

Technical Memorandum

To: Nick Tomczik
District Administrator, RCWD

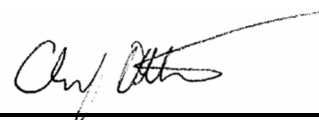
Cc: Tom Schmidt, RCWD Drainage and Facilities
Manager
John Kolb, Rinke-Noonan

Date: July 14, 2026

From: Chris Otterness, PE

Subject: Ramsey County Ditch 2 & 5 Petition for Realignment
and Impoundment -- Engineer's Findings

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



7/14/2026

Chris Otterness
Reg. No. 41961

Date

HEI Project #: R005555-0366

INTRODUCTION

On April 22, 2026, the Rice Creek Watershed District (RCWD) Board of Managers under Resolution 2026-05 petitioned action and initiated proceedings to modify Ramsey County Ditch (RCD) 2 and RCD 5 pursuant to Minnesota Statute Section 103E.227. The purpose of the drainage system modifications is for the construction of a portion of the New Brighton / St. Anthony Village / Roseville Basic Water Management Project (#2013-01); specifically the Jones Lake Restoration Project. The RCWD Board of Managers appointed Houston Engineering, Inc. (HEI) to investigate the effects of the proposed modification under MS 103E.227 and file a report of findings. This memorandum documents the engineer's findings.

PROJECT BACKGROUND

The Jones Lake Restoration Project is part of an implementation plan developed through a comprehensive stormwater study of the RCD 2 watershed completed by RCWD and its partner cities. This study identified known flood damage locations and identified potential projects to mitigate risks of future flood damage. The currently proposed project on Jones Lake will create new temporary flood storage to avoid adverse downstream flooding from the implementation of future projects. The future projects, also identified in the RCD 2 implementation plan, include increasing culvert capacity at CSAH 88 on RCD 5 and increasing storm sewer capacity on RCD 2 Branch 1 to Jones Lake. Both projects are upstream of Jones Lake and without the project, the conveyance improvements would create adverse downstream flooding conditions, making them infeasible. In addition, the Jones Lake Restoration Project provides multiple benefits including water quality treatment and ecological restoration of the degraded water body.

The Jones Lake Restoration Project is situated at the upstream end of RCD 2 and the downstream end of RCD 5. Project components include excavation within Jones Lake (above and below the normal water level); modification of the existing lake outlet, construction of a sediment forebay, and construction of an access route to the project. To accomplish these project components will require modification of the RCD 2 and RCD 5 public drainage system, as indicated in **Figure 1**. The following is a summary of the proposed modifications of RCD 2 and 5.

- Modify the current impoundment of RCD 2 that serves as the outlet for Jones Lake. The existing structure will be removed and replaced with a new structure approximately 400 feet downstream. The new structure will maintain normal water levels at current conditions but will have a higher top crest to impound flood flows at a higher elevation and increase the storage capacity in the lake. This impoundment affects portions of RCD 2 that are upstream of the dam. In addition, RCD 5 is located just upstream of RCD 2 (via Jones Lake) and is likewise hydraulically affected by the impoundment.
- Realign the portion of RCD 5 that is downstream (north) of Lakeview Point Drive (approximately 850 feet of ditch). The ditch bottom will be moved approximately 20 feet to the east from its current location to enable access from Lakeview Point Drive to the Jones Lake Restoration Project for construction and maintenance. This will also make access easier for future maintenance of the public drainage system and decrease erosion in the channel.

Note: A sediment forebay will also be constructed as part of this project over a portion of RCD 5. The construction of this forebay will not affect the hydraulic function of RCD 5. A future phase of the Basic Water Management Project includes increasing the capacity of the RCD 5 culvert under CSAH 88 / I-35W interchange.

The proposed project is shown in **Figure 1**. All proposed modifications are within the property that is owned by the City of New Brighton, under a City easement, and/or within the RCD 2 & 5 right of way. The City of New Brighton is a project partner.

UTILITY OF SYSTEM / OUTLET ADEQUACY

In reviewing the utility of the system, we consider whether the petitioned modification will result in a decrease of capacity / outlet function for upstream landowners, the likelihood of the project affecting the adequacy of the outlet, and maintainability of the modified system into the future.

The RCD 2 and RCD 5 drainage systems were originally constructed to provide an outlet for agricultural lands. As the land developed in subsequent decades, the purpose and function of the system transitioned into a municipal outlet. As such, the utility of the system and adequacy of the outlet is related to the prevention of flood damage to upstream roadways (10 to 100-year rainfall recurrence) and prevention of flood damage to building structures (100-year rainfall recurrence).

