwater outlets
- Requiring chloride management plans

Sampling of 2024 Rule Considerations

Rule E (Flood Control)

- Remove prohibition on floodway fill
- Exempt non-critical structures from freeboard requirements

Rule I (Public Drainage Systems)

- Exempt public property from easement requirements
- Permitting of temporary crossings
- Permanent marking of underground crossings

2024 Rule Considerations - Surety

- No clear, established internal policy on enforcement of permit conditions and use of surety
- Rule modification may be necessary to clarify/strengthen RCWD's process (Rule K)
- Compliance to be achieved through inspection administration
- Need to consider surety schedule (becoming too small to cover corrective actions)

Obtaining Public / Partner Input

- Discussion at April City/County Partner meeting
- "Early Comment Period" for City/County Partners
  - "New" rule change topics for consideration
- Public comment period and hearing in summer

Proposed Timeframe

- March 2024: Execute Task Order with HEI for rule revision assistance
- May 2024: Board Workshop on Surety process and schedule
- June/July 2024: HEI preparation of report and draft rule modification language
- July 2024: Consider authorizing staff to notice proposed rule modification and set public hearing
- August 2024 – September 2024: Public comment period
- September 2024: Public hearing on rule
- October 2024: Staff consideration of comments
- November 2024: Board workshop – review comment responses
- November 2024: Board resolutions on Rule modification, surety schedule, enforcement procedures
- January 2025: Rule change effective

QUESTIONS?

9:45 PDS Facilities Annual Report & Forecast

MEMORANDUM
Rice Creek Watershed District

Date: March 6, 2024
To: RCWD Board of Managers
From: Ashlee Ricci, Drainage & Facilities Manager
Subject: PDS & Facilities Annual Report & Forecast

Introduction

District staff will present to the Board a review of the programs past year's highlighted work completed, the current year's recommended inspection, maintenance, and repair activities, and forecast the upcoming programs' needs for the coming year.

Background

The Rice Creek Watershed District (District), as drainage authority, is responsible to inspect and maintain the public drainage systems (Systems) within its boundary. Each year staff report to the Board on the past year's activities and program plans for the future. There are 114 miles of Systems across 16 cities.

Statute requires that all drainage systems be inspected at least every five years. Based on this requirement, an annual schedule exists to track inspections. Staff routinely complete many more inspections than are planned. For minor maintenance, the planned maintenance activities are subject to change pending weather, site conditions, contractor availability, the current budget and reprioritization. For major repairs, Houston Engineering, Inc. (HEI) tracks the long-term prioritization and presents each year to the Board to gather consensus or revise the previous year's prioritization.

At this time, staff forecast no significant increase or decrease in next year's budget to address anticipated Systems inspection and maintenance needs.

The District's facilities' (Facilities) program consists of the operation and maintenance of water management structures and property constructed and/or owned by the District. The District is responsible for 31 facilities. Staff will continue Inspection, operation, and maintenance for each facility. Many of these activities are required because of grant obligations. In addition to the grant obligations, systematically managing facilities protects the District's (and therefore the public's) investment into the facility to improve water quality and flood mitigation.

As the facilities age, staff forecast an increase in the overall facilities budget to address vegetation maintenance, unforeseen repairs, and to begin systematically repairing facilities as needed.

Attachment

2023 Drainage Inspection Report

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PUBLIC DRAINAGE SYSTEM
INSPECTION REPORT

2023

Ashlee Ricci
RCWD Drainage & Facilities Manager

Rice Creek Watershed District

2023 Public Drainage System Inspection Report

The Rice Creek Watershed District, as the Drainage Authority for all public drainage systems within its boundary, is required by the Minnesota Board of Water and Soil Resources to report on drainage system activities, including inspections performed and buffer strips installed, for the previous year. This report both fulfills that requirement as well as provides the RCWD Board of Managers with a concise summary of the previous year's drainage system activities. The contents of this report will be used to plan for the upcoming year's maintenance activities and to provide for a predictable and orderly program of inspection and maintenance of the District's drainage assets.

Per Minnesota statute 103E.067:

The drainage authority shall annually submit a report to the Board of Water and Soil Resources for the calendar year including:

(1) The number and types of actions for which viewers were appointed;

(2) The number of miles of buffer strips established according to section 103E.021;

(3) The number of drainage system inspections conducted; and

(4) The number of violations of section 103E.021 identified and enforcement actions taken. History: 207 c 57 art 1 s 111

This information was submitted to the Board of Water and Soil Resources in January of 2023 per the above referenced statute.

In 2023, over 60 inspections on 16 total systems were performed. Twelve systems had maintenance work performed on them. This report contains a summary of work completed in 2023 and recommendations from the Drainage & Facilities team for maintenance projects for 2024.

Any questions or comments regarding the content of this report can be submitted to:

Ashlee Ricci
Drainage & Facilities Manager
Rice Creek Watershed District
4325 Pheasant Ridge Dr. NE, Suite #611
Blaine, MN. 55449
763-398-3082
aricci@ricecreek.org

RCWD Drainage System Inspection Schedule

2023

Inspection Type

Level1
Level2
Level 3

X in box means completed

Drainage System	Branch	System Type	Inspection Priority	2023	2024
ACD 10-22-32	Main Trunk	Open Channel	High	X	
	Branch 1	Open Channel		X	
	Branch 1a	Open Channel			
	Branch 2	Open Channel		X	
	Branch 3	Open Channel		X	
	Branch 4	Open Channel		X	
	Branch 4a	Open Channel			
ACD 15		Open Channel			
ACD 25		Open Channel			
ACD 31	Main Trunk and Branch 2	Open Channel	High	X	
	Remaining Branches	Open Channel			
ACD 46	Main Trunk and Branch 3	Open Channel	High	X	
	Remaining Branches	Open Channel			
ACD 53-62	Main Trunk	Open Channel	High	X	
	Branch 1	Open Channel	High	X	
	Branch 2	Open Channel		X	
	Branch 3	Open Channel			
	Branch 4	Open Channel			
	Branch 5	Open Channel			
	Branch 5 Lateral 1	Open Channel			
	Branch 5 Lateral 2	Open Channel			
	Branch 6	Open Channel			
ACD 55		Tile		X	
ACD 72		Tile		X	
ARJD 1	Main Trunk	Open Channel	High	X	
	Branch 1	Open Channel		X	
	Branch 2	Open Channel	High	X	
	Branch 3	Open Channel		X	
	Branch 4	Storm Sewer			
	Branch 5	Open Channel		X	
AWJD 3	Main Trunk and Branch 3	Open Channel	High	X	
	Remaining Branches	Open Channel			
JD 4	Main Trunk	Open Channel	High	X	
	Main Trunk	Tile			
	Branch 2	Open Channel			
	Branch 3	Tile		X	
	Branch 4	Tile			
RCD 1	Main Trunk	Open Channel			
RCD 2		Open Channel	High	X	
		Storm Sewer			
RCD 3		Storm Sewer			
RCD 5		Open Channel			
		Storm Sewer			
RCD 4		Open Channel			
		Storm Sewer			
RCD 8		Open Channel			
RCD 11	Main Trunk	Open Channel			
RWJD 1	Main Trunk	Open Channel			
WJD 2	Main Trunk	Open Channel	High	X	
	Branch 1	Open Channel			
	Branch 2	Open Channel			
	Branch 3	Open Channel			
	Branch 4	Open Channel			
WJD 5		Tile		X	
WJD 7		Tile		X	

WJD 2

Hugo

Left: replaced failing metal culvert with salvaged RCP

Below: looking upstream from beaver dam west of Hwy 61

WJD 5

Forest Lake

Left: new headwall built and installed.

Below: anchoring drain tile to prevent floating/limit movement in shallow peat.

ARJD 1

Blaine

Left: Beaver dam in Kane Meadows park.

ACD 31 Branch 1

Columbus

Below: installed side inlet pipes to ensure consistent access and back-side drainage.

