



FEBRUARY						
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RCWD BOARD OF MANAGERS WORKSHOP

Monday, February 6, 2023, 1:00 p.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/85413982419?pwd=U0kxeTdKOHY3QXlIR3k2dmpZLzlxZD09>

Meeting ID: 854 1398 2419

Passcode: 129683

Dial by your location +1 312 626 6799 US (Chicago)

Meeting ID: 854 1398 2419

Passcode: 129683

Agenda

ITEMS FOR DISCUSSION (times are estimates only)

- 1:00 Minnesota Stormwater Research Program - Presentation
- 1:30 2022 Financial Report Metro Shooting / Trost Settlements
- 2:00 Anoka County Ditch 10-22-32 Evaluation of Maintenance Alternatives
- 3:00 Legal Boundary Revisions & Considerations
- Administrator Updates (If Any)

1:00 Minnesota Stormwater Research Program -
Presentation



Research funding request

Join us as a financial partner to achieve the 2022 goal of
\$150K

The Minnesota Stormwater Research Council (Council) in partnership with the University of Minnesota Water Resources Center (WRC) is soliciting funds to complete collaborative applied research to address priority stormwater management needs for Minnesota.

Over the past five years, cities, watersheds, organizations, and private businesses have contributed and pooled more than \$625K to support stormwater research through the Council. These funds were then leveraged with Clean Water Legacy Amendment funds to support 23 research projects and support the use of that information by professionals, practitioners, and policy makers. This collective and collaborative work helps prevent, minimize, and mitigate the impacts of urban stormwater runoff across Minnesota.

The accompanying **2022 Program Highlights** summarizes the research completed, new research projects commencing this year and recognizes the partners that have made it possible.

Why contribute?

These investments in research result in discoveries that help Minnesota professionals, practitioners, and policymakers across cities, watersheds, counties, and private businesses –

- ✓ Evaluate and design more effective stormwater practices
- ✓ Manage urban runoff to prevent or reduce impacts to lakes, streams, rivers, and groundwater
- ✓ Maintain investments in stormwater infrastructure for continued effective operation.

Your organization's financial contribution to the Council directly supports research important to you.

Pooling resources adds up and provides a mechanism for completing work together.

Join the growing list of watersheds, cities, private businesses, and organizations supporting urban stormwater research.

Use the online form [HERE](#) to indicate your organization's financial support by October 31st.

How your contribution will be invested and used

Your 2022 contribution to the research funding pool will support a new suite of research projects. Some of those have already been chosen earlier this year through a competitive application process. Your contributions will also be used to support to-be-solicited and chosen near-future projects including priorities to address urban pond research. *See the 2022 Program Highlights for additional information.*

About the Minnesota Stormwater Research Council

Learn more about how cities, watersheds, consultants, state agencies, and research institutions are coming together to guide stormwater research in the [Minnesota Stormwater Research Council Framework](#).

Management and use of funds

- ✓ The use of pooled applied research funds will be managed by the Advisory Board of the Council in partnership with the Water Resources Center.
- ✓ Submissions and projects will be reviewed, ranked, and awarded by the Advisory Board of the Council and by the Center.
- ✓ All researchers, professionals, and experts from Minnesota will be invited to submit proposals. Organizations contributing funds and their staff are eligible to apply.
- ✓ Acknowledgement of funding partners is required by the researchers for each project and on Center and Council reports, website, and other publications.

Please contact one of the following Council Advisory Board Members for more information.

Ross Bintner, City of Edina	RBintner@edinamn.gov	952-903-5713
Lisa Volbrecht, City of St. Cloud	Lisa.Vollbrecht@ci.stcloud.mn.us	320.650.2834
Bob Fossum, Capitol Region Watershed District	bob@capitolregionwd.org	651-644-8888
Rena Weis, WENCK/Stantec	rweis@wenck.com	763-252-6889.
John Bilotta, Water Resources Center	jbilotta@umn.edu	612-624-7708

This letter is distributed on behalf of the Minnesota Stormwater Research Council Advisory Board.

Minnesota Stormwater Research Council

in partnership with the

Minnesota Stormwater Research Program

2022 HIGHLIGHTS



18 research projects
COMPLETED
since 2017

4 ON-GOING
research
projects

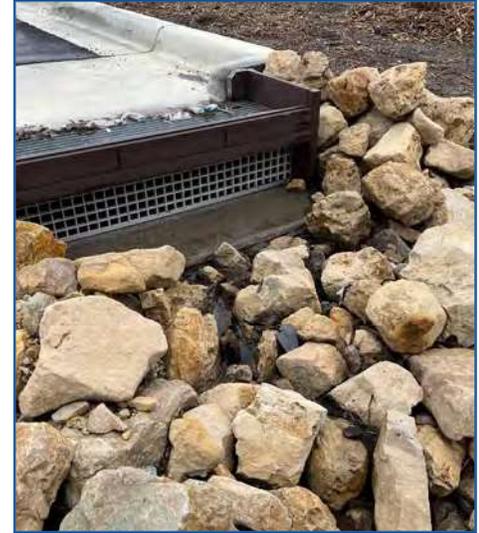
7 NEW research
projects
beginning
2022

also...

- Prioritizing Urban Stormwater Pond Research
- Requesting Research Funds
- Seeking MSRC Advisory Board Member Nominations

Advancing science, technology and management of stormwater in Minnesota by investing in and facilitating research to prevent, minimize, and mitigate the impacts of runoff from the built environment.

The Stormwater Research Council in partnership with the Minnesota Stormwater Research Program



This collaboration pools financial resources to support research, shares research outcomes and engages stakeholders to determine research needs.

Learn more about the council, view the advisory board, and subscribe to our mailing list visit wrc.umn.edu/msrc

ON-GOING STORMWATER RESEARCH PROJECTS

BIOFILTRATION

How can soil mixes in biofiltration practices impact phosphorus capture and release and plant growth?



At what level are gross organic solids contributing to stormwater pollutant loading?



GROSS ORGANIC SOLIDS

BIOCHAR

Will the addition of biochar help filter practices remove bacteria and dissolved contaminants?



Can we combine stormwater monitoring data from various cities, watersheds and agencies to more specifically characterize urban runoff quantity and quality?



MONITORING

NEW 2022 RESEARCH PROJECTS

Rapid Response Projects

- 1 Assessment of Urban Stormwater Chloride and its Impact on Surface Water Trends**
Led by Ben Janke and Jacques Finlay (Univ. of Minnesota), and Brooke Asleson (MN PCA)
- 2 Plants for Stormwater Design and creating an Interactive Selection Tool for Stormwater Professionals and the Public**
Led by John Bly and Rich Harrison (Metro Blooms) and Dan Shaw (Minnesota Board of Water and Soil Resources)
- 3 Evaluation of Media Effectiveness for Removal of Phosphorus and Other Pollutants in High-Volume Stormwater Filtration BMPs**
Led by Randy Anhorn (Nine Mile Creek Watershed District), Andy McCabe and Keith Pilgrim (Barr Engineering)

Discovery Projects

- 4 Iron Enhanced Sand Filters Performance and Maintenance Meta-Analysis**
Led by John Gulliver and Andy Erickson (Univ. of Minnesota), Peter Weiss (Valparaiso University), and Mike Trojan (MPCA)
- 5 Performance evaluation for a stormwater treatment train incorporating sedimentation and geomedia-augmented biofiltration**
Led by Bridget Ulrich, Christopher Filstrip, and Chan Lan Chun (Natural Resources Research Institute)
- 6 Capturing Contaminants of Emerging Concern (CECs) with Biofiltration**
Led by Andy Erickson and John Gulliver (Univ. of Minnesota), Richard Kiesling and Sarah Elliott (Upper Midwest Water Science Center, US Geological Survey)
- 7 Stormwater reduction and pollutant sourcing from urban trees**
Led by Xue Feng, Diana Karwan, and Lucy Rose (Univ. of Minnesota)

Prioritizing Urban Stormwater Pond Research

1. Developed a short term research strategy
2. Completed a comprehensive literature review of past research on ponds - more than 600 published reports were reviewed
3. Established a fund dedicated to pond research
4. Preparing for a pond-only competitive research proposal process in 2022



For more information, please visit our website.

FINANCIAL SUMMARY AND 2022 REQUEST FOR RESEARCH FUNDS

Financial support for the Stormwater Research and Technology Transfer Program is provided by the Clean Water Fund from the State of Minnesota's Clean Water, Land and Legacy Amendment. Additional support comes from the Minnesota Stormwater Research Council and its member cities, watersheds, private businesses, the University of Minnesota Water Resources Center, Minnesota Sea Grant, the College of Food, Agriculture, and Natural Resource Sciences, and the National Institutes for Water Resources funded by the US Geological Survey.



JOIN US as a financial partner to achieve or surpass this year's goal

2022 GOAL

\$150K



Read more about the 2022 request and respond with your organization's commitment on the website at wrc.umn.edu/msrc

THANK YOU to the following cities, watershed districts and organizations, and private sector businesses that provided financial support in 2021:

- Barr Engineering Company
- Capitol Region Watershed District
- City of Bloomington
- City of Edina
- City of Minnetonka
- Emmons & Olivier Resources Inc.
- Mississippi Watershed Management Organization
- Nine Mile Creek Watershed District
- Ramsey-Washington Metro Watershed District
- South Washington Watershed District
- Stantec
- Upper Mississippi River Source Water Protection Project
- Valley Branch Watershed District

Nominate someone for a seat on the advisory board

The Minnesota Stormwater Research Council is seeking new advisory board members starting January 2023. Review the Council Guiding Framework and nomination process on the website wrc.umn.edu/msrc

Contact:

John Bilotta
Senior Research and Extension Coordinator
jbilotta@umn.edu, 1.612.624.7708
wrc.umn.edu/projects/stormwater



Water Resources Center

UNIVERSITY OF MINNESOTA

Driven to Discover® 8

1:30 2022 Financial Report Metro Shooting / Trost
Settlements



MEMORANDUM
Rice Creek Watershed District

Date: January 27, 2023
To: RCWD Board of Managers
From: Nick Tomczik, Administrator
Subject: 2022 Financial Report - Metro Shooting / Trost Settlements

Introduction

The Board established an annual review in February of the level of liability associated with the Metro Shooting / Trost settlements. This is the annual review.

Background

Smith Partners as District counsel inquired with Staff and District Engineer regarding potential changes that are relevant to assessing District liability from the Metro Shooting / Trost Settlement. Please see attached Smith Partners' memo for additional background and context on the matter.

There has been little definitive change in the facts and circumstances relevant to the potential development of the subject parcels. The District has received general inquiries regarding development on some of the subject tracts yet no specific development proposal has been put forth to the District or its consultants. So, there is little change in the ability to assess/forecast the District's potential liability under the litigation settlements.

Staff has inquired and set a meeting with City of Blaine staff on the matter for any additional information and discussion. Staff will share any additional information at the workshop.

Request for Board Consensus

Staff recommend Board review of the current circumstance, discuss, and come to consensus on the District's potential liability statement.

Attachments

Smith Partners' January 30, 2023 Memorandum



250 Marquette Avenue
Suite 250
Minneapolis, MN 55401
(612) 344-1400 tel

www.smithpartners.com

MEMORANDUM

TO: Rice Creek Watershed District Board of Managers

FROM: Louis Smith

RE: 2022 Financial Report
Metro Shooting/Trost Settlements

DATE: January 30, 2023

In 2005, the District entered into settlements with Blaine landowners Metro Shooting Center Corp. and John Trost with respect to those parties' claims concerning the District's management of Anoka County Ditch 53-62. Under the settlements, the District made a payment to each landowner and also, subject to certain terms, committed to supply wetland replacement credits if needed for a landowner to create a specified contiguous upland footprint for development.

In late 2015, the District auditor and attorney advised you as to the circumstances under which this contingent liability should be identified in the District's annual financial reports. We supplied a memorandum dated December 2, 2015. In the interest of public accountability, you waived the attorney-client privilege for the memo.

In the memo, we summarized our guidance as follows:

If it is reasonably possible that the District's obligation will result in a liability in the future, then the liability should be disclosed in its financial reports. If the amount of the liability cannot be reasonably estimated, the disclosure should state that an estimate of the liability cannot be made. In making these determinations, the District may be guided by the advice of its engineer, counsel and auditor. When assumed in 2005, the Metro Shooting and Trost liabilities were subject to a number of uncertainties, and that remains the case. It appears that the collective judgment to date has been that the various uncertainties render the triggering of this potential contingent future liability remote, and therefore not a matter that is required to be disclosed in the annual financial report.

At your December 7, 2015 workshop, by majority vote, you concurred in the finding that this contingent liability is remote and therefore not to be disclosed in the annual financial report. At your February 8, 2016 workshop, again by majority vote, you affirmed this finding for the purpose of the 2015 financial report. At the March 9, 2016 workshop, you passed a motion unanimously "to annually review the liability of the Metro Shooting/Trost contingent liability in February of every year and take a formal vote at the Board meeting as to the remoteness of the liability."

For the 2016 financial report, the Board of Managers adopted the following motion on February 22, 2017:

That the Board of Managers finds the triggering of the potential contingent future liability to be remote, but nevertheless concludes that it should be referenced in the 2016 financial report as follows, or as modified in the auditor's judgment:

In settlement agreements approved in 2005, the District committed that when development occurs on two tracts then owned by the Metro Shooting Center and Trost, the application of the District's wetland rules will not have the result of affording the owner for the Metro Shooting parcel fewer than 100 contiguous upland acres for development, and the owner of the Trost parcel no fewer than 45 such acres. If additional wetland replacement is required to allow for consolidation of the stated acreage, the District will bear the cost of that replacement. The District is unable either to determine as this time the likelihood of this potential future contingent liability, or to estimate the District expense if and when the liability should arise.