The effects of the proposed modifications of RCD 2 and RCD 5 were evaluated at three locations:

- 1) Downstream of the project at the Old Highway 8 crossing: At this location, the proposed project reduces flood elevations downstream of Old Highway 8 for the 2-year through 50-year events, with decreases ranging from 0.1 feet for the 2-year event to 2.0 feet for the 50-year event. For the 100-year event, the proposed project increases the peak flood elevation by approximately 0.3 feet immediately downstream of the outlet structure which reduces to less than 0.1 feet by 1st St NW. These increases do not have the potential to impact any structures. As such, the project preserves and enhances the function of the downstream RCD 2 public drainage system, the maintainability of this portion of the drainage system will be preserved, and the outlet is adequate for the proposed modification
- 2) Upstream of RCD 2 at Jones Lake: The 100-year flood elevation at this location will increase from 899.11¹ to 900.44 as a result of the combined Jones Lake project and future capacity improvements through CSAH 88, an increase of 1.33 feet. The lowest adjacent structure is at elevation 903.12, approximately 2.7 feet above the proposed 100-year elevation. As such, the project provides adequate protection of adjacent structures and does not affect the capacity of the system or ability to outlet for adjacent landowners. Further, the proposed impoundment decreases the magnitude of maintenance needed into the future by stabilizing the outlet.
- 3) Upstream of CSAH 88: The project will decrease peak water levels upstream for the 100-year event by 1.1 to 1.4 feet. As such, this project results in no negative impact to upstream utility of the drainage system. The capacity and ability to outlet for these upstream landowners will not be negatively affected, nor will the ability to maintain upstream portions of the public drainage system. Rather, RCD 5 will be more stable and have greater access for inspection and maintenance.

BENEFITS

The proposed drainage system modifications are necessary for implementation of the Basic Water Management Project, and specifically to decrease flood risk on multiples structures upstream of CSAH 88 including the Interstate 35W roadway. Currently, the CSAH 88 interchange with I-35W acts as a dam, detaining water for large rainfall events. Increasing the capacity of the culvert under I-35W can decrease the upstream flood damage risk. However, doing this without mitigating downstream effects will increase the flood damage risk on downstream properties. To mitigate downstream effects requires the construction of additional storage capacity in a location that safely attenuate this flows. Jones Lake is the ideal location for this mitigation. As such, the proposed modifications to RCD 2 and 5 enable the future capacity

¹ All elevations provided herein are based on North American Vertical Datum of 1988 (NAVD 88).

augmentation of the CSAH 88 culvert which will significantly decrease flood risk for multiple commercial, industrial, and residential buildings as well as the I-35W roadway.

Other options including land buy-out and redevelopment have been considered in prior reports. These options have been determined to be infeasible and more costly than the proposed option.

In addition to flood reduction benefits, the proposed project also provides the opportunity to significantly reduce downstream sediment and nutrient delivery from Jones Lake via the dredging of accumulated organic material and the construction of a sediment forebay. Further, the project components also result in the ecological restoration of the historic lake habitat.

ENVIRONMENTAL IMPACTS

The effects of the proposed project have been evaluated within an Environmental Assessment Worksheet (EAW). The EAW indicated that no significant environmental impacts would result from the project. The RCWD as Responsible Government Unit adopted a Negative Environmental Impact Statement Declaration, Findings of Fact, and Conclusions of Law and Order.

PERMITS

The project requires approvals from other agencies, including but not limited to:

- A Work in Public Waters permit from the Minnesota Department of Natural Resources;
- Authorization from the Minnesota Department of Natural Resources to increase floodplain levels on Jones Lake
- An NPDES Stormwater Permit for Construction from the Minnesota Pollution Control Agency;
- A Section 401 Clean Water Certification from the Minnesota Pollution Control Agency; and
- A Section 404 Permit per the Clean Water Act from the U.S. Army Corps of Engineers.

The replacement of outlet structure has been deemed to be exempt from the Dam Safety permit program from the Minnesota Department of Natural Resources.