2024 Recommended Drainage System Maintenance*

(SUBJECT TO CHANGE)

- ACD 10-22-32 TENTATIVE
  - Main trunk culvert lowering and possible wetland replacement plan at Pine Street

- ACD 53-62
  - Branch 1 excavation east of Lexington Ave to Main Street

- ACD 72
  - Branch 11 Lateral 4A replacement of existing clay tile with HDPE

- ARJD 1
  - A – Main trunk tree & brush removal from County Road J to 93rd Ave.
  - B – Branch 2 excavation; Restwood Rd. to Flowerfield Rd. and Naples to 35W

- AWJD 4
  - Main Trunk and Branch 2 excavation and tree mowing north of 195th Street N

- WJD 2
  - Remove trees and excavate accumulated sediment from County Road 4 to 165th Street N

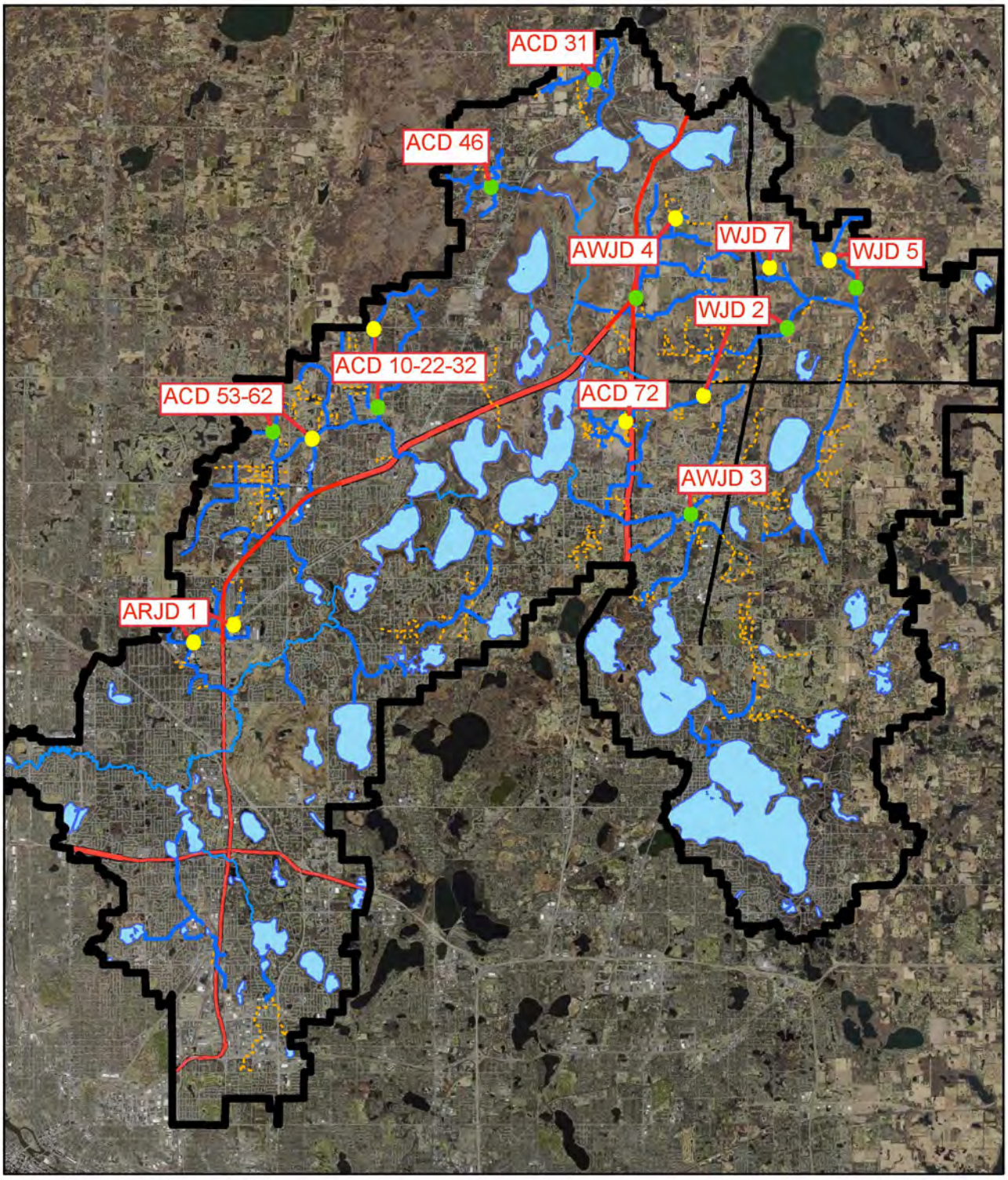
- WJD 5
  - Continue replacement of existing clay tile and system repair from outlet to County Road 50

- WJD 7
  - Main trunk replacement of existing clay tile with HDPE north of 190th St N

- Right-of-Way Maintenance (as possible based on weather and site conditions)
  - ACD's 10-22-32, 31, 46, 53-62
  - AWJD's 3, 4
  - WJD's 2, 5

*See attached map for general locations.

2024 Recommended Maintenance



Legend

- Public Watercourse
- Public Ditch
- Private Constructed Channel
- Private Natural Waterway
- Recommended Maintenance
- Right-of-way Maintenance

10:30 PDS ACSIC Determination Step 2 – Anoka County Ditch 10-22-32

As-Constructed and Subsequently Improved Condition (ACSIC) Determination on ACD 10-22-32

RCWD Board Workshop
March 12, 2024

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Purpose of Workshops

- *Workshop #1: Provide an understanding of how ACSIC's are determined state-wide*
- **Workshop #2: Provide an understanding of how this methodology was utilized in RCWD and specifically on ACD 10-22-32**

<u>These workshops are NOT:</u>

- An attempt by consultant/staff to prove prior conclusions
- A reopening of the drainage proceedings

(Note: Board may reopen proceedings when new information, not previously considered, brings into question the adopted ACSIC)

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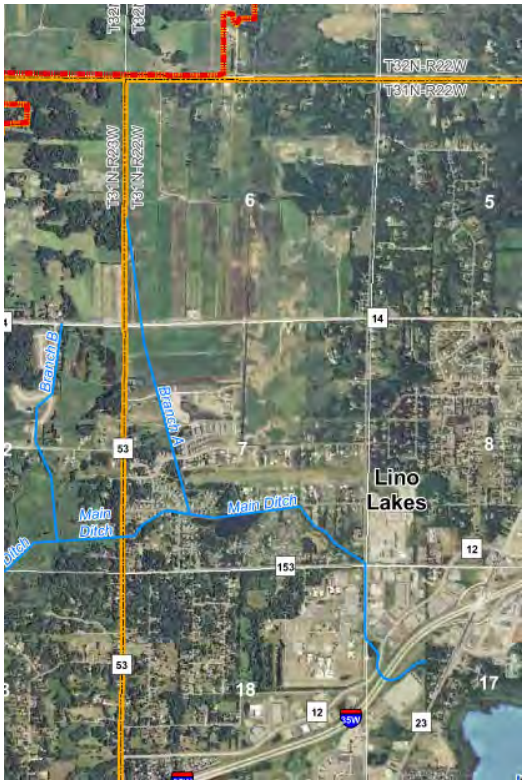
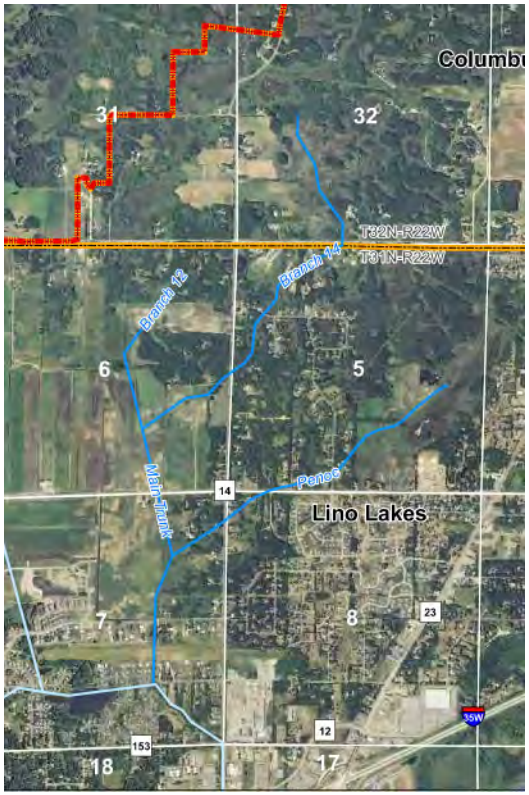
Unique Challenges with ACD 10-22-32