For the 2017, 2018, 2019, 2020 and 2021 financial reports, the Board of Managers adopted the same motion on, respectively, February 28, 2018; February 27, 2019; February 12, 2020; February 10, 2021; and February 9, 2022.

For the purpose of the 2022 financial report, pursuant to paragraph (5), American Bar Association Statement of Policy Regarding Lawyers' Responses to Auditors' Requests for Information (1999), the District Administrator has asked us to include in our audit opinion letter an opinion as to the remoteness of this potential contingent future liability. For that purpose, we have regularly made inquiry of the District's permit coordinator (Patrick Hughes) and engineer (Chris Otterness) as to any change in circumstances that may cause the liability now to be less remote so as to alter the District's treatment of it in the financial report. Specifically, our inquiry includes:

1. Any facts (including permitting inquiries to the District or City of Blaine) or statements evidencing a specific intent to initiate development of either tract in the foreseeable future.
2. Any change in District Rule F/Minnesota Wetland Conservation Act or U.S. Army Corps of Engineers Section 404 requirements as concerns wetland impact sequencing, calculation of replacement requirements, or replacement credit location.
3. Any new information regarding the hydrology or soils on either tract as would be relevant to the geophysical suitability of a development footprint.
4. Any new regulatory wetland boundary data for either tract, or new field information suggesting a change in the regulatory wetland boundary.

5. Any new Federal Emergency Management Agency/regulatory floodplain affecting either tract.

As of this date, Mr. Hughes has reported having several meetings with the landowner, and interested developer, the developer's consultant, and the Anoka Technical Advisory Panel and the Corps of Engineers. These parties walked the site in April 2022 to discuss delineation methods. Very limited information has been provided on the proposed development and no application, concept plan or even the size or area of proposed development has been presented. While these meetings indicate an intent to pursue development of the site, there is no basis from which to analyze potential District contingent liability differently than in the past. Mr. Otterness reports that based on current RCWD modeling, when FEMA or the landowner completes a FEMA revision process, the extent of floodplain will shrink considerably, assuming that they use RCWD modeling as a basis for such a revision.

Accordingly, our opinion in our audit opinion letter for the 2022 financial report remains the same as for the prior years noted above: When assumed in 2005, the Metro Shooting and Trost liabilities were subject to uncertainty in a number of respects; this remains the case. To date, the collective judgment has been that these elements of uncertainty together render the likelihood that this potential contingent future liability will be realized remote. Our inquiry to the District staff and the District engineer confirm that while there is some exploration of potential development from the landowner and a potential developer, there is not yet enough information about a development proposal to change the assessment of this issue. We have not otherwise received and are not aware of any additional information that would alter this assessment or otherwise suggest a change in circumstances making the realization of the potential liability more likely. ***We note, however, that receipt of a specific development proposal could change this assessment.***

We would be pleased to answer any questions you may have regarding this matter.

c: Nick Tomczik, RCWD Administrator

2:00 Anoka County Ditch 10-22-32 Evaluation of Maintenance Alternatives

MEMORANDUM
Rice Creek Watershed District



Date: January 31, 2023
To: RCWD Board of Managers
From: Tom Schmidt, Public Drainage Inspector
Subject: Anoka County Ditch 10-22-32 Maintenance Alternatives

Introduction

The District entered into a task order with the district engineer to develop maintenance alternatives to restore drainage function for Anoka County Ditch 10-22-32 (ACD 10-22-32). Specifically north of Pine Street, the alternatives will be discussed, and the engineer will provide a short presentation on the alternatives and their recommendation.

Background

In 2021 the RCWD undertook a review of the As-Constructed and Subsequently Improved Condition (ACSIC) of ACD 10-22-32 north of Pine Street, which resulted in the correction and re-establishment of the drainage system record. The review and associated survey showed isolated capacity limitations in this part of the system. These discoveries prompted staff to work with the district engineer on developing maintenance strategies to address these limitations.

Two utility pipeline/public drainage system conflicts are among the capacity limitations. As part of the ongoing engagement with the various pipeline companies concerning the conflict between their utilities and the public drainage system, staff, and the District's engineer have been developing a maintenance procedure to present to the utility companies when ditch maintenance is happening near or over pipelines. Delineating the responsibilities and commitments will allow for more efficient, timely, and proactive maintenance in the conflict areas. At the same time, the District continues working with the pipeline companies regarding the lowering of their pipelines.

Staff supports adopting the district engineer's recommended maintenance alternative. Adopting a maintenance alternative does not preclude the Board from a more robust approach at a different time. It provides the most practical and quickest way to address the current capacity limitations with minimal regulatory engagement.

Request for Board Consensus

Staff is seeking board consensus on the engineer's recommended maintenance alternative.

Attachments

HEI Technical Memorandum on ACD 10-22-32 Maintenance Alternatives

Technical Memorandum

To: Nick Tomczik; Rice Creek Watershed District Administrator
From: Bret Zimmerman, PE
Cait Caswell, EIT
Through: Chris Otterness, PE
CC: Tom Schmidt, RCWD
Ashlee Ricci, RCWD
Subject: Anoka County Ditch 10-22-32 Evaluation of Maintenance Alternatives
Date: January 23, 2023
Project: 5555-0321

INTRODUCTION

The purpose of this project is to evaluate potential alternatives to restore drainage capacity to a portion of Anoka County Ditch (ACD) 10-22-32, specifically those portions of the Main Trunk upstream (north) of Pine Street (see **Figure 1**). In 2021, the Rice Creek Watershed District (RCWD) completed a review of the As-Constructed and Subsequently Improved Condition (ACSIC) of ACD 10-22-32 north of Pine Street, which culminated in a reestablishment of the public drainage system record per Minnesota Statue 103E. The ACSIC review and associated survey indicated that three road crossings utilize culverts higher than the ACSIC grade. In addition, a pipeline managed by Flint Hills Resources / Minnesota Pipeline is just below the ACSIC grade (creating maintenance challenges), and another pipeline managed by Northern Natural Gas is a location of chronic beaver activity.

Per the RCWD drainage management flowchart, observed isolated deficiencies in capacity along the public drainage systems are addressed through evaluation of minor maintenance alternatives. To understand the benefit, cost, and feasibility of maintenance approaches, HEI evaluated several maintenance alternatives for restoring drainage capacity in this location. These alternatives were modeled, with peak water levels compared at critical locations along the drainage system. This report will summarize these results, along with performance, cost, and regulation considerations, and provide a recommendation for maintenance.

ALTERNATIVES AND MODELING

Modeling Approach

The analysis was performed using XPSWMM (v. 2019.1.3) hydrologic modeling software. All models used the Curve-Number (CN) hydrologic theory, which estimates runoff volumes based on the combination of rainfall input, soil type, and land use at any given location. Hydrologic parameters in all alternatives remain identical, so any changes are directly related to the changes in elevation and/or capacity of drainage system components. The modeling completed for this analysis is short-duration based analysis according to the 24-hour storm. As with all of the District's hydrology/hydraulics models, it does not account for subsurface flow through soil or other long-term hydrologic changes.

Alternative 1 – Existing Conditions

The existing conditions model assumes ACSIC grade in the ditch (including at the two pipeline crossings that have shallow cover) and that culverts are at elevations taken during recent survey in 2020 and 2021. This model was created as a baseline to compare the effectiveness/value of all other alternatives. Note that “existing conditions” along ACD 10-22-32 have changed substantially in the last 10 years as repairs and minor maintenance have been completed along the entire drainage system.

Alternative 2 – Pre-pipeline Hump Cleanout

The pre-pipeline hump cleanout model assumes ACSIC grade in the ditch, culverts at surveyed elevations, and a 2.5-foot-tall hump in the ditch to represent a beaver dam that existed at the Northern Natural Gas pipeline prior to the 2021 maintenance completed at this location by the RCWD. The field crossing culvert at station 275+03, the northernmost culvert, was also modeled at the size and elevation it was prior to the 2021 maintenance activity. This model was created to evaluate the hydraulic impact of this recent maintenance effort with respect to other alternatives.

Alternative 3 – Permitted Grade

The permitted grade model assumes ACSIC grade in the ditch and lowers Pine Street to ACSIC grade. The culverts at 137th Ave are both lowered to the permitted grade established in the 2015 DNR Public Waters Work Permit. All other crossings remain at their surveyed elevations, including Jodrell Street. This alternative is intended to represent the maximum maintenance to ACD 10-22-32 that can be completed without additional regulatory approvals from the DNR.

Alternative 4 – Full ACSIC

The full ACSIC model assumes ACSIC grade in the ditch and lowers the Pine Street, 137th Ave and Jodrell Street culverts to ACSIC grade. All other crossings remain at their surveyed elevations. This is intended to represent a full restoration of drainage system capacity to ACD 10-22-32 to the ACSIC.

Alternative 5 – Full ACSIC with Additional Capacity

The full ACSIC with additional capacity model assumes ACSIC grade in the ditch, lowers the Pine Street, 137th Ave and Jodrell Street culverts to ACSIC grade and adds an additional 24-inch HDPE culvert at all crossings. The purpose of this alternative is to evaluate whether increasing size/number of culvert crossings under any of the roadways will significantly change peak flooding elevations.

RESULTS

Modeling results for each of the five alternatives are provided in **Tables 1 and 2** for the 2-year rainfall (2.7 inches) and 10-year rainfall (4.1 inches), respectively. Peak water surface elevations are reported at seven different locations, each of which is upstream of an existing culvert crossing (see **Figure 1**).

From the modeling results, we can derive the following conclusions:

- The recent maintenance completed in 2021 drastically lowered peak water surface elevations upstream of the Northern Natural Gas pipeline crossing (up to 2-feet). No other maintenance on the public drainage system has the ability to significantly lower peak water surface elevations in this location.
- Lowering the culvert at Pine Street will substantially lower peak water levels on lands between 137th Ave and Pine Street (up to 1.3 feet)
- Lowering the 137th Ave. culvert to the previously permitted grade (Alternative 3) will reduce the peak water surface elevation by 0.3-0.4 feet between 137th Ave. and Jodrell Street and by 0.1 – 0.2 feet just upstream of Jodrell Street. Although this decrease will not substantially affect/enhance adjacent land use, lowering these culverts does provide a nominal increase in capacity and the cost is relatively low.
- Lowering the 137th Ave. culverts and Jodrell Street culverts to the ACSIC grade will further lower peak elevations from 137th Ave to just upstream of Jodrell Street by 0.4-0.7 feet (compared to the Permitted Grade alternative). The benefit of this lowering of peak water elevation is relatively minimal, for a couple of reasons:
 - The decrease in peak water surface elevation extends only to approximately the Northern Natural Gas pipeline crossing. Upstream of the pipeline, these modifications have no discernable effect.
 - The land adjacent to the portion of the ditch affected by the Full ACSIC alternative consists of wetlands. The modeled peak flood events rise up out of the banks of the ditch, but not significantly higher than the grade variations within the wetland. As such, the difference in flood extent in this location for any alternative cannot be discerned when mapped. Further, the flooded areas (most of which are public waters) will remain wetlands under all alternatives due to the high water table in the area and lateral inflows. Therefore, there does not appear to be any significant flood extent change or land use value provided by this alternative
- Increasing the number or size of culverts under any of the crossings has no significant effect on peak flood elevations.

Table 1 – Peak water surface elevations during a 2-year rainfall event

2 year	Location 1 Sta. 275+03 Field Crossing		Location 2 Sta. 264+79 Field Crossing		Location 3 Sta. 230+16 Jodrell St		Location 4 Sta. 216+00 137 th Ave ^[1]		Location 5 Sta. 204+54 Field Crossing		Location 6 Sta. 190+65 Field Crossing		Location 7 Sta. 185+90 Pine St	
	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]
Alt 1. Existing Conditions	901.0	---	900.8	---	900.4	---	900.3	---	899.5	---	899.5	---	899.5	---
Alt 2. Pre-pipeline Hump Cleanout	902.6	1.6	902.6	1.8	900.4	0.0	900.3	0.0	899.5	0.0	899.5	0.0	899.5	0.0
Alt 3. Permitted Grade	901.0	0.0	900.8	0.0	900.2	-0.2	899.9	-0.4	899.2	-0.3	898.9	-0.6	898.3	-1.2
Alt 4. Full ACSIC	901.0	0.0	900.8	0.0	899.5	-0.9	899.3	-1.0	899.3	-0.2	898.9	-0.6	898.3	-1.2
Alt 5. Full ACSIC with Additional Capacity	900.9	-0.1	900.8	0.0	899.5	-0.9	899.3	-1.0	899.2	-0.3	898.7	-0.8	898.2	-1.3

Table 2 – Peak water surface elevations during a 10-year rainfall event

10 year	Location 1 Sta. 275+03 Field Crossing		Location 2 Sta. 264+79 Field Crossing		Location 3 Sta. 230+16 Jodrell St		Location 4 Sta. 216+00 137 th Ave ^[1]		Location 5 Sta. 204+54 Field Crossing		Location 6 Sta. 190+65 Field Crossing		Location 7 Sta. 185+90 Pine St	
	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]	WSE ^[2]	Diff. ^[3]
Alt 1. Existing Conditions	902.1	---	901.7	---	900.8	---	900.6	---	900.1	---	900.0	---	900.0	---
Alt 2. Pre-pipeline Hump Cleanout	904.1	2.0	903.0	1.3	900.8	0.0	900.6	0.0	900.0	-0.1	900.0	0.0	899.9	-0.1
Alt 3. Permitted Grade	902.1	0.0	901.7	0.0	900.7	-0.1	900.3	-0.3	899.5	-0.6	899.5	-0.5	898.9	-1.1
Alt 4. Full ACSIC	902.1	0.0	901.7	0.0	900.2	-0.6	899.9	-0.7	899.9	-0.2	899.6	-0.4	899.0	-1.0
Alt 5. Full ACSIC with Additional Capacity	901.8	-0.3	901.7	0.0	900.2	-0.6	899.7	-0.9	899.7	-0.4	899.5	-0.5	899.2	-0.8

[1] Permitted Grade at 137th Ave is 899.60

[2] Peak Water Surface Elevation Upstream of Crossing

[3] Change Relative to Existing Conditions

RECOMMENDATION

Based on the analysis, the maintenance activities on ACD 10-22-32 providing the greatest impact to drainage system capacity are the continued maintenance of grades at the two pipeline crossings and the lowering of the Pine Street culvert. The RCWD should continue to monitor and maintain the open channel regularly and take actions to control the beaver populations, particularly at the two pipeline crossings. We recommend the RCWD proceed with repairs to lower the culvert under Pine Street. This will require a review of potential wetland impacts under the Wetland Conservation Act and may require a mitigation plan. This will also require coordination with the Cities of Columbus and Lino Lakes as joint road authorities.