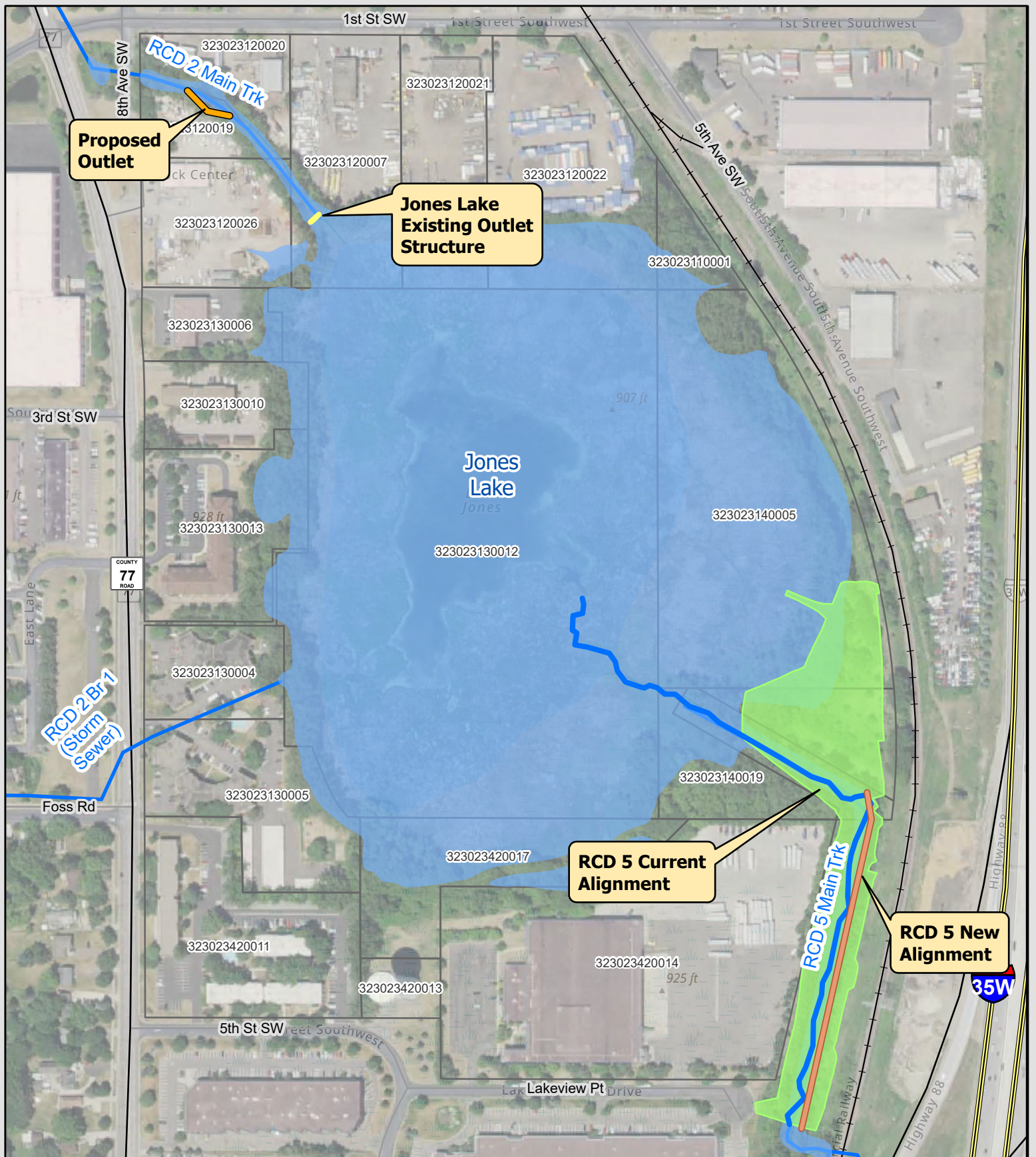
CONCLUSION

Minnesota Statute 103E.227, requires the drainage authority to make an order modifying the drainage system if the project will be of public or private benefit and that it will not impair the utility of the drainage system or deprive affected landowners of its benefit. The proposed project will not impair the utility of the system or deprive affected landowners of its benefit, but rather will enable increased efficiency for both

upstream (RCD 5) and downstream (RCD 2) portions of the drainage systems and provide multiple other public benefits.

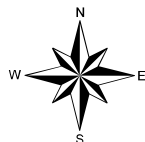
As such, the modifications meet the requirements of Minnesota Statute 103E.227. We recommend the RCWD Board of Managers notice and hold a public hearing on the modifications of RCD 2 and 5. We further recommend the Board adopt a findings and resolution to realign RCD 5 and impound RCD 2 consistent with the proposed plans.

FIGURE 1 – RCD 2 AND RCD 5 MODIFICATIONS



Legend

- Existing Floodplain
- Existing Ditch Alignment
- Existing Outlet Structure
- Proposed Ditch Alignment
- Proposed Ditch and Forebay Boundary
- Proposed Outlet Structure
- Parcels



0 150 300 600
Feet

Figure 1 – Jones Lake Project

Scale: AS SHOWN	Drawn by: KRF	Checked by: CO	Project No.: 5555-0366	Date: 7/8/2026	Sheet:
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 **HOUSTON**
engineering, inc.