

Introduction

- Welcome
- Thank you for attending
- Food and restrooms
- Notes and presentation will be posted online after the meeting
- Please hold questions for Q&A
- Stay for dinner

Tonight's Agenda

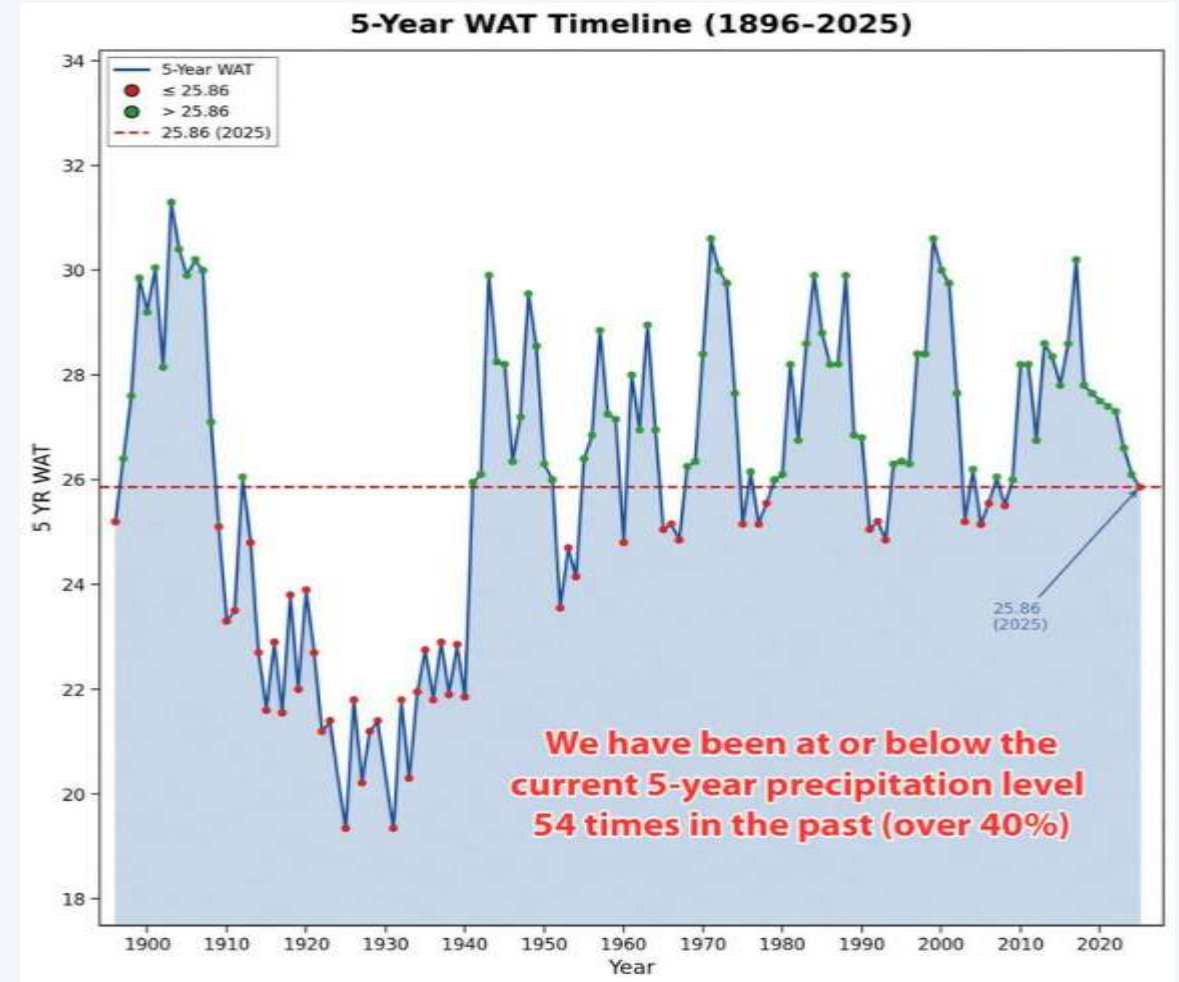
- Breaking news
- What is Woman Lake Action (WLA)?
- The Rock Arch Rapids (RAR) Project
- WLA findings to date
- Remaining unknowns
- Path moving forward
- How you can help
- Lawmakers' comments
- Questions and answers

Woman Lake Action (WLA)