- “Replumbing” of multiple systems

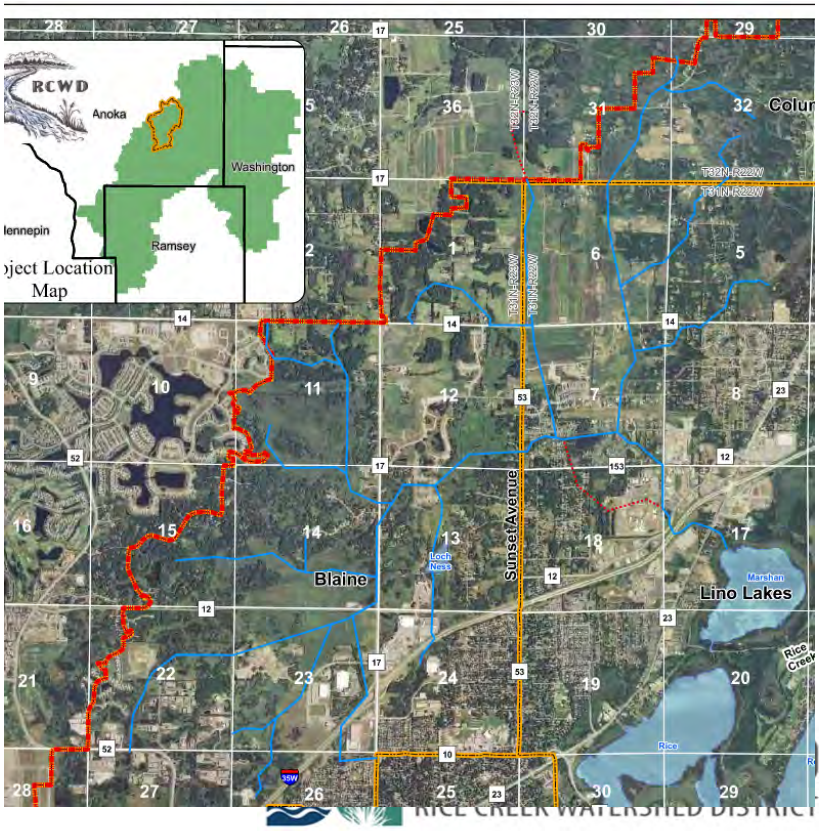
ACD 10



ACD 22



ACD 32

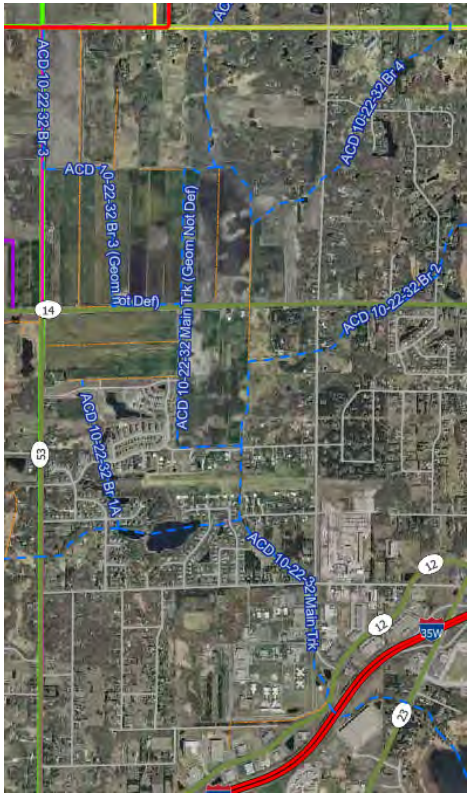


Unique Challenges with ACD 10-22-32

- “Replumbing” of multiple systems

1898 alignment

2024 alignment



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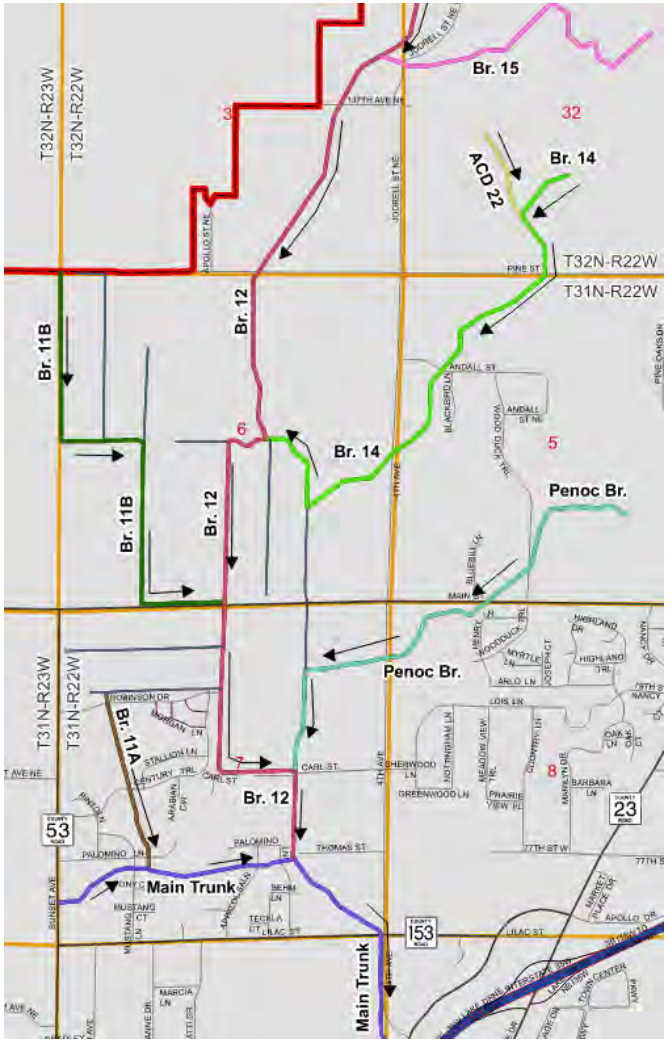
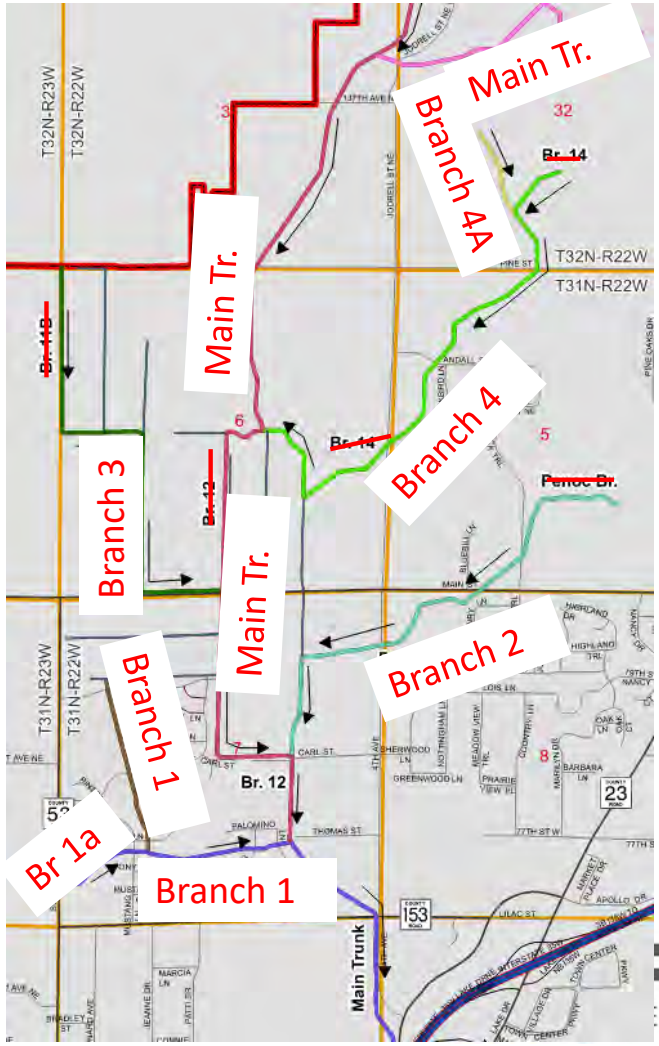
Unique Challenges with ACD 10-22-32

- Consolidation of systems
- Prior to M.S. 103E.101 Subd. 4a



Pre-consolidation



Post-consolidation

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Unique Challenges with ACD 10-22-32

Why Is This Important?