Additionally, the culverts under 137th Ave should be lowered to the previously permitted elevation. Although the incremental decrease in water surface elevation is relatively small, there is minimal cost and regulatory engagement required to complete this action.

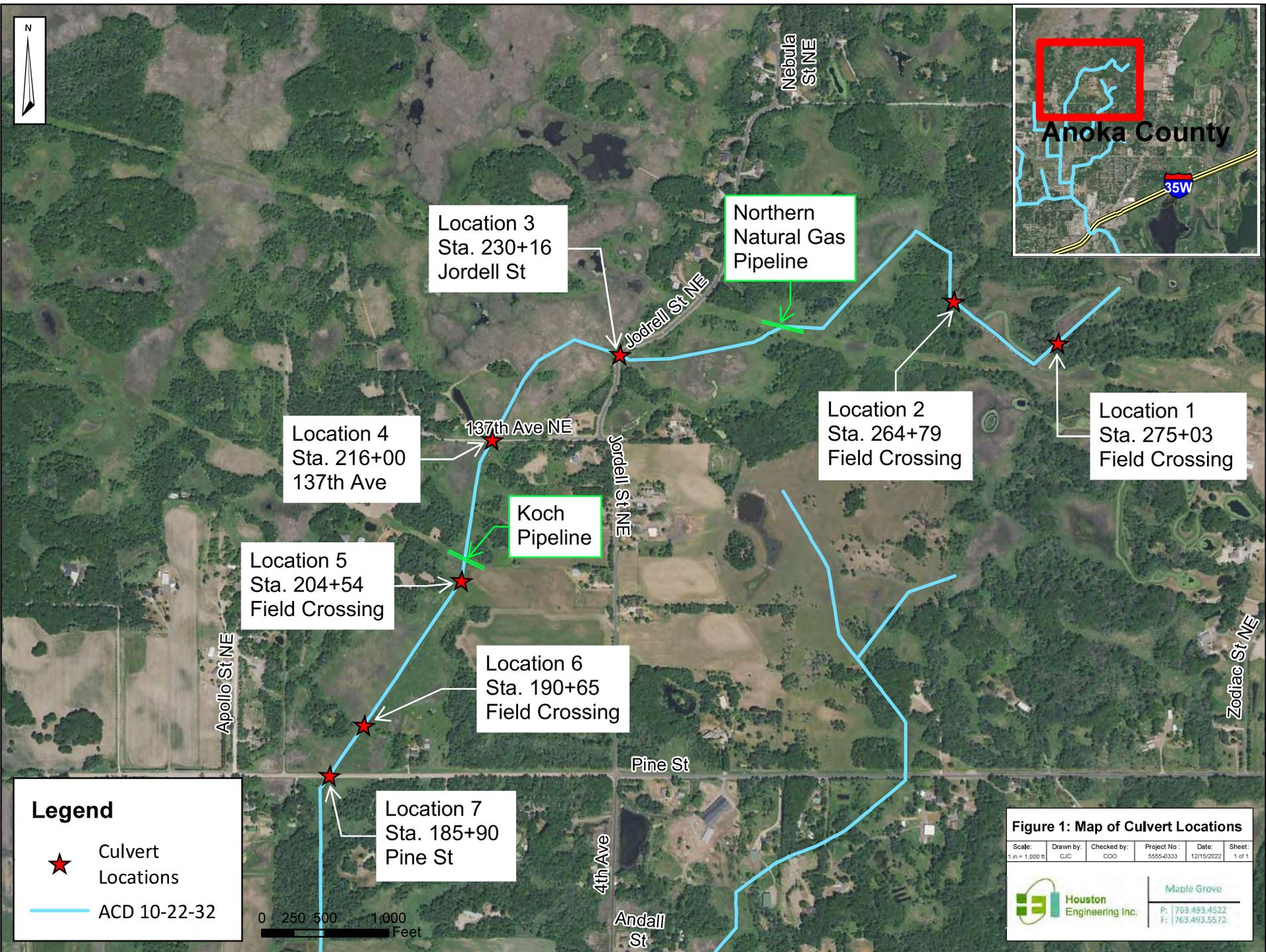
The analysis revealed no significant benefit or necessity of lowering 137th Ave and Jodrell Street culverts to ACSIC grade. Lowering these culverts to ACSIC grade would have no measurable reduction in flooding extent and will not affect the landowner's ability to modify their use of this land. Construction cost for lowering the Jodrell Street culvert would be substantially greater than any of the other maintenance activities, and feasibility and cost of obtaining regulatory approval from the DNR is uncertain.

The two pipeline crossings of the upper portion of ACD 10-22-32 (Flint Hills Resources pipeline between Pine Street and 137th Ave. and Northern Natural Gas pipeline east of Jodrell Street) are both lower than the as-constructed grade of ACD 10-22-32. Though they do not project into the ditch bottom, they have historically impacted maintenance of the public drainage system in multiple ways:

1. Cleanout of the ACD 10-22-32 ditch over each pipeline location has at times been disallowed by pipeline representatives citing pipeline safety guidelines. However, recent cleanout over the Northern Natural Gas pipeline crossing occurred successfully under the authorization and observation of pipeline representatives.
2. Work scheduling in these locations is subject to the availability of pipeline representatives to be onsite. This has delayed the initiation of work in these areas by weeks or even months, and has prevented timely response to observed deficiencies.
3. The elevated hump/berm providing cover over the pipeline on either side of the ditch creates an attractive location for beaver damming efforts. This requires more frequent inspection and maintenance than other portions of the District's public drainage systems.

The preferred solution to these maintenance issues is the lowering of the pipeline. However, due to the significant expense and impact of lowering a pipeline, and given that the pipelines in these locations are not projecting into the original ditch bottom, other near term solutions should be pursued. We recommend continued engagement with the pipeline companies to clarify process, responsibilities, and timeframes when addressing needed maintenance at these and other pipeline crossings in the RCWD.

ACD 10-22-32 Alternatives



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Legend

- ★ Culvert Locations
- ACD 10-22-32

Figure 1: Map of Culvert Locations

Scale: 1 in = 1,000 ft	Drawn by: CJC	Checked by: COO	Project No.: 5555-0333	Date: 12/19/2022	Sheet: 1 of 1
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Houston Engineering Inc.

Maple Grove

P: 763.493.4522
F: 763.493.5572

3:00 Legal Boundary Revisions & Considerations



MEMORANDUM
Rice Creek Watershed District

Date: January 30, 2023
To: RCWD Board of Managers
From: Catherine Nester, Water Monitoring Technician
Subject: Recommended Legal Boundary Revisions between RCWD and MWMO, CRWD, RWMWD & VLAMWO in Ramsey, Hennepin, and Anoka Counties

Introduction

Rice Creek Watershed District (RCWD) boundary change petitions were approved by the Minnesota Board of Water and Soil Resources (BWSR) in 2019 for Washington County and in 2022 for Anoka County. The portion of the RCWD legal watershed boundary currently being reviewed for updates is in the southwest portion of the District in Ramsey, Hennepin, and Anoka counties between the RCWD and the Mississippi Watershed Management Organization (MWMO), Capitol Region Watershed District (CRWD), Ramsey Washington Metro Watershed District (RWMWD), and Vadnais Lake Watershed Management Organization (VLAWMO). This recommended legal boundary revision is associated with ongoing efforts to maintain an accurate watershed boundary based on the best available updated information.

Background

A recommended revised legal boundary between RCWD and MWMO, CRWD, RWMWD & VLAMWO in Ramsey, Hennepin, and Anoka counties has been developed by Houston Engineering, Inc. for the Board's review. The recommended revised legal boundary was developed based on the revised hydrologic boundary that was recently developed for this area in coordination with the 11 affected cities and 4 affected Watershed Management Organizations (WMOs).

The attached draft memo and mapbook describe the recommended legal boundary revisions and show the effects on impacted parcels. The memo includes two key areas of discussion:

1. The recommended boundary would result in the RCWD Board of Managers' primary meeting location (Shoreview City Hall) to be reassigned to the Ramsey Washington Metro Watershed District. If this were to occur, RCWD would no longer be able to utilize Shoreview City Hall as a meeting location.
2. The recommended boundary would add a new city (North Oaks) to RCWD and a new city (Shoreview) to VLAWMO. This may add additional logistical challenges for the respective Cities/WMOs that are proportionally significant to the relatively small number of parcels added/affected.



MEMORANDUM
Rice Creek Watershed District

This information can be used to facilitate boundary discussions with neighboring WMOs and inform a future petitioning of BWSR to initiate a legal boundary change as described in Minnesota Statute 103B.215.

Staff Recommendation

Staff seek Board review of the recommended revised legal boundary described in the attached draft memo and mapbook.

Request for Board Consensus

Board should work towards consensus on a revised legal boundary for the current review area.

Attachments

Draft HEI Technical Memorandum dated January 20, 2023

Draft Mapbook dated December 12, 2022

Technical Memorandum-Draft

To: Nick Tomczik, Administrator
Rice Creek Watershed District

Cc: Catherine Nester

From: Timothy Erickson PE

Through: Chris Otterness PE

Subject: RCWD/MWMO/CRWD/RWMWD/VLAWMO
Recommended Legal Boundary Revisions

Date: January 20, 2023

Project #: R005555-0293

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. 41961

January 20, 2023

INTRODUCTION

The purpose of this memorandum is to recommend modification of the RCWD legal boundary based on the corrected hydrologic boundary within Ramsey and Hennepin Counties and a small portion of Anoka County¹ and to identify parcels that would be impacted by a change in jurisdiction as a result of the legal boundary change. The RCWD or its neighboring watershed management organizations (WMOs) may petition the Minnesota Board of Water and Soil Resources (BWSR) for a change in the legal boundary, as described under Minnesota Statute 103B.215.

The RCWD shares a boundary with four WMOs within Ramsey and Hennepin Counties: Capitol Region Watershed District (CRWD), Ramsey-Washington Metro Watershed District (RWMWD), Vadnais Lake Area Watershed Management Organization (VLAWMO), and Mississippi Watershed Management Organization (MWMO). Agreement has been reached with all neighboring WMOs/WDs regarding the accurate location of the hydrologic boundary between the WD/WMO's, as described within the memorandum *Hydrologic Boundary Review* dated July 7, 2022, by Houston Engineering, Inc. A Mapbook showing the changes to the legal boundary, and the effects on impacted parcels, accompanies this memorandum.

¹ The portion of RCWD's boundary within Anoka County reviewed in this memorandum is adjoining VLAWMO, within the City of Lino Lakes.

GUIDING PRINCIPALS

The overarching purpose of any watershed management organization (WMO) boundary change is to facilitate the WMOs' ability to manage water draining to its surface water resources. Generally, this means attempting to match the current hydrologic boundary of the WMO. However, there are a few statutory and practical limitations to matching the hydrologic boundary:

Statutory Limitations:

1. All land parcels within the metro area must be in one and only one WMO.
2. All land parcels within a watershed district must be contiguous (parcels separated only by a roadway are considered contiguous).

Practical Limitations

3. Determining the hydrologic boundary is inexact, particularly with respect to small (<1 acre) parcels. Many site-level features (for example, rain gutters) cannot be known, but potentially can affect the direction of flow enough to switch what is the "majority direction."
4. A boundary change should not place an undue burden on a landowner; for example, creating unusual limitations for the development, redevelopment, or sale of parcels
5. Physical features (e.g. roadways) and political features (city/county boundaries) may provide a more logical WMO boundary location than the approximated hydrologic boundary in isolated locations (see #3 above).
6. Buildings or structures may occupy multiple parcels that may drain to different watersheds. Assigning multiple WMOs to a single building would put an undue burden on the landowners (see #4 above). All parcels of a building or structure should be assigned to a single WMO, based on 50% rule.

ANALYSIS AND METHODOLOGY

Using the updated hydrologic boundary and the Ramsey, Hennepin and Anoka Counties parcel shapefiles, an analysis of the parcels along the hydrologic boundary was completed, to determine the correct WMO to which a parcel pertains.