- Informal group of concerned citizens
- Formed in response to lawmaker recommendations and citizen concerns
- Mission: advocate for independent review of the Longville RAR
- Website: womanlake.org
- Approach: gather documents, separate facts from assumptions, and follow the evidence
- Not a corporation, nonprofit, engineering firm, or scientific authority
- We are **not** seeking to assign blame; our goal is to get reliable answers
- We can make mistakes

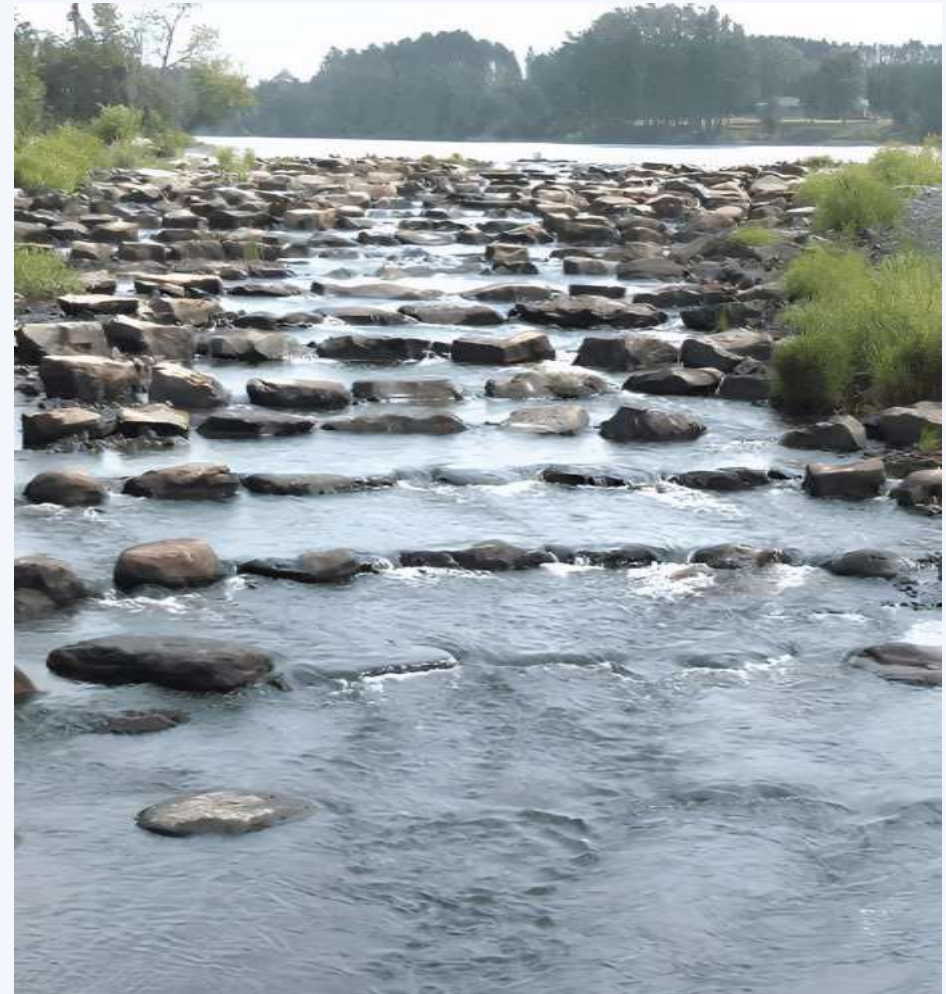
Drought Must Be Part Of The Analysis

- We don't dispute the current drought is affecting lake levels
- Historical analysis suggests we have been here before
- KEY QUESTION: Is the new RAR outlet **also** affecting lake levels
- We believe a **fact-based independent hydraulic analysis** can help separate these causes



What is a Rock Arch Rapids (RAR)?

- Minnesota DNR defines a RAR as:
 - A nature-like structure used to replace or modify dams
- RAR objectives:
 - Reconnect fragmented habitats so native fish can return upstream
 - Create riffle/pool habitat, resting pools, and spawning areas
 - Provide a more stable structure requiring less maintenance
 - Reduce dam-failure risk from storms and runoff increases
 - Stabilize stream grade and reservoir sediments
 - About 75+ RAR projects throughout MN



NGVD 29 vs. NAVD 88

- **NGVD 29:** National Geodetic Vertical Datum of 1929
- **NAVD 88:** North American Vertical Datum of 1988
- Two different vertical reference systems used to measure elevation
- Lake level data reported in **NGVD 29** (DNR Lakefinder.com)
- Engineering firms use **NAVD 88**
- In our area, a **+0.70 ft. VERTCON adjustment** is applied to convert NGVD 29 values to NAVD 88