- Construction of system was fragmented
- Many undocumented modifications
- On-the-ground evidence of ACSIC is obliterated in many locations
- Multiple “forces of change” on the landscape
  - Drainage authority
  - Landowners
  - Land development
  - Mother Nature (erosion and settlement)

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Potentially Relevant Documents

- Over 125 documents in RCWD database
- More documents provided during 2022 public hearing

Year	Document Title	Type
1890	Profile of ACD 10 Branches A and B.*	Plans - Drawing -
1890	Profile of ACD 10 Main Line, Branches A and B.*	Plans - Drawing -
1890	Auditors Notice of Pendency of Petition. November 19th*	Legal documents
1890	Plat of ACD 10. August	Plans - Drawing -
1891	Order Establishing a Ditch and Branches. January 7th	Order - Establishm
1891	Assessment Made on Land ACD 10. April 10th*	Report - Viewers
1893	ACD 22 Cut Sheets. December 23rd*	Plans - Drawing -
1893	Plat of ACD 22.	Plans - Drawing -
1893	Profile of ACD 22.	Plans - Drawing -
1894	Assessment Made on Land ACD 22. June	Report - Viewers
1894	Proof of Inspection by County Surveyor of ACD 22. June 21st	Legal documents
1894	Order Establishing ACD 22. March 3rd*	Order - Establishm
1894	Printers Affidavit - Sale of Ditching Jobs. May 3rd	Legal documents
1894	Contract and Bond for ACD 22 Constructions. May 3rd	Legal documents
1898	ACD 32 Branch 13 Cut Sheets. July 11th	Plans - Drawing -
1898	ACD 32 Main Trunk Cut Sheets. July 11th	Plans - Drawing -
1898	Viewers Report in Ditch Proceedings ACD 32. July 11th	Report - Viewers
1898	ACD 32 Branch 5 Cut Sheets. July 11th	Plans - Drawing -
1898	Order Establishing ACD 32. September 3rd	Order - Establishment
1898	ACD 32 Branch 15 Cut Sheets. July 11th	Plans - Drawing - Establishment - Cut Sheets
1898	ACD 32 Branch 1 Cut Sheets. July 11th	Plans - Drawing - Establishment - Cut Sheets
1898	ACD 32 Branch 12 Cut Sheets. July 11th	Plans - Drawing - Establishment - Cut Sheets
1898	Auditors Notice of Pendency of Petition. September 3rd	Notifications
1898	ACD 32 Branch 6 Cut Sheets. July 11th	Plans - Drawing - Establishment - Cut Sheets
1898	ACD 32 Branch 9 Cut Sheets. July 11th	Plans - Drawing - Establishment - Cut Sheets

ID	Title	Author	Date	Notes	ACD 10-22-32 Drainage System Record and ACSIC	Other ACD 10-22-32 Management	Other Water Resources Management
CCWD_01	Notice of Permit application Status	Wenck & Associates	6/18/2003	Interim correspondence regarding permit application for Carlos Avery Estates			x
CCWD_02	Permit Application - Grading & Development	Royal Oaks Realty	4/15/2003	Permit Application for Carlos Avery Estates			x
CCWD_03	Carlos Avery Photo_00	Unknown	Unknown	Photo at unknown location			x
CCWD_04	Carlos Avery Photo_01	Unknown	Unknown	Photo at unknown location			x
CCWD_05	Carlos Avery Photo_02	Unknown	Unknown	Photo at unknown location			x
CCWD_06	CCWD Database entry	CCWD	7/28/2015	Documentation of inquiry to CCWD by Perry Wagamon			x
CCWD_07	Permit Communications	CCWD	Multiple	Multiple interim correspondence regarding permit application for Carlos Avery Estates			X
CCWD_08	Final Inspection letter	CCWD	12/9/2008	Final inspection letter and escrow return for Carlos Avery Estates			X
CCWD_09	Permit - Carlos Avery Estates	CCWD	3/12/2004	Permit for Carlos Avery Estates			x
CCWD_10	Plan View Drawings	Multiple	Multiple	Multiple maps and surveys of area near Carlos Avery Estates			X
CCWD_11	Escrow receipt	CCWD	4/16/2003	Receipt of escrow for Carlos Avery Estates			x
CCWD_12	Correspondence_01	Multiple	Multiple	Correspondence includes: 1) request for fund for escrow; 2) Letter from COE; 3) Letter from Anoka Conservation District; 4) email from CCWD; 5) Permit from COE; 6) rare species letter from CCES; 7) Letter from BWSR; 8) Email from landowner on flooding concerns; 9) planning commission minutes; and 10) DNR review letter			x
CCWD_13	HydroCAD model	Plowe Engineering	4/29/2003	Hydrologic model for Carlos Avery Estates			x
CCWD_14	Easements and covenants	Royal Oaks Realty	Multiple	Multiple easement documents for Carlos Avery Estates			x
CCWD_15	Wetland mitigation documents	Multiple	Multiple	Multiple wetland mitigation documents related to Carlos Avery Estates			x
CCWD_16	Wetland delineation report	Earth Science Associates	12/1/2002	Wetland delineation report for Carlos Avery Estates			x

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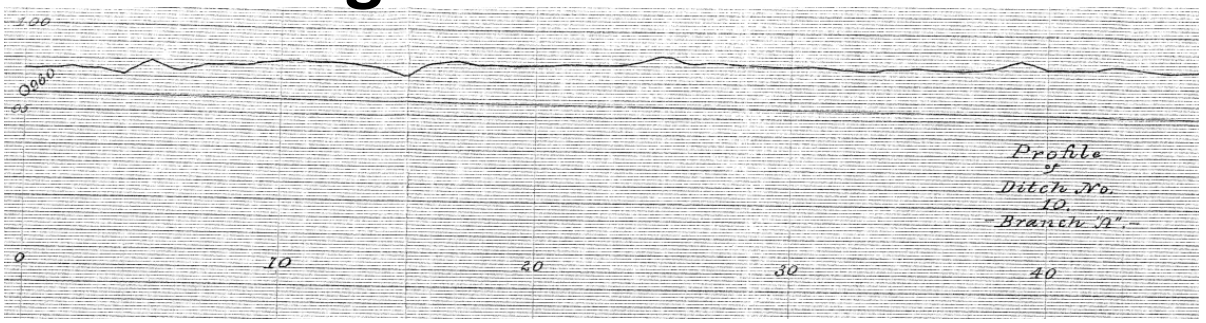
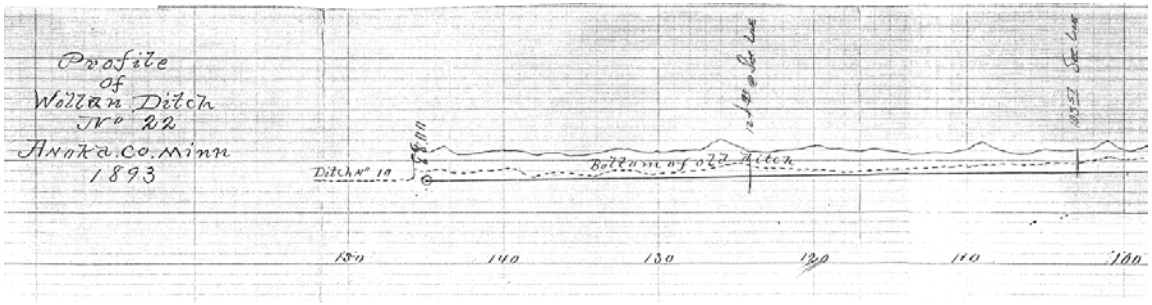
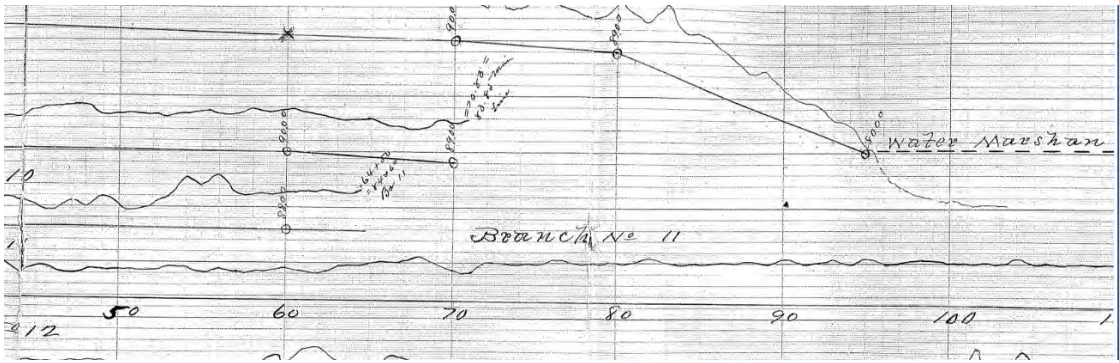
Relevant Documents
ACD 10,22, & 32 As-Designed Profiles