The following steps were used to evaluate the legal boundary and parcel WMO assignment:

- (1) Using the updated RCWD hydrologic boundary, parcels were determined to be mostly inside or outside of the RCWD's hydrologic boundary if more than 50 percent of the parcel's areas was inside or outside the hydrologic boundary, respectively.
- (2) Once the parcels were determined to be mostly inside or outside of the RCWD hydrologic boundary, a list of parcels needing additional review were selected. These parcels were selected if more than 50% area was within RCWD but the listed WMO in County's parcel

data was not RCWD; or if less than 50% area was within the RCWD but RCWD was listed as the WMO.

- (3) Parcels were added to the list for review in areas where major discrepancies between boundaries were found.
- (4) The parcels adjoining the boundary were reviewed with respect to the statutory and practical considerations noted above. This review is described in detail in the *Special Considerations* section below.

Through the review process, 1,932 parcels were found to need watershed management organization reassignment. **Tables 1** summarizes the number of parcels that are inappropriately assigned to a WMO. A list of the impacted parcels is provided in accompanying GIS files and shown in the accompanying **Mapbook**.

Table 1: Recommended Parcel Reassignments for Reviewed Area.

Adjoining WMO	Parcels to be Reassigned to RCWD	Parcels to be Reassigned From RCWD	County
Mississippi WMO	227	313	
	227	4	<i>Hennepin</i>
	0	309	<i>Ramsey</i>
Capitol Region WD	66	43	Ramsey
Ramsey-Washington Metro WD	75	422	Ramsey
Vadnais Lake Area WMO	182	604	
	156	592	<i>Ramsey</i>
	26	12	<i>Anoka</i>
TOTAL	550	1,382	

NOTABLE CONSIDERATIONS

Once the proposed legal boundary was created based on the hydrologic boundary and using the methodology above, a review of the parcels that would change from one management organization to another was completed, to check for continuity in the boundary. In a few instances, parcels were orphaned or separated from its neighboring parcels. Since MS 103B.215 requires that a boundary be contiguous, orphaned parcels were reassigned accordingly to ensure a contiguous boundary. Likewise, given that there is a measure of anticipated error in the hydrologic boundary and to attempt consistency of WMO assignment in a given neighborhood, some parcels were assigned to a WMO for which a little less than half of the parcel is in that hydrologic boundary. Parcels that are recommended specifically to be assigned jurisdiction under a WMO that does not correspond to their hydrology are described below:

Area 1 Mapbook Page 11: A large park parcel owned by the University of Minnesota is currently being split, with one of the parcels being transferred to the City of Falcon Heights. The park area drains to the RCWD and the remaining area drains to CRWD. We anticipate that the parcel split will be finalized prior to submittal of a boundary change petition to BWSR. We have indicated a rough approximation of the parcel split location. Mapping will need to be updated to align with the actual parcel boundary when the parcel transfer is complete. In addition, one parcel along Summer St, west of Prior Avenue is >50% area in RCWD but the neighboring 2 parcels are within CRWD. It was determined to the split was close enough to 50% to leave the parcel within CRWD for a clean, less confusing boundary in the immediate area.

Area 2, Mapbook Page 12: One parcel north of Roselawn Ave W, along Simpson St drains >50% of area to RCWD but is close enough to transfer to CRWD because both neighboring parcels are being transferred and will result in a cleaner, less confusing boundary in the immediate area.

Area 3, Mapbook Page 14: One parcel along Sextant Ave W, west of Hamline Ave N drains >50% of area to RWMWD but is close enough to remain in RCWD because both neighboring parcels are remaining in the RCWD and will result in a cleaner, less confusing boundary in the immediate area.

Area 4, Mapbook Page 17: Two parcels along Victoria St N, south of Edgewater Ave drain >50% of area to RWMWD but is close enough to remain in RCWD because neighboring parcels are remaining in the RCWD and will result in a cleaner, less confusing boundary in the immediate area.

Area 5, Mapbook Page 18: Two parcels along the north side of Arbogast St, east of Richmond Ave drain >50% of area to RWMWD but is close enough to remain in RCWD because neighboring parcels are remaining in the RCWD and will result in a cleaner, less confusing boundary in the immediate area.

Area 6, Mapbook Page 20: Multiple parcels along the hydrologic boundary in this area are >50% draining to the RCWD but transferring the parcels would result in buildings being split between WMOs. The boundary was adjusted to account for the buildings and parcel assignment was determined based on the majority of area for all parcels belonging to the buildings.

Area 7, Mapbook Page 24: The parcel south of adjust legal boundary is close to a 50/50 split between RCWD and VLAWMO but is along a lake that drains to RCWD. It was determined that the parcel should remain in RCWD because the lake is within RCWD and since a substantial (but not greater than 50%) portion of these parcels drains to the lake. The parcels north will transfer to VLAWMO because the majority of area drained by each is substantially greater than 50%.

Area 8, Mapbook Page 33: One parcel along Lorane Ave, west of Parker Ave drains >50% of area to VLAWMO but is close enough to remain in RCWD because both neighboring parcels are remaining in the RCWD and will result in a cleaner, less confusing boundary in the immediate area.

Area 9, Mapbook Page 34: One parcel along Le Mire Ln drains >50% of area to RCWD but is close enough to remain in VLAWMO because both neighboring parcels are remaining in the VLAWMO and will result in a cleaner, less confusing boundary in the immediate area.

Area 10, Mapbook Page 37: Multiple parcels along the shoreline drain >50% area to RWMWD but the lake itself is within the RCWD. It as determined to keep the parcels along the shoreline in the RCWD since a substantial (but not greater than 50%) portion of these parcels drains to the lake.

Area 11, Mapbook Page 39: Multiple parcels along Gisella Blvd E, west of Bellaire Ave drains >50% of area to RWMWD but is close enough to remain in RCWD because both neighboring parcels are remaining in the RCWD and will result in a cleaner, less confusing boundary in the immediate area.

SPECIAL CONSIDERATIONS

There are two locations in this proposed boundary revision that require special consideration:

- 1) The recommended boundary would result in the RCWD Board of Managers' primary meeting location (Shoreview City Hall) to be reassigned to the Ramsey Washington Metro Watershed District. If this were to occur, RCWD would no longer be able to utilize Shoreview City Hall as a meeting location
- 2) The recommended boundary would add a new city (North Oaks) to RCWD and a new city (Shoreview) to VLAWMO. This may add additional logistical challenges for the respective Cities/WMOs that are proportionally significant to the relatively small number of parcels added/affected.

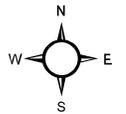
Note that the boundary change process is elective, and concurrence from all affected cities and WMOs is required. Each entity has to determine if the recommend changes are reasonable and not create an undue burden on the landowners, cities, and/or WMOs. In weighing the additional complications versus the benefit of the boundary aligning with hydrology, the RCWD and its neighboring WMOs may elect to leave the legal boundary as-is in the locations noted above (or any portion of the boundary) while changing other portions.

NEXT STEPS

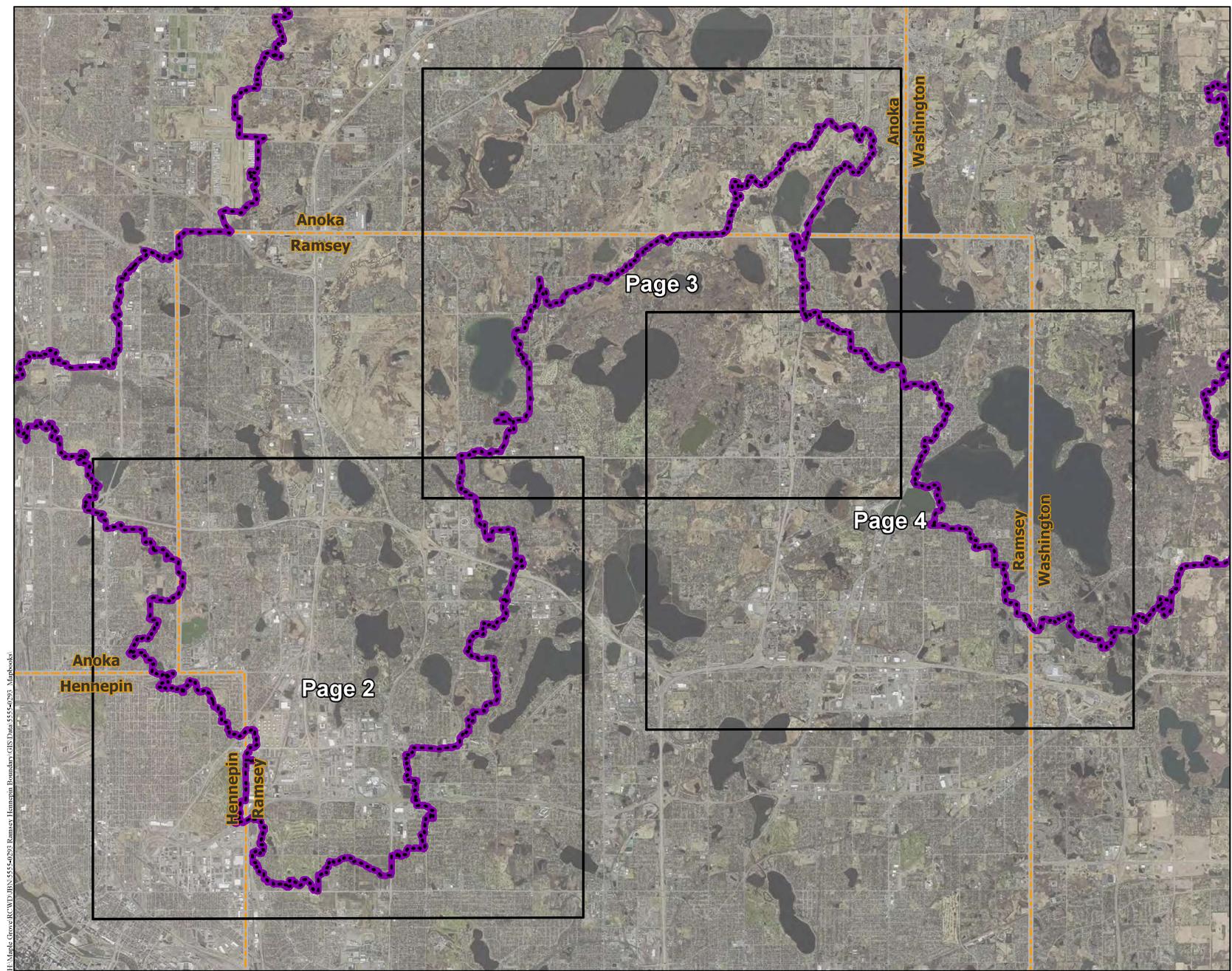
The District has reached concurrence with the neighboring WMOs regarding the hydrologic boundary within Ramsey, Hennepin, and Anoka Counties and has created a proposed legal boundary and list of parcels impacted by the changes in the boundary. Once the District has reviewed this memorandum and accompanying Mapbook, we recommend that the District provide this memorandum with the adjoining WMOs and engage them in a discussion regarding correction of the legal boundaries. The District should prioritize and develop a timeline for proposed boundary changes with the neighboring WMOs. Then the RCWD or the neighboring WMO can initiate the boundary change process under MS 103B.215, which includes written statement of concurrence from each underlying city and affected WMO, and a petition to BWSR. This eventually will result in an update to Ramsey, Hennepin, and Anoka Counties' tax assignments to reflect enacted changes.

DRAFT

-  Mapbook Index Pages
-  RCWD Hydrologic Boundary
-  County Boundary

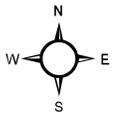


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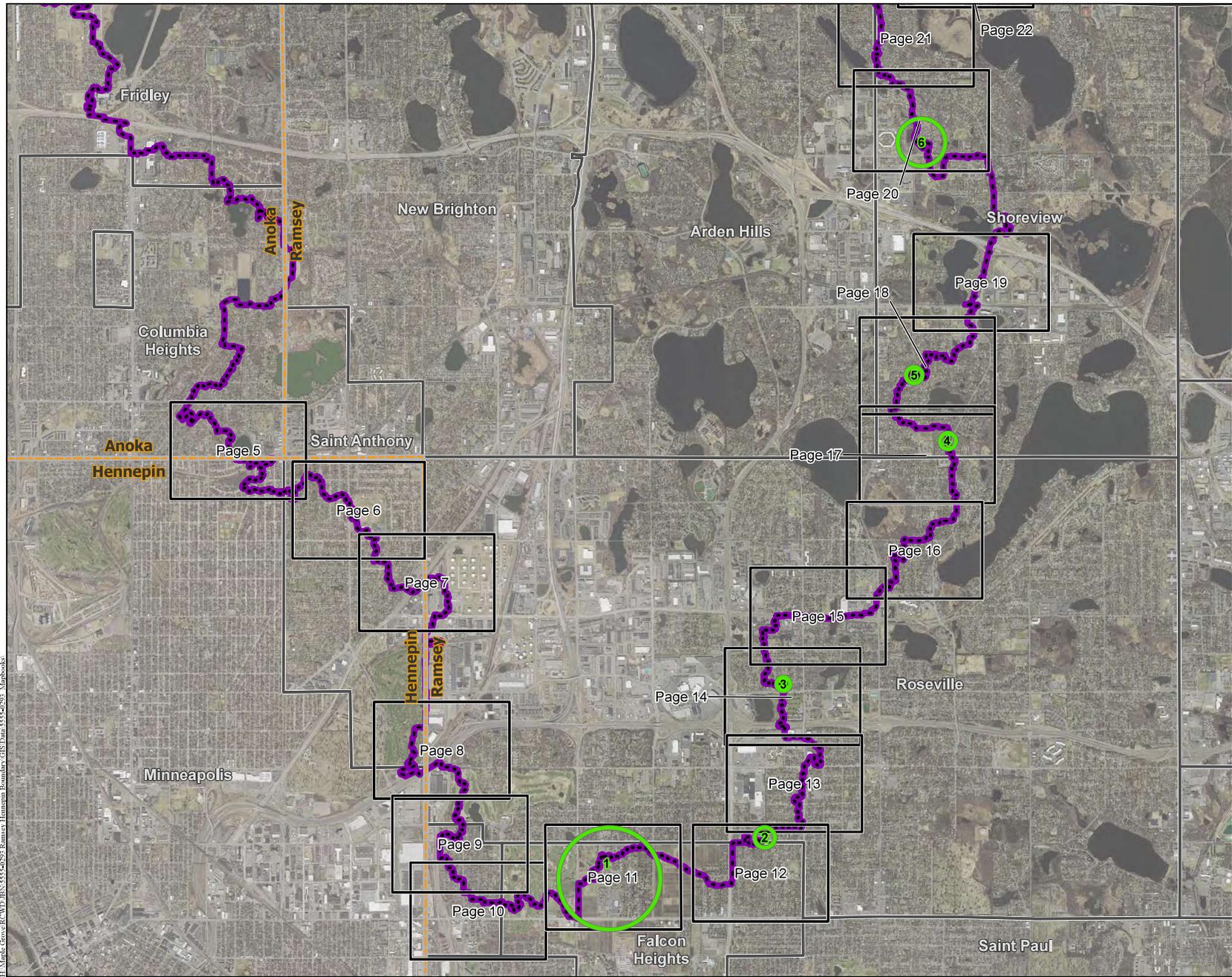