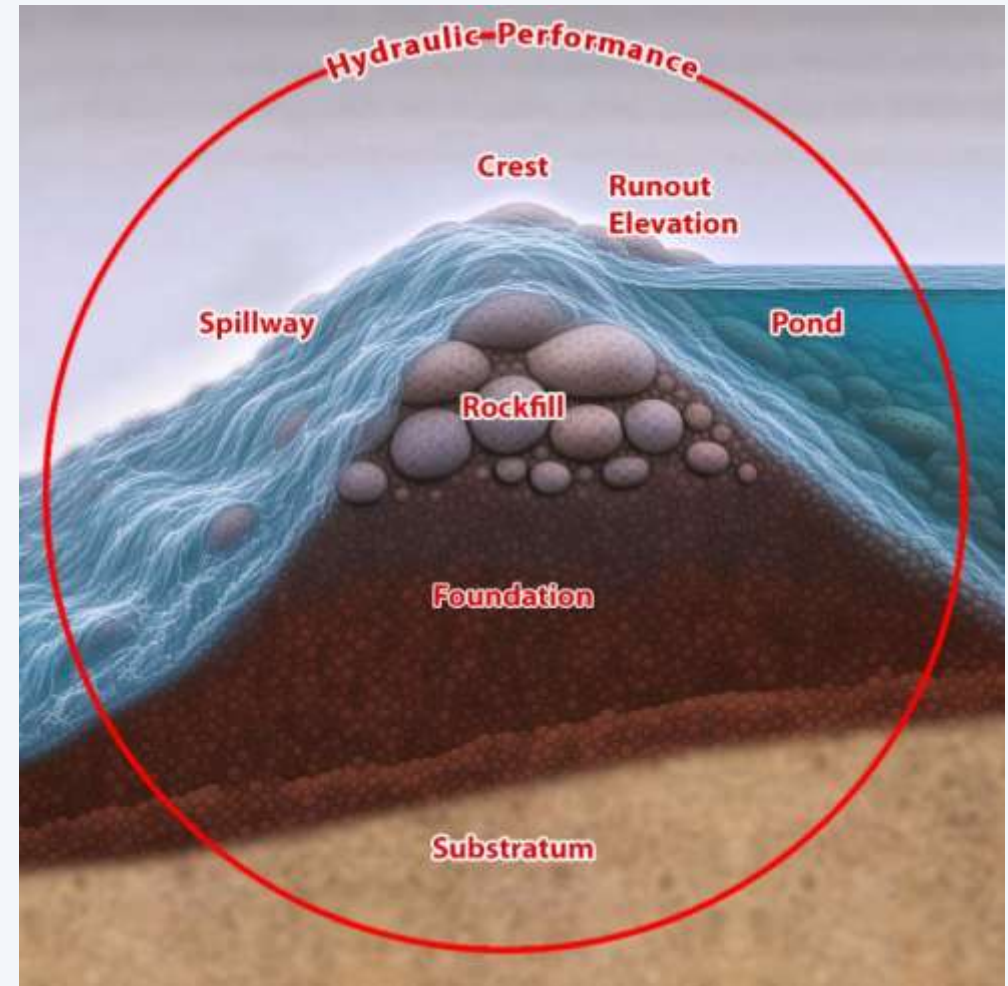
Lake Level Summary for Girl Lake (Adjusted to NAVD 88); source DNR Lakefinder.com

Category	NGVD 29 (ft)	NAVD 88 (ft)	Notes
Highest Recorded	1325.02	1325.72	Recorded July 2, 1953
Ordinary High-Water Level (OHWL)	1323.60	1324.30	20.4" above crest; 91 years of data (413 points)
Long-Term Average	1323.43	1324.13	18.36" above crest; 91 years of data (413 points)
Crest	1321.90	1322.60*	Set 1.2" above historic low
Recent Level (08/31)	1322.34	1323.04	5.2" above crest.
Lowest Recorded	1321.80	1322.50	Recorded February 28, 1935

* The crest will typically be stated as 1322.6 ft. which is NAVD 88

Dam Terminology

- **Crest** — Top of structure
- **Runout elevation** — Control point where water first begins to flow over an outlet
- **Spillway / flow path** — Designed route that safely carries water downstream
- **Pond** — The water immediately upstream of a control structure, driving flow over or through it
- **Rock fill / substrate / foundation** — The underlying rock or engineered base supporting and stabilizing the hydraulic structure
- **Hydraulic performance** — How effectively a structure conveys water, including capacity, flow behavior, and energy dissipation