- Design plans (not as-built)
- Arbitrary datum; benchmarks no longer exist (spike in tree; fencepost, etc.)
- Many branches do not share a common datum (i.e. intersections between branches do not necessarily share the same elevation)
- Each plan set AND each branch must be evaluated independently against survey data

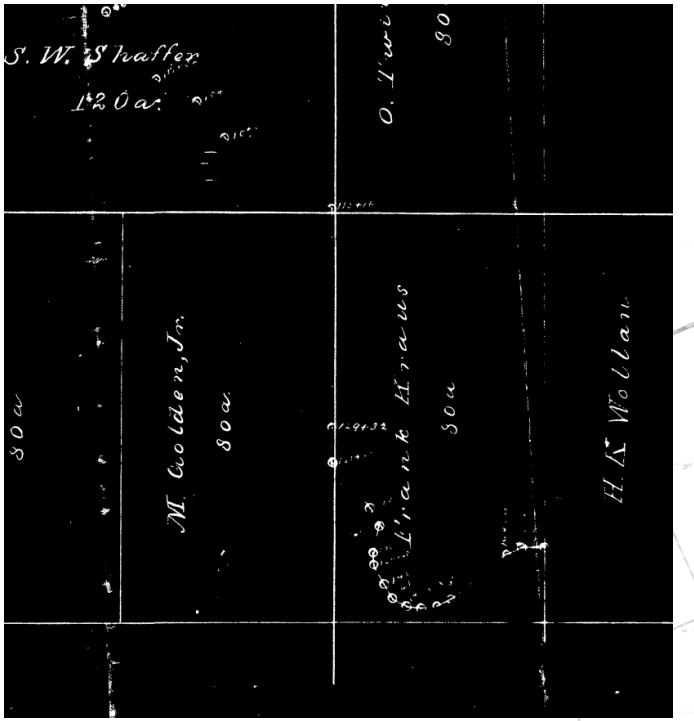


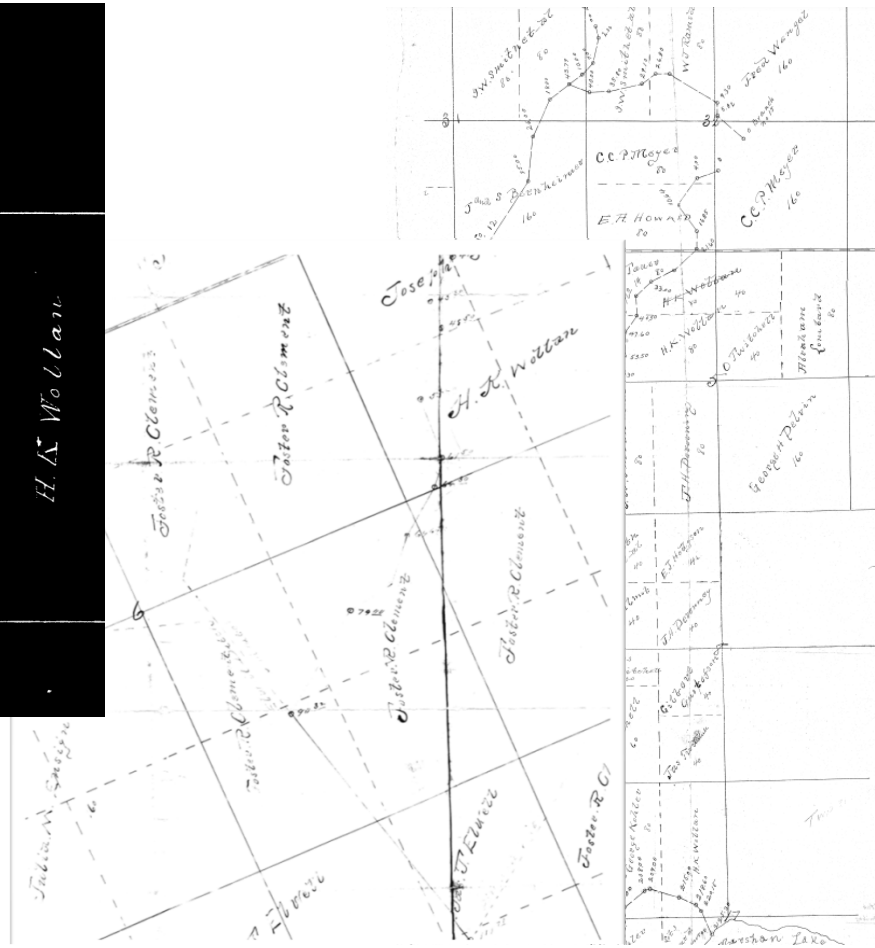




Relevant Documents
ACD 10,22, & 32 As-Designed Profiles

- Basis for profile elevations
- Fragmented
- Majority of original system south of Pine Street no longer exists on same alignment





Relevant Documents – As-Designed Cut Sheets

- Depth of cut = Original surface elevation minus as-designed grade
- Current adjacent ground surface is different than pre-ditch ground surface
  - Location of measurement
  - Tilling
  - Grading
  - Erosion/deposition
  - Subsidence
  - Crop removal (sod)