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- Areas Called Out in Memo
- Mapbook Pages
- RCWD Hydrologic Boundary
- City Boundaries
- County Boundary



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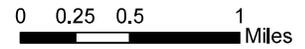


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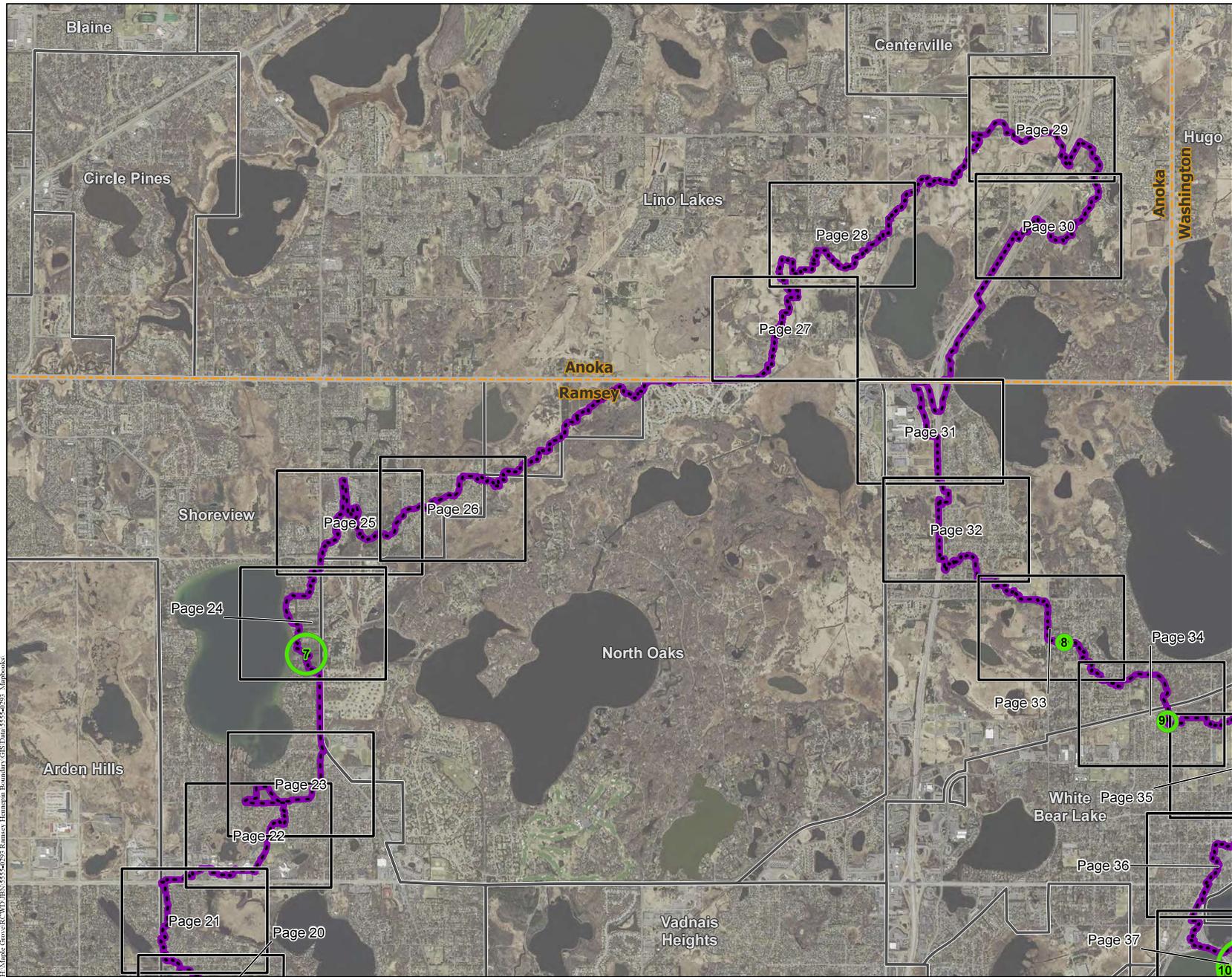
Legal Boundary Review

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- Areas Called Out in Memo
- Mapbook Pages
- RCWD Hydrologic Boundary
- City Boundaries
- County Boundary



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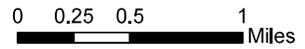


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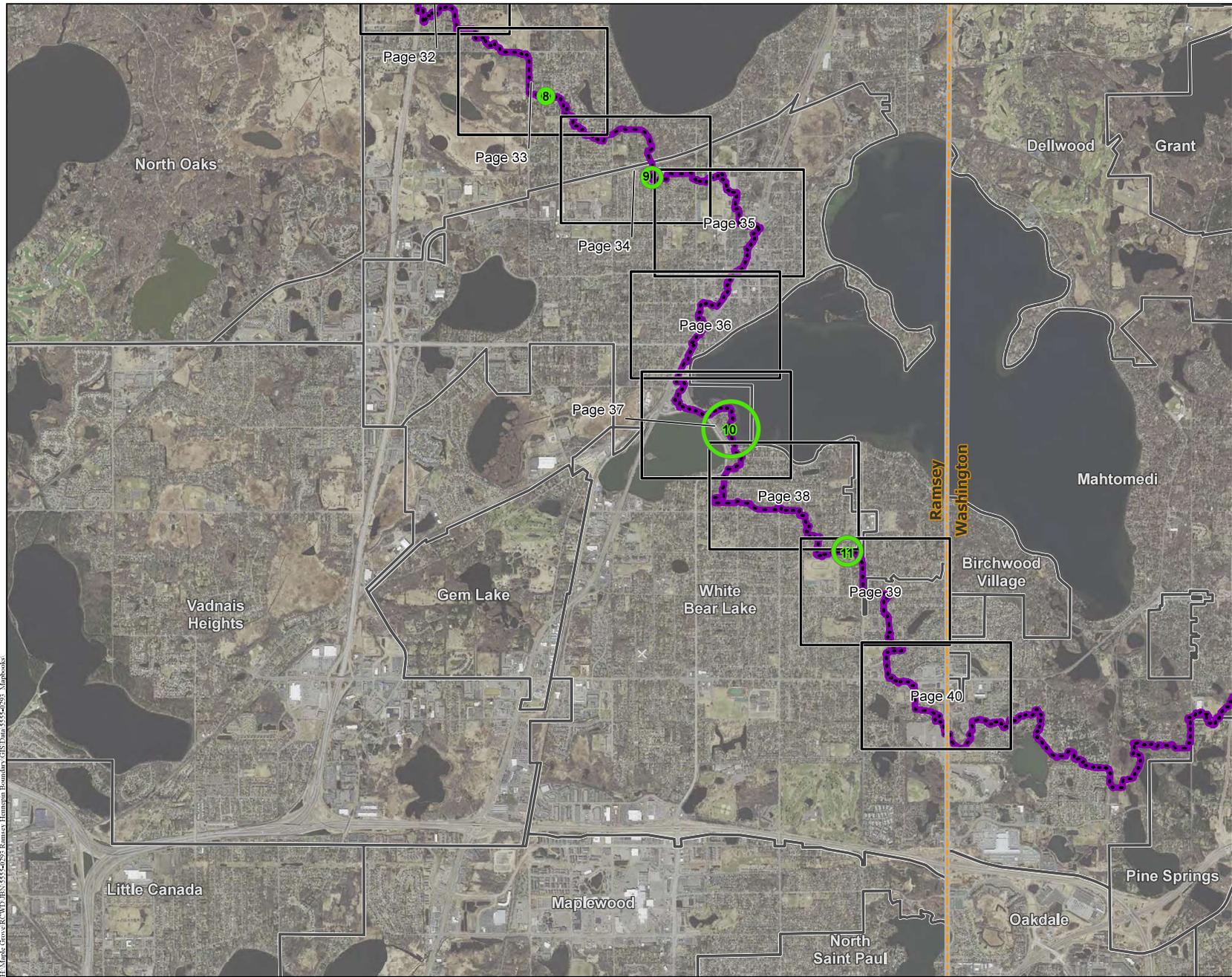
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-  Areas Called Out in Memo
-  Mapbook Pages
-  RCWD Hydrologic Boundary
-  City Boundaries
-  County Boundary



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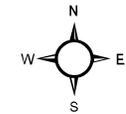
RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

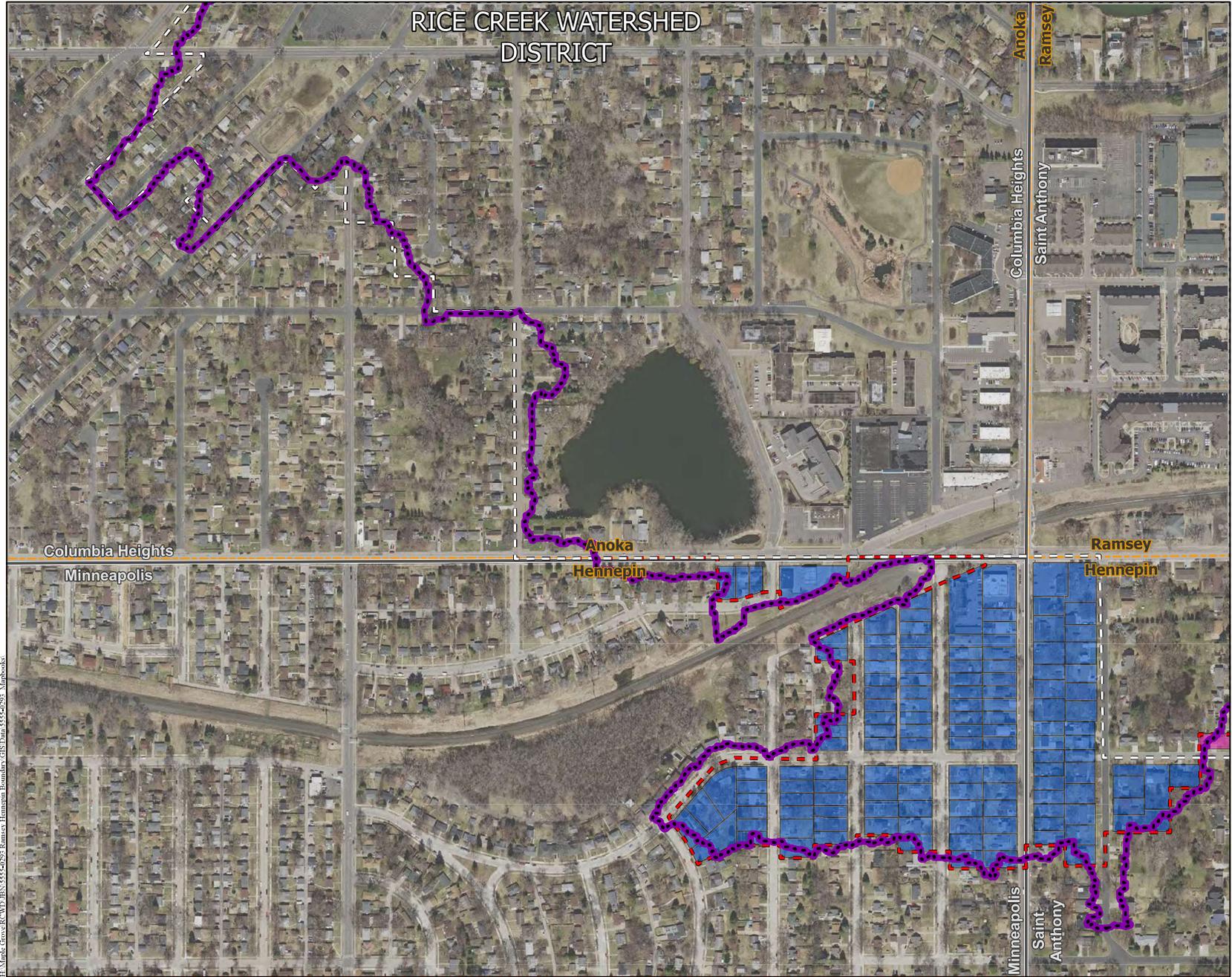
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- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RCWD
- MWMO