Assurances Given for Longville RAR Project

- Project records repeatedly describe the intended result as:
 - Maintain the historic runout elevation (which DNR states is 1322.6 NGVD 29)
 - Provide equivalent hydraulic performance to old dam
- Important distinction: a **specified crest elevation** alone does not answer whether the completed project performs the same hydraulically as the former outlet system
- These assurances frame the questions for an independent review

Getting Our Bearings



Photo Record: Before Construction - September 3, 2025



Photo Record: Before Construction - October 21, 2025



Photo Record: After Construction - November 6, 2025

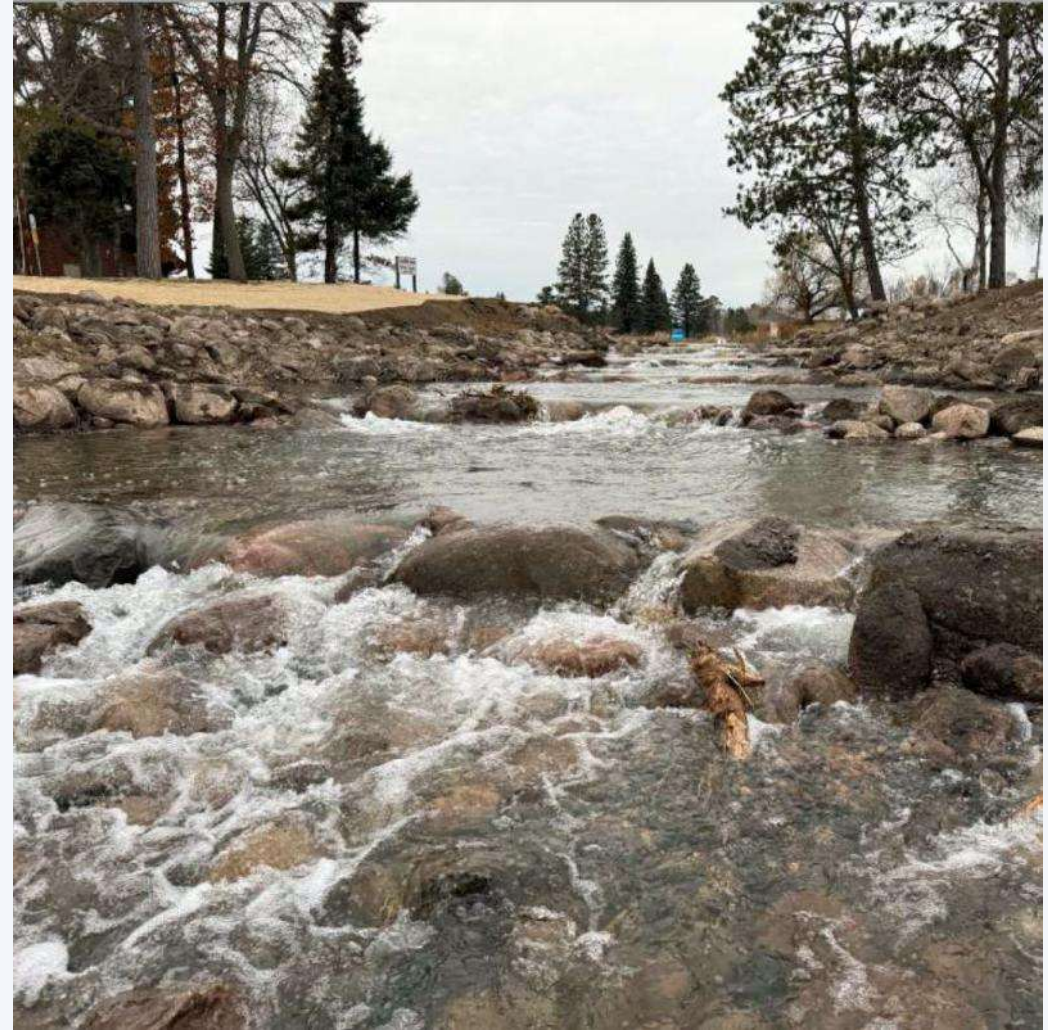


Photo Record: Post Construction - January 7, 2026

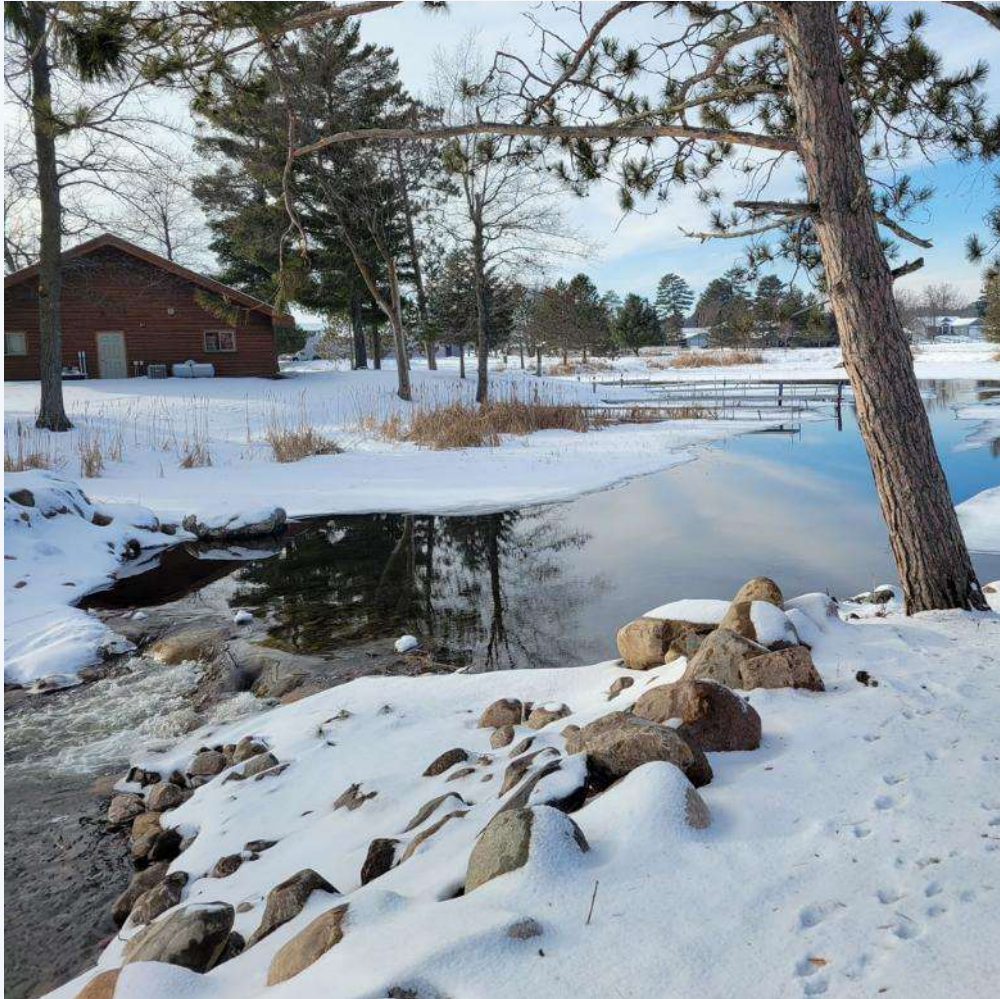


Photo Record: Construction Phase Comparison

Rock shading added to help orient a comparison between stages.



Pre-Construction



During Construction



Post-Construction

Photo Record: Different Points of Boy River - August 28, 2026



Hackensack



Longville

Photo Record: Same Location, Different Years



October 13, 2022
(**22.3** inches precipitation YTD
Child Lake at **1323.50** on 8/13/22)



September 1, 2026
(**15.5** inches precipitation YTD
Child Lake at **1321.87** on 08/12/26)

Timeline – September 2025 to August 2026



Minnesota Data Practices Act Requests

- Requests made to Cass County and DNR in June under Minnesota Statutes Chapter 13
- Cass County:
 - Provided timely response with design documents, correspondence, and pre- and post-construction photographs
 - Some key information appears to remain missing or incomplete, including field-survey sheets, runout elevation documentation, and hydrologic discharge materials
- DNR:
 - Initial said request was too broad to respond
 - Has still not provided substantive documents after narrowing our requests
- The document record remains important to the independent review process

The Petition Drive

- Launched in response to recommendation by state lawmakers after visit on July 31
- First petitions captured on August 3
- Petition asks for independent engineering review of the RAR:
 - Does it maintain historic runout elevation?
 - Does it provide equivalent hydraulic performance?
- Promotion included lawn signs, newspaper advertising, business posters, and internet advertising
- Result: Over 1,100 petitions as of today