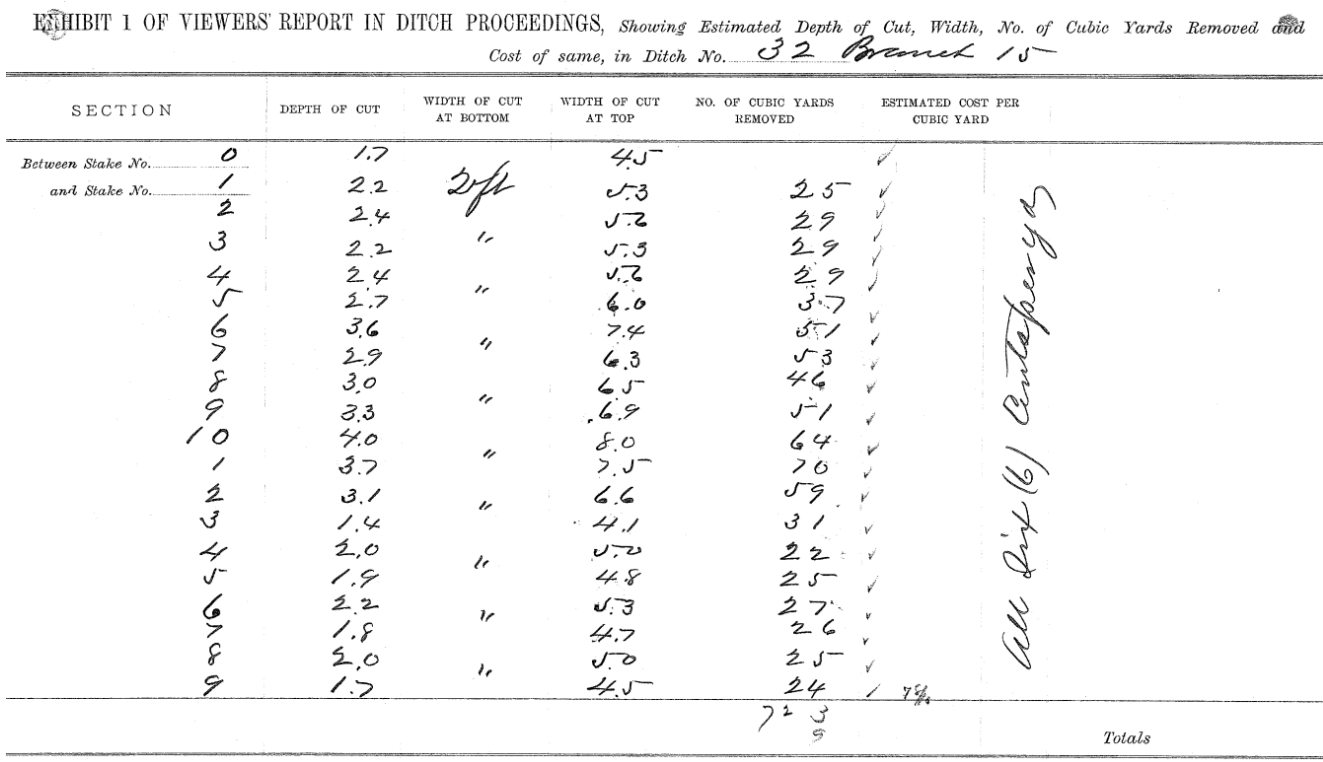


EXHIBIT 1 OF VIEWERS' REPORT IN DITCH PROCEEDINGS, *Showing Estimated Depth of Cut, Width, No. of Cubic Yards Removed and Cost of same, in Ditch No.* 32 Branch 15

SECTION	DEPTH OF CUT	WIDTH OF CUT AT BOTTOM	WIDTH OF CUT AT TOP	NO. OF CUBIC YARDS REMOVED	ESTIMATED COST PER CUBIC YARD
Between Stake No. 0 and Stake No. 1	1.7	2ft	4.5	25	
1 and 2	2.2		5.3	29	
2 and 3	2.4	"	5.2	29	
3 and 4	2.2		5.3	29	
4 and 5	2.4	"	5.2	29	
5 and 6	2.7		6.0	37	
6 and 7	3.6	"	7.4	51	
7 and 8	2.9		6.3	53	
8 and 9	3.0	"	6.5	46	
9 and 10	3.3		6.9	51	
10 and 11	4.0	"	8.0	64	
11 and 12	3.7		7.5	70	
12 and 13	3.1	"	6.6	59	
13 and 14	1.4		4.1	31	
14 and 15	2.0	"	5.2	22	
15 and 16	1.9		4.8	25	
16 and 17	2.2	"	5.3	27	
17 and 18	1.8		4.7	26	
18 and 19	2.0	"	5.0	25	
19 and	1.7	"	4.5	24	7½
				723	Totals

All Dirt (6) Embankments

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Relevant Documents – Repairs

- 1908 & 1915 Repairs
  - As-Designed Cut depths provided, no profile
- 2013 Repairs
  - <u>As-built</u> repair depths
  - Do not “set” the ACSIC, but are indicative of ACSIC grade

EXHIBIT 2 OF ENGINEER'S REPORT IN DITCH PROCEEDINGS

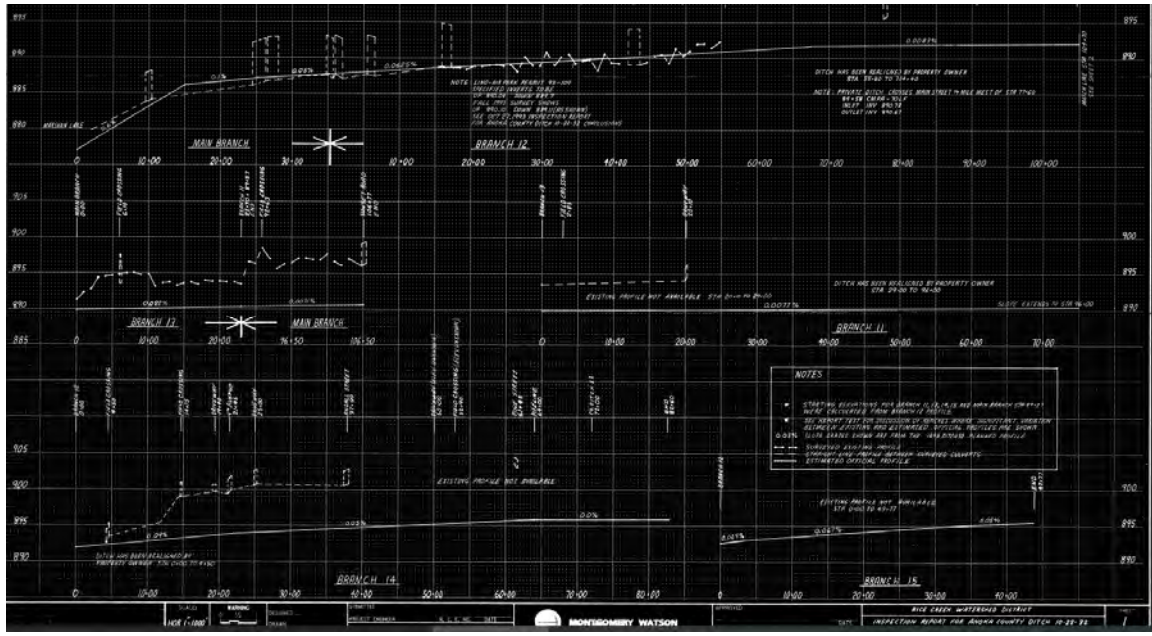
Showing Estimated Depth of Cut, Width, No. of Cubic Yards Removed and Cost of Same, in Ditch No.

Ammended Report Summary Repairs Co. Ditch No. 32

SECTION	(1) DEPTH OF CUT	(2) WIDTH OF CUT AT BOTTOM	(3) WIDTH OF CUT AT TOP	(4) No. OF CUBIC YARDS TO BE REMOVED	(5) Estimated Cost Per Cubic Yard $ CTS.	(6) Character of Other Expenses, Including Preliminary Expenses and Expense of Inspecting Works Until Completed With Total per Section	$ CTS.	(7) Total Estimated Cost per Section $ CTS.
Between Stake No.								
and Stake No.	Total Branch No 2			546 cu yds	cost of excavation 81.90	other Items. Culvert	30 00	111.90
Between Stake No.	" "	No. 3		345 " "	51.75	"	30 00	81.75
and Stake No.	" "	No. 4		3758 " "	563.60	Clearing & Culverts	45 00	608.60
Between Stake No.	" "	No 9		8143 " "	1221.45	" "	45 00	1266.45
and Stake No.	" "	No. 10		1995 " "	299.25	" "	120 50	419.75
Between Stake No.	" "	No. 11		9081 " "	1479.25	" "	37.00	1516.25
and Stake No.	" "	No. 12		10999 " "	1776.55	" "	161.50	1938.05
Between Stake No.	" "	No. 14		5267 " "	790.05	" "	97.50	887.55
and Stake No.	" "	No. 15		945 " "	141.75	" "	54.00	195.75
Between Stake No	" "Penoc"	Ditch		11149 " "	1672.35	" "	155.00	1827.35
and Stake No.	" "	" Extension		3234 " "	485.10	"	30 00	515.10
Between Stake No.	" Main	Ditch		7313 " "	1462.60	" "	197.50	1660.10
and Stake No.	Total Est Cost of Construction			62,775	10,025.60		1093.00	11023 60
Between Stake No.								
and Stake No.								