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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

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- Areas Called Out in Memo
 - RCWD Hydrologic Boundary
 - Current RCWD Legal Boundary
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 - City Boundaries
 - County Boundary
- New Watershed**
- RCWD
 - MWMO



Legal Boundary Review - Page 6 of 40

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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

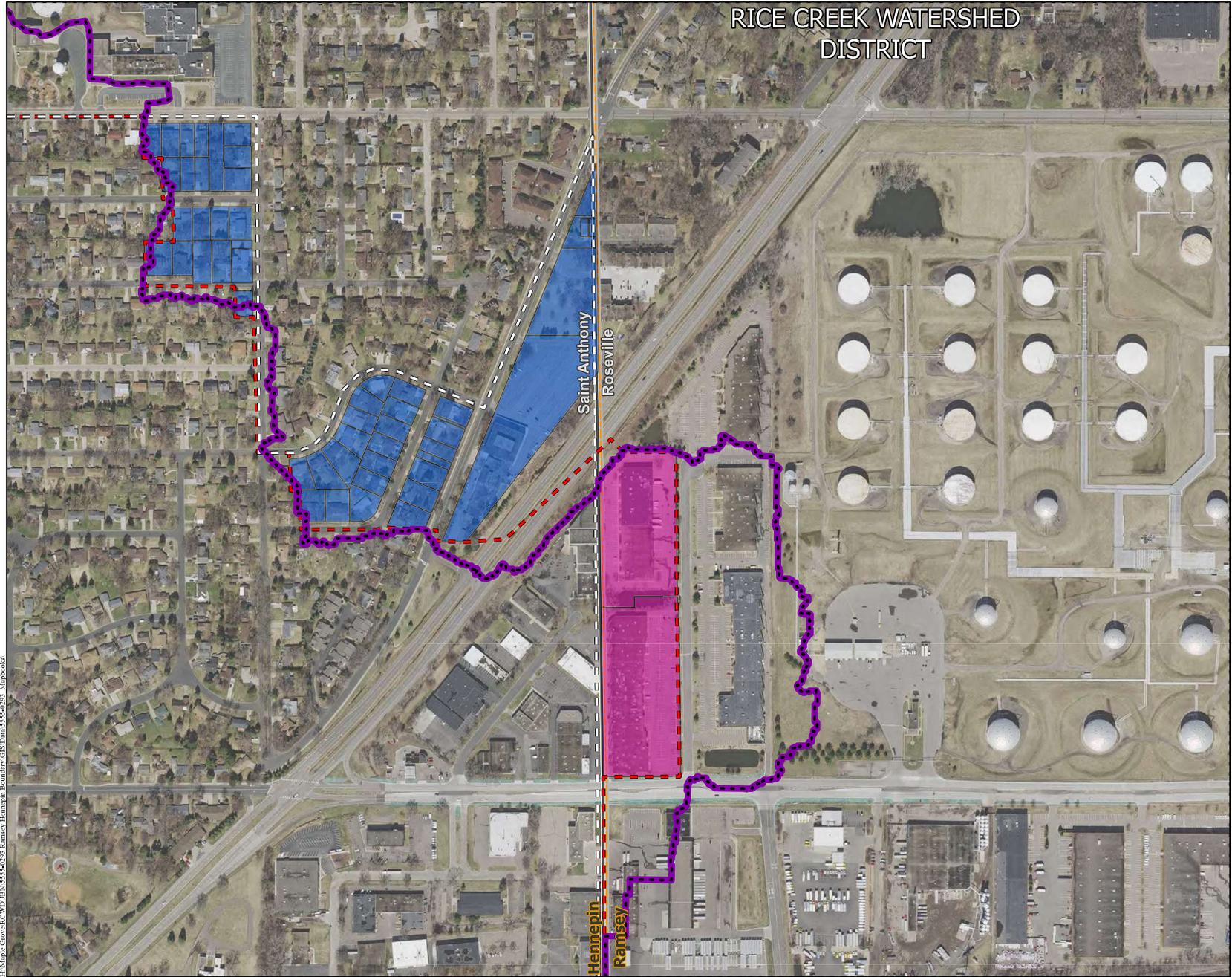
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- Areas Called Out in Memo
 - RCWD Hydrologic Boundary
 - Current RCWD Legal Boundary
 - Recommended RCWD Legal Boundary
 - City Boundaries
 - County Boundary
- New Watershed**
- RCWD
 - MWMO



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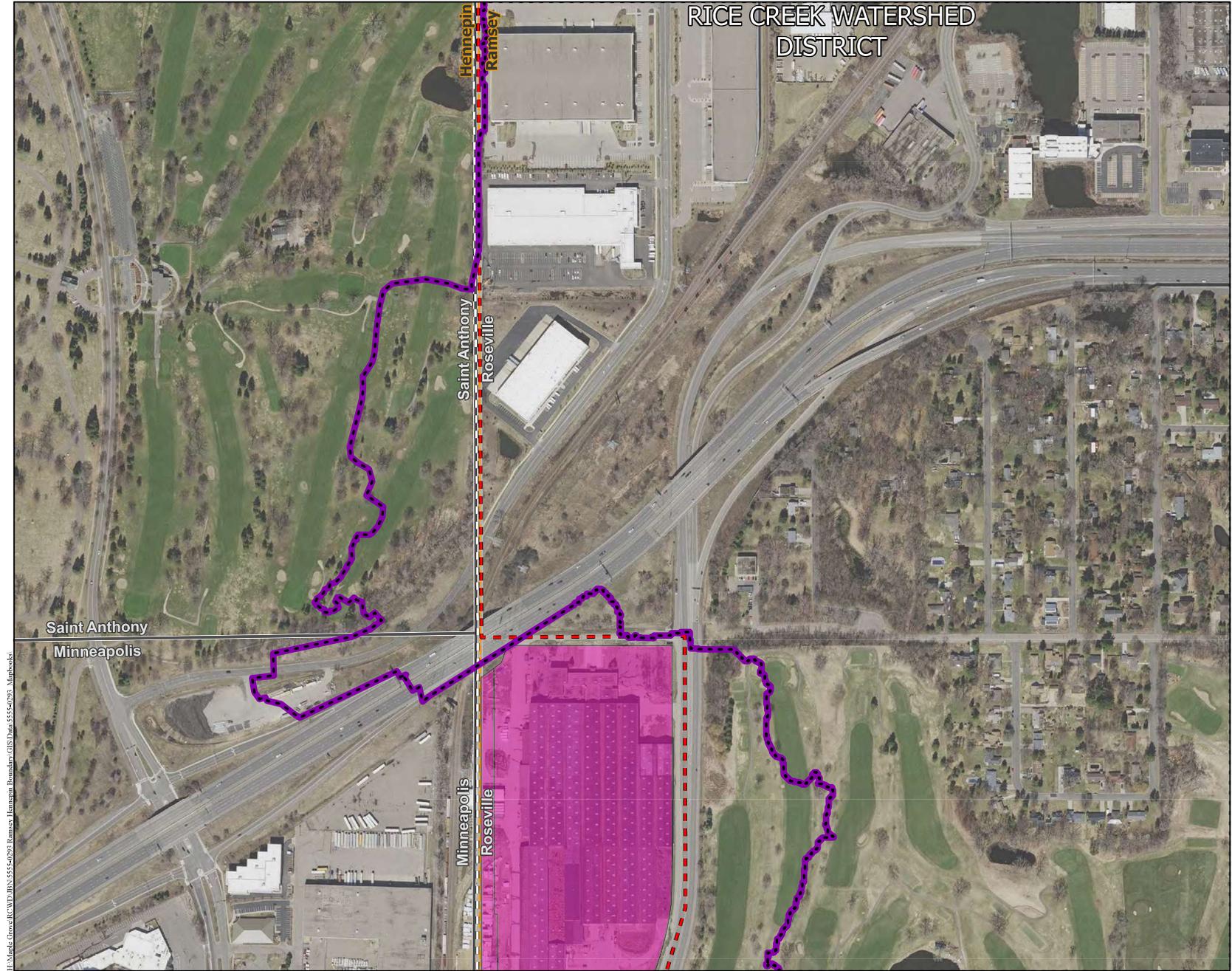
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- Areas Called Out in Memo
- RCWD Hydrologic Boundary
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- City Boundaries
- County Boundary
- New Watershed**
- MWMO



Legal Boundary Review - Page 8 of 40

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RICE CREEK
WATERSHED
DISTRICT



Legal Boundary Review

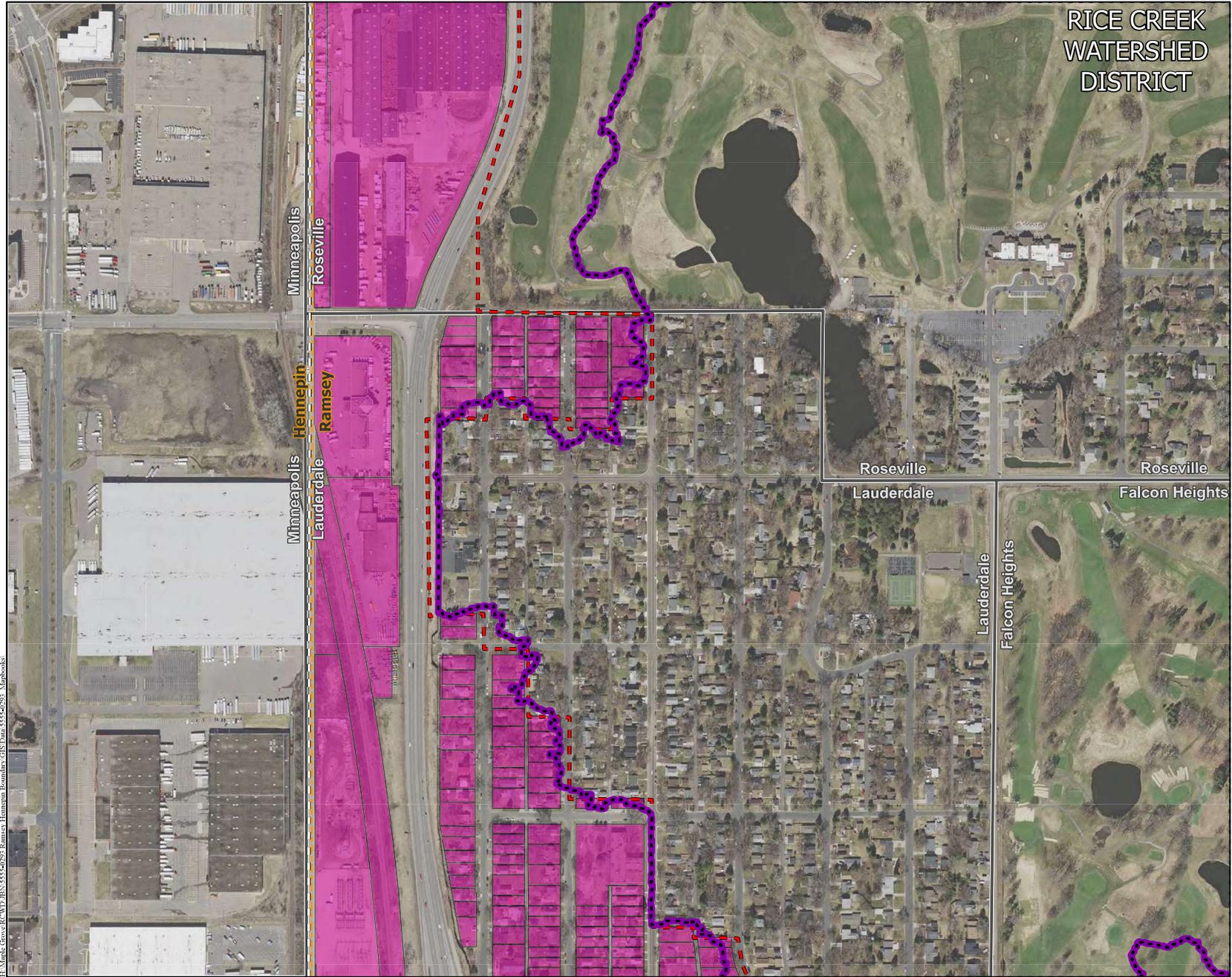
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- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- MWMO