Petition Support Summary

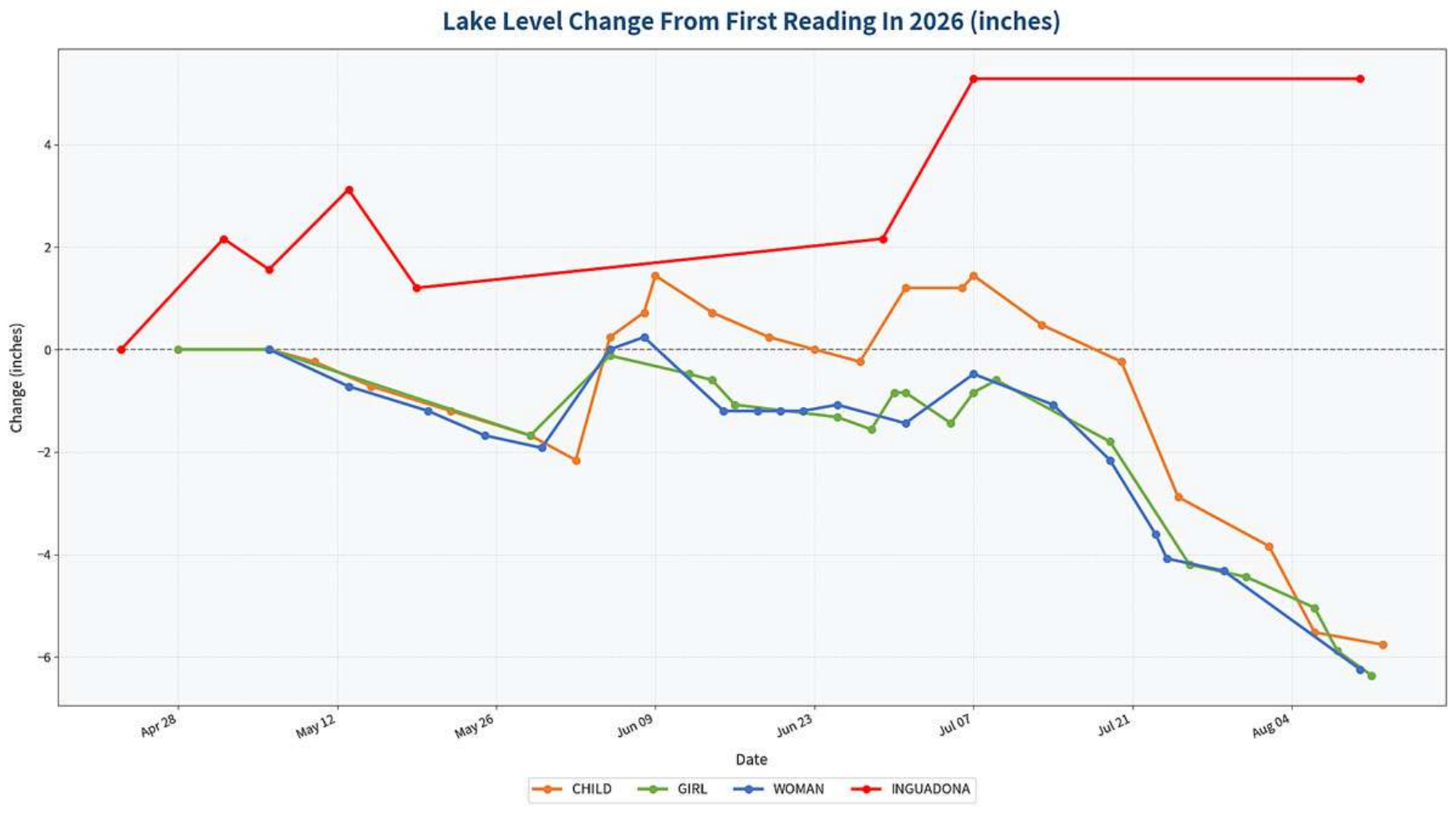
- Responses from 20 states
- 67% property owners
- Classification of expressed concerns:
 - Navigation and access to property (32%)
 - Blame RAR (17%)
 - Wildlife and water quality (11%)
 - Costs and property value (8%)
 - Historic low water levels (8%)
 - Tourism and local businesses (6%)
 - Other (18%)