Relevant Documents – Prior ACD 10-22-32 Profile Reviews

- Montgomery Watson (1993)
  - Partial system
  - Attempted to relate ditch elevation to as-designed grades
  - Methods not well documented
  - Recommended soil borings be completed before repairs are completed



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Relevant Documents – Prior ACD 10-22-32 Profile Reviews

- EOR (2005)
  - Purpose was to establish an "official profile" for evaluating potential repairs
  - "Official Profile": RCWD term – profile to use for repair decisions (not necessarily ACSIC)
  - Official profile determination for ACD 10-22-32 based on <u>as-designed</u> condition

MEMORANDUM

EMMONS & OLIVIER RESOURCES

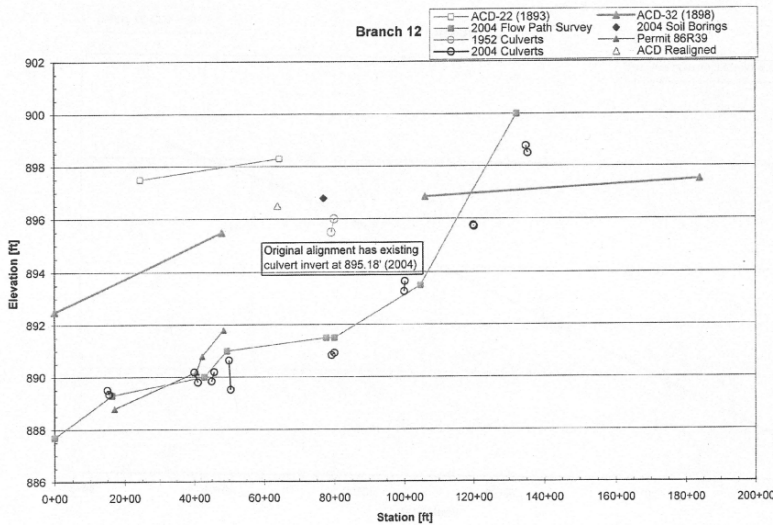
To: Steve Hobbs
From: Eli Rupnow and Greg Graske, PE

Subject: ACD 10-22-32 Official Profile Analysis – Technical Memorandum (for file) **Date:** September 8, 2005

Background

Anoka County Ditch 10-22-32 (ACD 10-22-32) is a ditch system constructed in the 1890's. Ditch 10-22-32 is a combination of three ditch systems. Ditch 10 was designed in 1890 to drain east from Blaine through the City of Lino Lakes. Ditch 22 was added approximately three years later and drained south to its outlet at Ditch 10. Ditch 32 extended Ditch 10, constructed in 1898 to drain north and east through the City of Lino Lakes. In 1911-12 the portion of Ditch 32 serving what is now the city of Blaine was reconfigured to flow south through Ditch 53-62 into the City of Circle Pines and to Golden Lake. The remaining system, ACD 10-22-32 drains southeast to Marshan Lake.

The ditch consists of three major projects: Ditch 10 – designed in 1890 and constructed the following year, Ditch 22 – designed in 1893 and constructed in the following one to two years, and Ditch 32 – c
up the curre



Relevant Documents – Prior ACD 10-22-32 Profile Reviews

- EOR (2005)
  - Attempted to rectify as-designed profiles to sea level based on:
    - Cut depths
    - Soil borings
      - Three borings, all south of Pine St.
    - Lake Drive culvert
    - Marshan Lake elevation
  - Range of values was 797 to 802. Report chose 802 as “reasonable”

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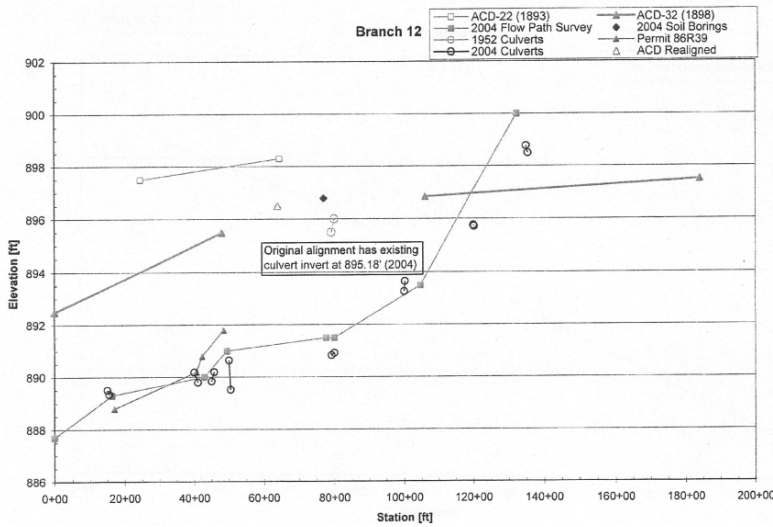

Relevant Documents – Prior ACD 10-22-32 Profile Reviews

- EOR (2005)
  - EOR plotted profiles along entire system based on datum conversion, with adjustments for each branch
  - Official profile elevation at Jodrell St. is 0.45’ lower than ACSIC grade
  - Official profile elevation at Pine St. is nearly identical to ACSIC grade
  - Official profile elevation ½ mile south of Pine St. is 4 feet higher than ACSIC grade (out of ditch banks)

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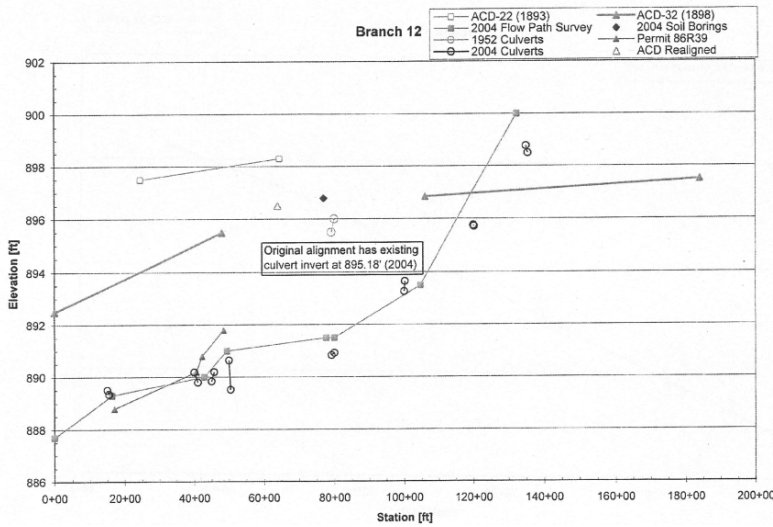
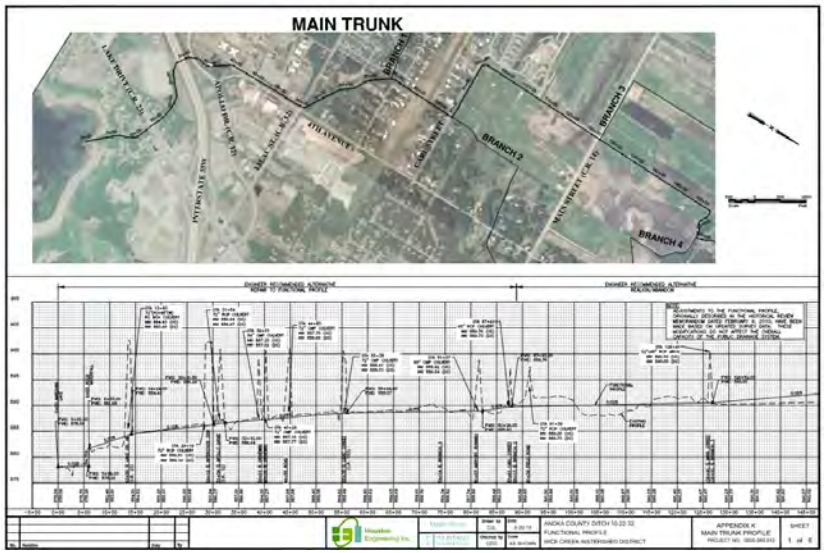


Relevant Documents – Prior ACD 10-22-32 Profile Reviews

- HEI (2010)
  - Purpose was to identify a profile that provides relief (positive grade) to landowners ("functional profile")
  - Function profile was <u>not</u> intended to represent the ACSIC grade in all locations
  - Report identified that due to substantial undocumented modifications, infeasible to reconstruct system to as-designed alignment & grade



Functional Alignment and Grade

Because of the degree to which undocumented modifications have altered the public drainage system, a restoration to the As Designed / Established alignment and profile is no longer feasible nor appropriate. In order to ensure that a level of drainage is protected for the benefitting parties to the public drainage system, the legal alignment and grade may be reestablished, through proceedings under the drainage code, to be identical to the Functional Alignment and Grade. This would ensure a continuous, accessible and maintainable drainage system using existing open channels for the entire benefitting area.