Legal Boundary Review - Page 9 of 40

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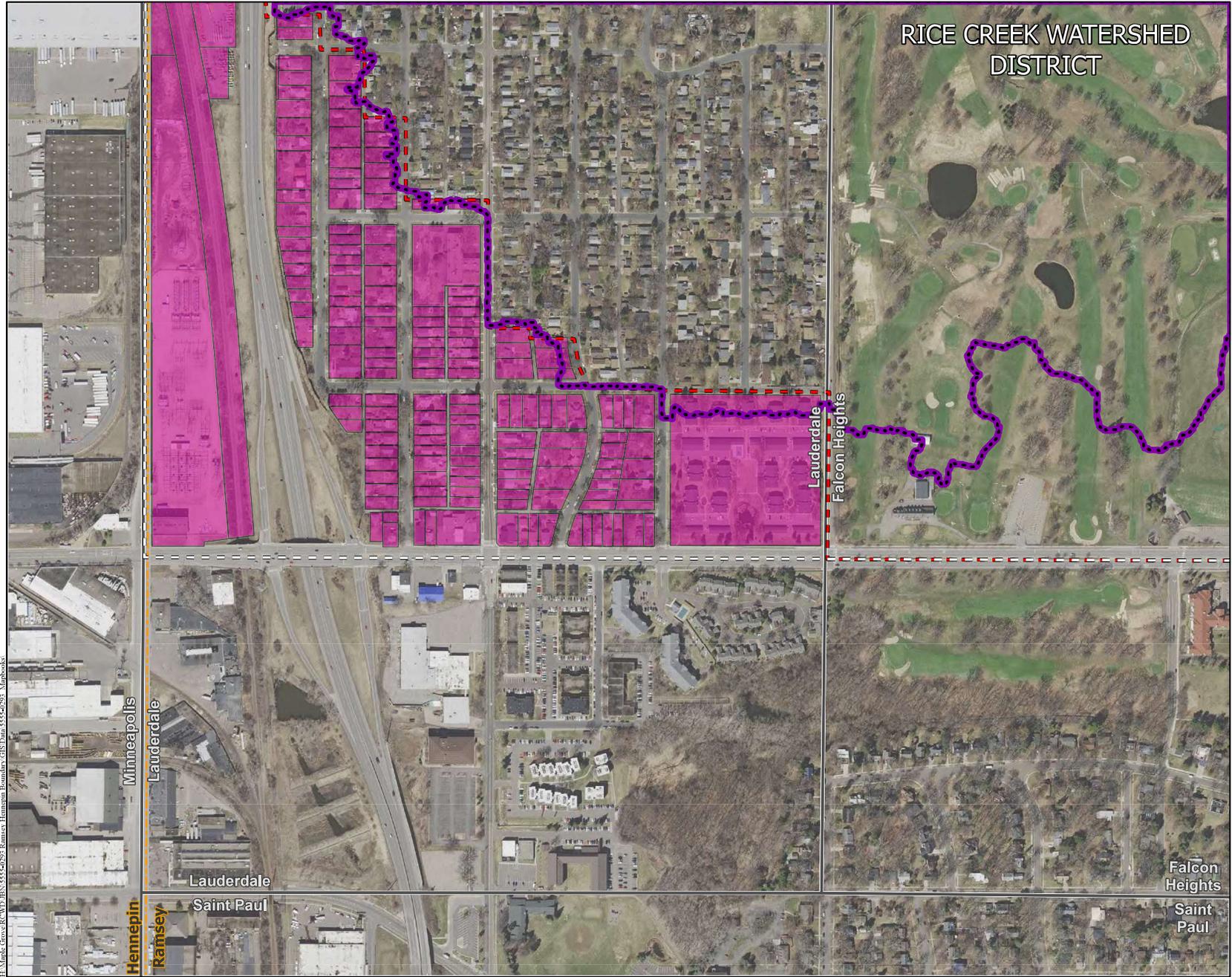
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-  Areas Called Out in Memo
-  RCWD Hydrologic Boundary
-  Current RCWD Legal Boundary
-  Recommended RCWD Legal Boundary
-  City Boundaries
-  County Boundary
- New Watershed**
-  MWMO



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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

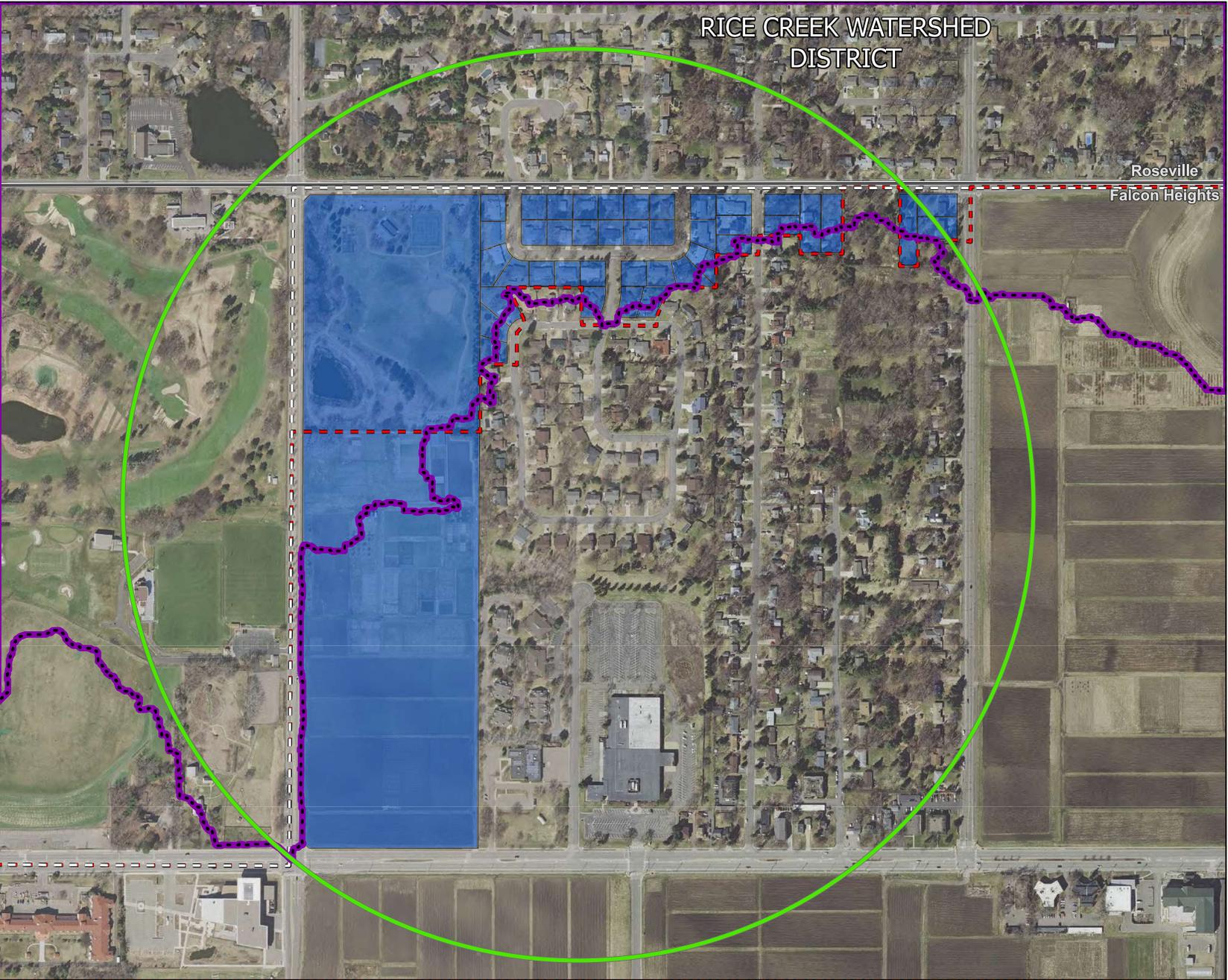
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- Areas Called Out in Memo
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- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RCWD



Legal Boundary Review - Page 11 of 40

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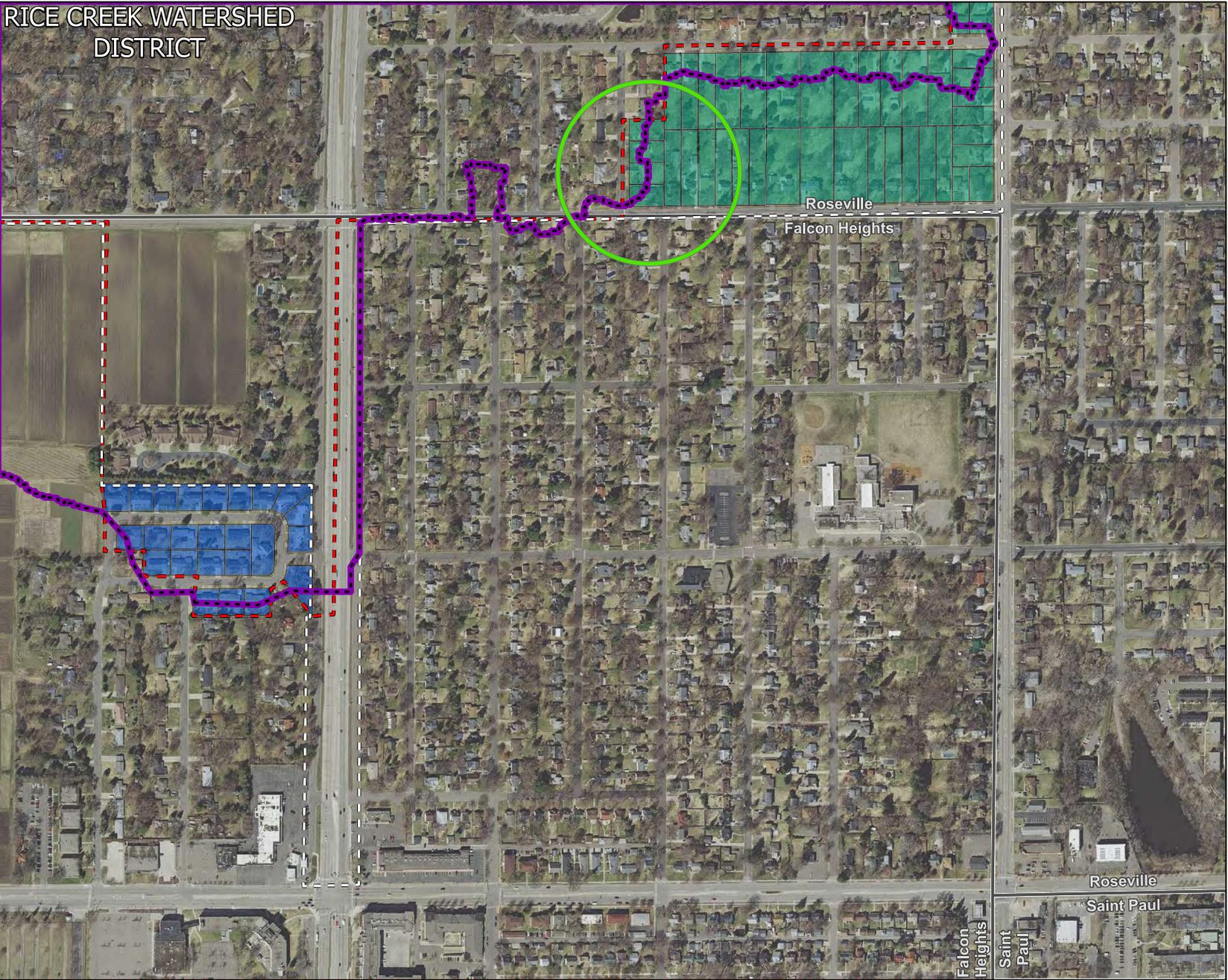
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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

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- Areas Called Out in Memo
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- County Boundary
- New Watershed**
- RCWD
- CRWD



Legal Boundary Review - Page 12 of 40

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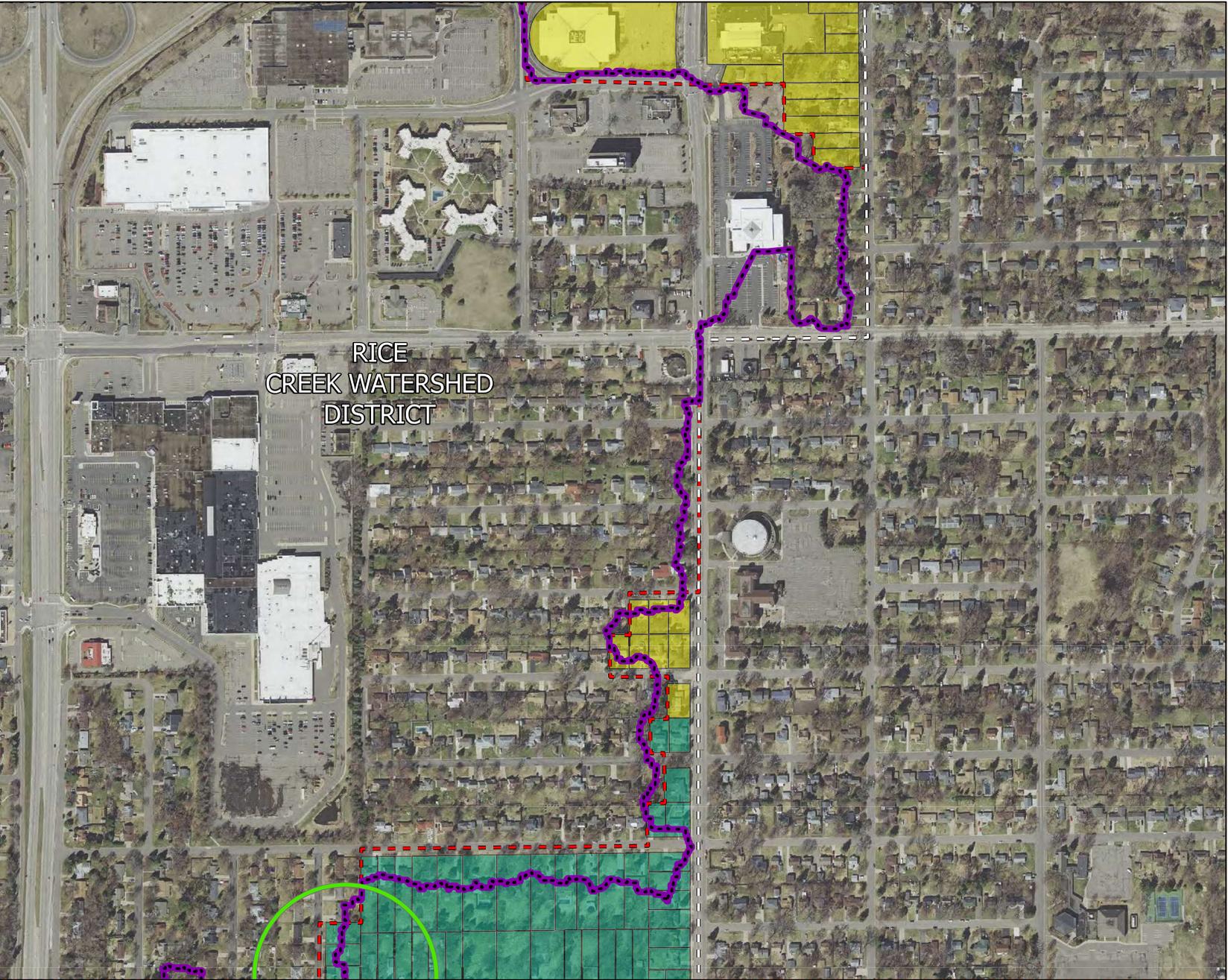
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-  Areas Called Out in Memo
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-  City Boundaries
-  County Boundary
- New Watershed**
-  CRWD
-  RWMWD