Potential Economic Impacts

- Additional dock sections and repositioning costs
- Propeller and lower-unit damage concerns
- Harbor, inlet, and channel dredging
- Shoreline and riprap repairs
- Rental cancellations or refunds
- Marketability of property and property valuations

Lake Level Comparison



Boy Lake Public Access - August 8, 2026

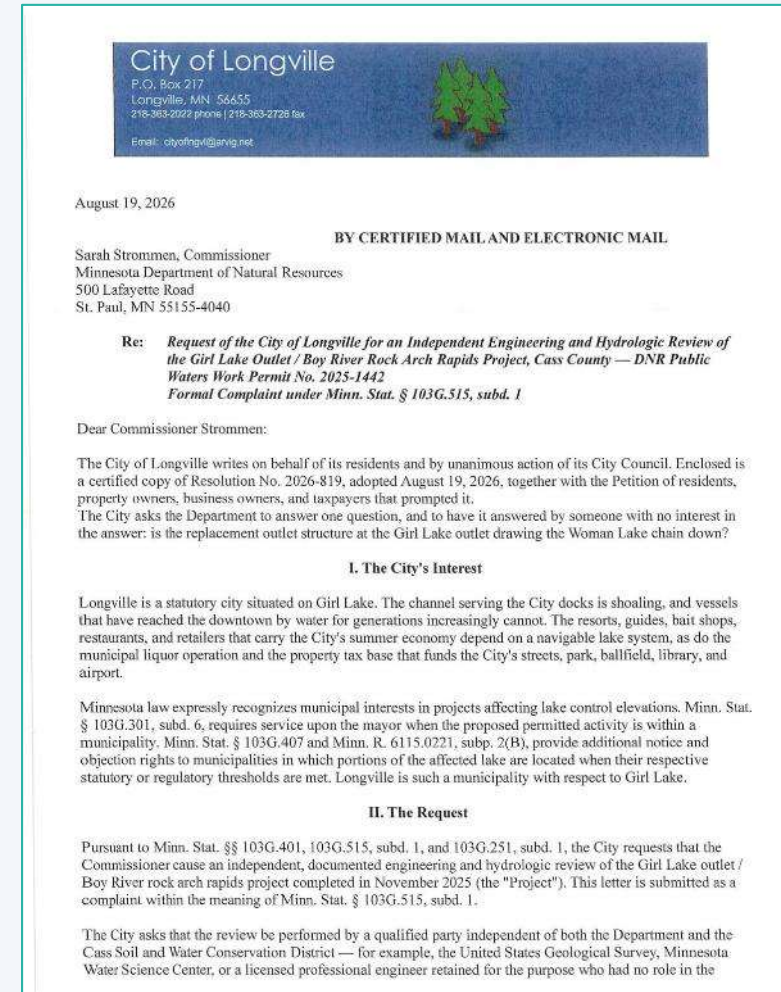


Drought Does Not Answer the Hydraulic Question

- Drought and precipitation conditions are real and must be part of the analysis
- Historical lake-level information helps place 2026 conditions in context
- The key question remains whether the post-construction outlet performs equivalently to the former outlet system
- Only an independent hydraulic review can answer that question reliably

City of Longville Action

- MN law provides procedures for DNR examination of water-control structures and for proceedings concerning establishment and maintenance of public-water levels
- August 19: City adopted resolution requesting DNR review and independent evaluation of the outlet issue
- City formally placed the issue before the DNR Commissioner
- City action strengthens the request for a credible, independent technical review



Discharge Measurements

- Discharge analysis completed at three locations on August 19
- Girl Lake outlet discharging approximately three times more water than measured at upstream inflows
- The difference between those measurements was approximately 2 million gallons per day (subject to change over time)
- These measurements raise an important hydraulic questions requiring independent engineering analysis
- Additional measurements under varying flow and precipitation conditions are needed
- The measurements do not, by themselves, determine full causation or the complete water budget



STREAM DISCHARGE MEASUREMENT REPORT

Woman Lake Chain of Lakes

Cass County, Minnesota

This report summarizes instantaneous discharge measurements collected by Northeast Technical Services, Inc. (NTS) on August 19, 2026 at three locations on the Woman Lake chain. The locations were provided by Mr. Jeff Davis of Woman Lake Action. A field report with supporting files and photographs is attached to this report as Appendix A. Due to equipment connectivity issues, one discharge file could not be obtained from the device; photographs of that discharge measurement and summary from the device are included in the field report. The instrument file was improperly named Child Lake Dam at the time of collection.