Relevant Documents – Prior ACD 10-22-32 Profile Reviews

- HEI (2010)
  - Functional profile based on the elevation of major culverts with consideration of the existing channel bottom
  - Provided positive grade (other than at “teepee” on Branch 1)
  - Profile was used to determine where repairs were needed. Open ditch repairs removed accumulated sediment to ACSIC grade (as identified in field and with consultation of Engineer)

Revised Final

MEMO

External Correspondence

HoustonEngineering Inc.

Date: February 9, 2010

To: Doug Thomas
District Administrator, RCWD

Cc: File 5555-080.10

From: Chris Otterness, P.E.
Mark Deutschman, PhD., P.E.

Subject: Anoka County Ditch (ACD) 10-22-32
Historical Review

INTRODUCTION

The purpose of this memorandum is to provide the Rice Creek Watershed District (RCWD) with a historical review of the Anoka County Ditch 10-22-32 (ACD 10-22-32) system and to describe the components of the current system necessary to maintain historic function similar to when the drainage system was originally constructed and subsequently improved. Anoka County conveyed jurisdiction of this

MAIN TRUNK

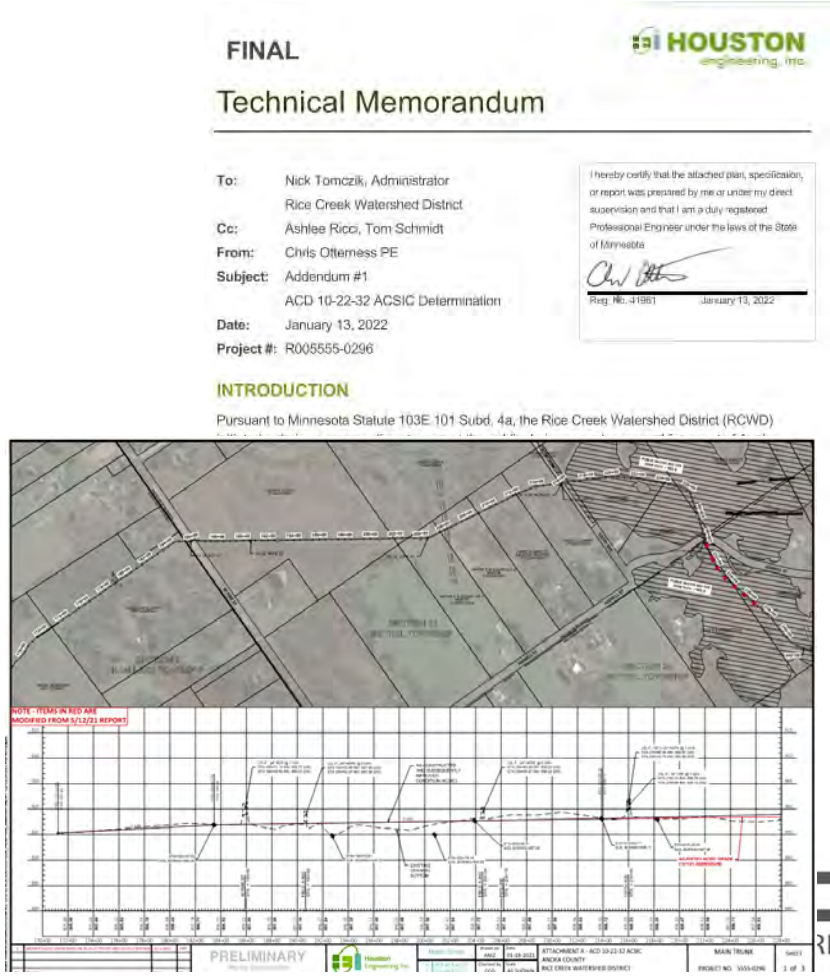
BRANCH 3

BRANCH 2

BRANCH 4

Relevant Documents – Prior ACD 10-22-32 Profile Reviews

- HEI (2022)
  - Purpose was to identify ACSIC grade north of Pine Street
  - This location substantially less modified than remainder of system
  - ACSIC memorialized via reestablishment of record proceeding
  - Downstream system provides a functioning outlet



FINAL

HOUSTON engineering, inc.

Technical Memorandum

To: Nick Tomczik, Administrator
Rice Creek Watershed District
Cc: Ashlee Ricci, Tom Schmidt
From: Chris Otterness PE
Subject: Addendum #1
ACD 10-22-32 ACSIC Determination
Date: January 13, 2022
Project #: R005555-0296

I hereby certify that the attached plan, specification, or report was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Minnesota

Reg. No. 41981 January 13, 2022

INTRODUCTION

Pursuant to Minnesota Statute 103E.101 Subd. 4a, the Rice Creek Watershed District (RCWD)

ACSIC Determination Process

1. Alignment
2. Survey
3. Mapping
4. Historic Docs
5. Compare Elevations
6. Plot as-designed profile
7. Check Correlation
8. Consider other data
9. Identify Outliers
10. Internal review
11. External review

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How This Methodology was Used
ACD 10-22-32 North of Pine St.

1. Alignment
   - Previously determined (2010 historic review)
2. Survey
   - Channel bottom, soil borings/probes, cross-sections
3. Mapping
   - Mapped in CAD
4. Historic Docs
   - Completed during 2010 historic review
   - Refresher on documents during 2022 process

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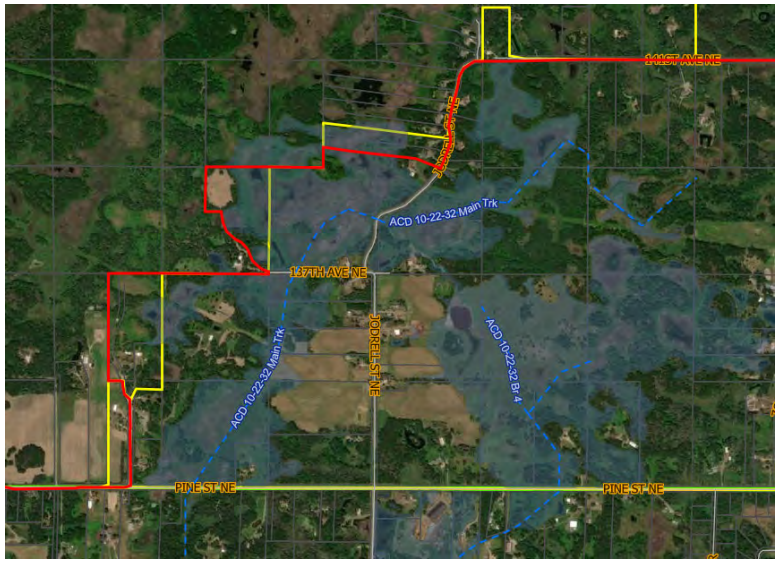
ACSIC Determination Process

Compare Elevations

- Compared MT profile to ACD 32 Br. 12 and 15
- Compared Branch 4 profile to ACD 22
- Compared Branch 4 Lat. 4 to ACD 32 Br. 14

6. Plot as-designed profile
7. Check Correlation
   - Good correlation on Branch 4
   - Poor correlation on Main Trunk
     - “Trendline” created on based on soil borings



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ACSIC Determination Process

8. Consider other data
   - Cut-sheet data – too variable and unreliable
   - Prior profile investigations – did not use borings north of Pine Street
9. Identify Outliers
   - "High borings" likely due to not hitting center of channel perfectly
   - "Low borings" likely due to scour, deep peat, and/or localized over-excavation
   - Disconnect between as-design profile and ACSIC: many plausible reasons

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ACSIC Determination Process

Internal Review

11. External Review
    - RCWD Staff
    - DNR
        - No comments on ACSIC, comments on repair depth
    - RCWD Board and public (hearing)
        - Additional documents submitted (Step 4)
            - No change in profile required
        - Board requested test pit and additional borings near Jodrell (Step 2, 5, 6, & 9)
            - ACSIC at Jodrell lowered by 0.5’ (addendum)

RCWD
RICE CREEK WATERSHED DISTRICT

Workshop #2 Takeaways

- Multiple profile investigations have been completed on ACD 10-22-32 for multiple purposes
- Unique history of ACD 10-22-32 creates multiple challenges for determining ACSIC system-wide
- Most recent investigation (2022) north of Pine Street utilizes standard methodology for determining ACSIC

RCWD
RICE CREEK WATERSHED DISTRICT