1. Locations

- Culvert-CRS Inflow — Boy River inflow at Cass County Road 5.
- Blackwater River Inflow — connecting channel from Blackwater Lake into Woman Lake at Cass County Road 11.
- Girl Lake Outflow — discharge from Girl Lake to Boy River near Minnesota State Highway 84, (improperly named Child Lake Dam on flow tracker file)

2. Reported Results

Results are presented in Table 1. Positive values indicate flow in the expected direction for that site.

Table 1. Instantaneous discharge measurements, 19 August 2026

#	Location	Rule	Discharge (cfs)
1	CRS Inflow	Inflow to Woman Lake	1.57
2	Blackwater River Inflow	Inflow to Woman Lake	-0.01
3	Girl Lake fish ladder outflow	Outflow from Girl Lake	4.57

Notes: cfs = cubic feet per second.

3. Technology & Methodology

Measurements were collected with a SonTek FlowTracker2 Handheld Acoustic Doppler Velocimeter (ADV). The instrument transmits a short acoustic pulse and records the Doppler shift of sound scattered back from particles and bubbles in a small sampling volume offset from the probe. Additional information is available from the manufacturer. Discharge was computed using the mid-section (area-velocity) method described by NTS' QM-30S Flow Measurements SOP (Appendix B).

Woman Lake Chain Discharge Measurement Report - 19 August 2026

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Contractor Preliminary Observations

- Crest elevation appears consistent with the specified design elevation
- Openings between crest rocks appear to permit flow **below** top of nominal crest
- Subsurface or interstitial flow **through** the structure is a potential issue requiring engineering evaluation
- Our observations should be confirmed and integrated into independent review of former channel-and-dam control system



Remaining Unknowns:

What Actually Controlled Historic Low-Flow Outlet?

- Available records indicate engineering firm identified a pre-project channel high spot approximately 10 feet upstream of the former dam
- Records reviewed to date do not appear to establish the high spot's precise elevation, coordinates, station, width, or cross-section
- Old dam was **downstream** of that channel feature; records do not establish whether high spot alone controlled low flow or whether high spot *and* dam worked together
- During construction, portions of upstream channel were excavated and existing material was moved downstream
- After sanitary sewer discovery, first two weirs shifted downstream, with first weir ultimately moved about 12 feet from its planned station

Remaining Unknowns:

Missing Technical Information

- The precise surveyed elevation and location of the pre-project upstream high spot – was this the effective runout level of the old dam?
- The pre-project channel width, cross-section, roughness, and hydraulic control characteristics
- How excavation and movement of channel material changed the upstream control area
- Whether the final RAR reproduces the former channel-and-dam configuration during low-flow conditions
- An as-built hydraulic comparison between the former outlet system and the completed RAR

Path Moving Forward

- Finalize independent engineering review scope and RFP
- Issue RFP and receive responses
- Evaluate qualifications, cost, timing, and independence
- Award contract and complete engineering study
- Report findings to the public, City, lawmakers, and agencies
- Determine appropriate administrative, legislative, or corrective action based upon the findings
- Preserve legal remedies if necessary

Lawmakers' Address

- Conversations with DNR
- Potential legislative actions
- Advice to citizens
- How can local residents maintain a constructive and effective public record

How You Can Help

- Help cover our expenses to date:
 - We've incurred approximately \$17,000 in costs to date (yard signs, newspaper ads, hydrologist, AV equipment, attorney fees, etc.)
 - We've only collected approximately \$3000 to date
 - Established a bank account at First National Bank in Longville
 - Make checks payable to Jeff Davis and mail to: PO Box 226, Longville, MN 56655
- Contribute to the independent review effort
- Volunteer your time and talent
 - Needed expertise: engineering, grassroots advocacy, financial bookkeeping, administration, and public communication
- Write a letter to the editor
- Encourage responsible media coverage
- Respond at **womanlake.org**

Questions You Asked

- Can outflow be reduced while the issue is studied?
- Is the new structure hydraulically equivalent to the former dam and channel system?
- What is the role of drought?
- What will an independent study examine?
- What happens after the study?
- What legal, administrative, or legislative options exist if a problem is confirmed?
- What can citizens do now?

Moderated Question Period

- Raise your hand and wait for a microphone
- Identify yourself by name and speak clearly into the microphone
- Please limit your question to one minute so others can participate
- Focus questions on facts, process, and the path forward
- Please avoid speeches, personal attacks, or technical debates