Legal Boundary Review - Page 13 of 40

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RICE CREEK
WATERSHED
DISTRICT



Legal Boundary Review

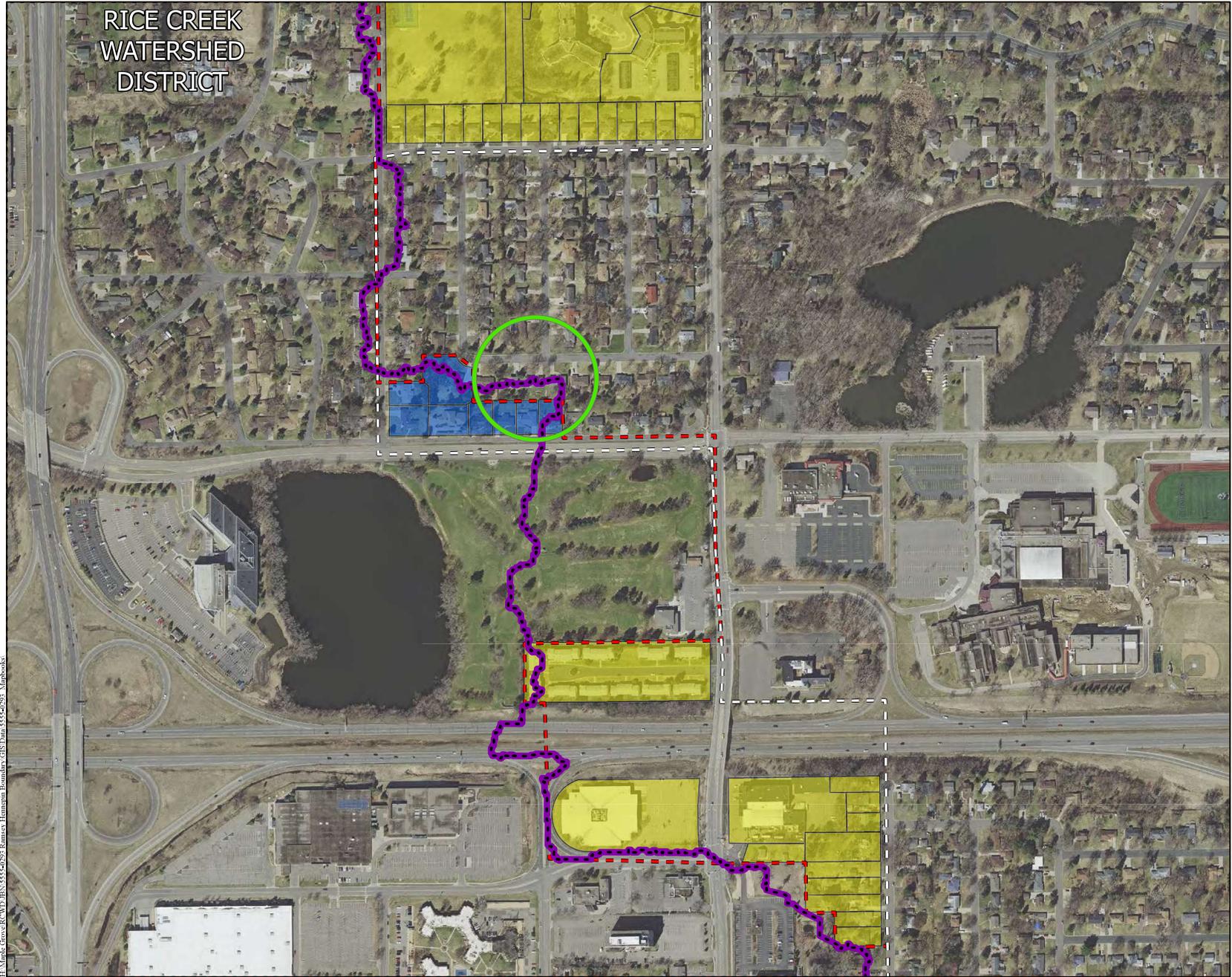
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- Areas Called Out in Memo
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- RWMWD



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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

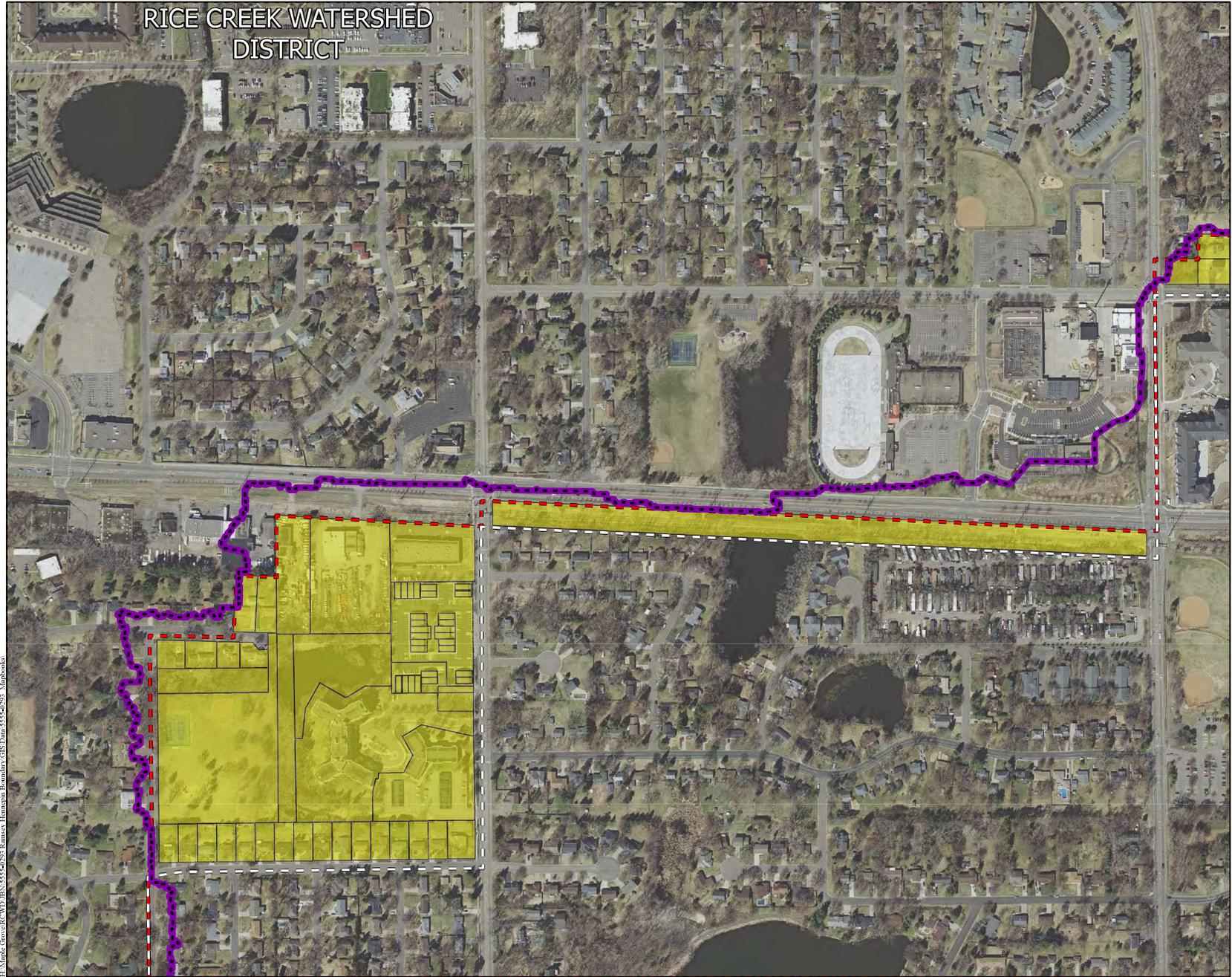
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- Areas Called Out in Memo
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- County Boundary
- New Watershed**
- RWMWD



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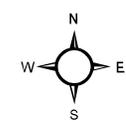
RICE CREEK
WATERSHED
DISTRICT



Legal Boundary Review

DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RWMWD



Legal Boundary Review - Page 16 of 40

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Legal Boundary Review

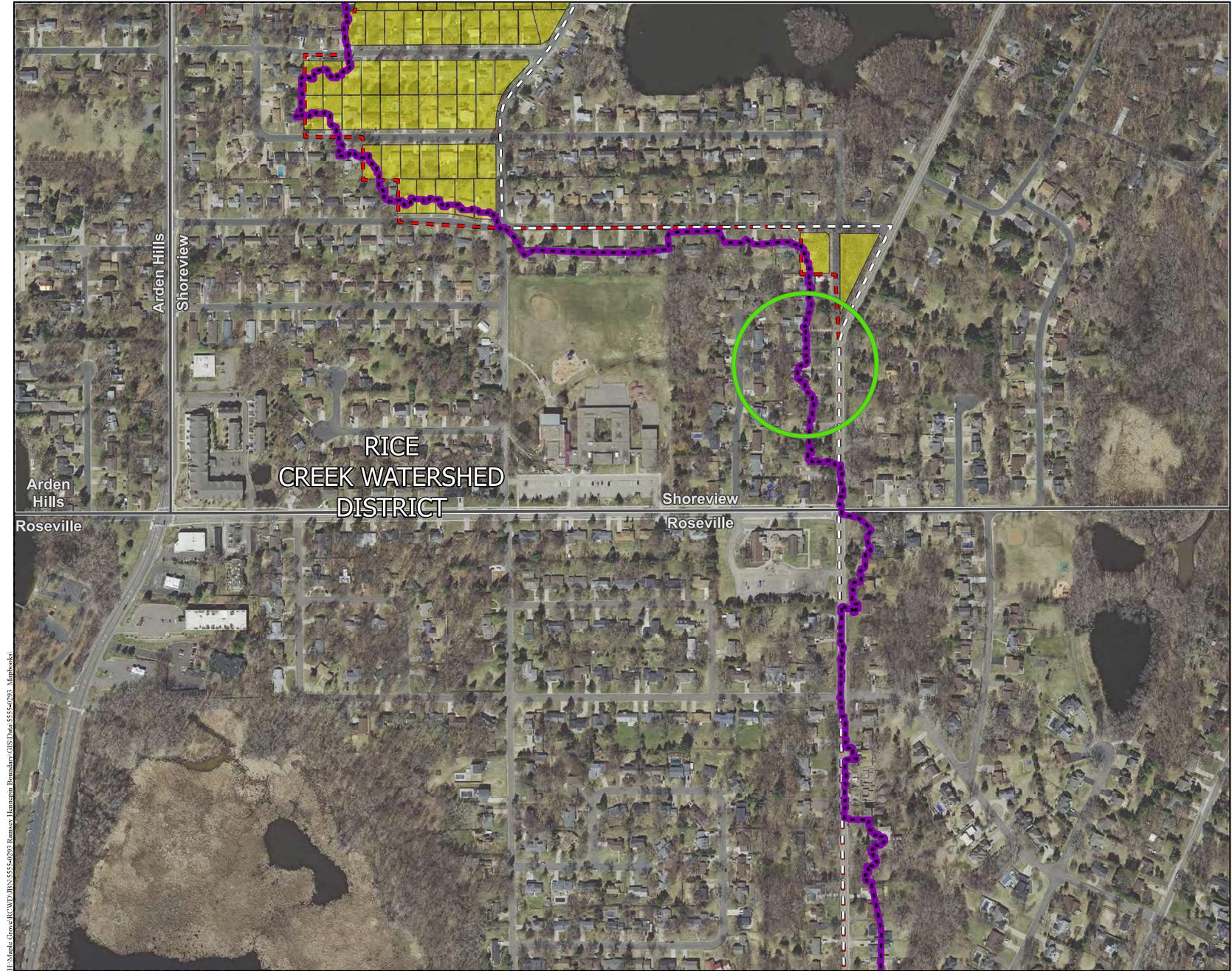
DRAFT

-  Areas Called Out in Memo
-  RCWD Hydrologic Boundary
-  Current RCWD Legal Boundary
-  Recommended RCWD Legal Boundary
-  City Boundaries
-  County Boundary
-  New Watershed
-  RWMWD



Legal Boundary Review - Page 17 of 40

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1:4,250	TWM	COO	5959-0293	12/12/2022	17 of 40



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RICE CREEK WATERSHED DISTRICT

Arden Hills
Shoreview



Legal Boundary Review

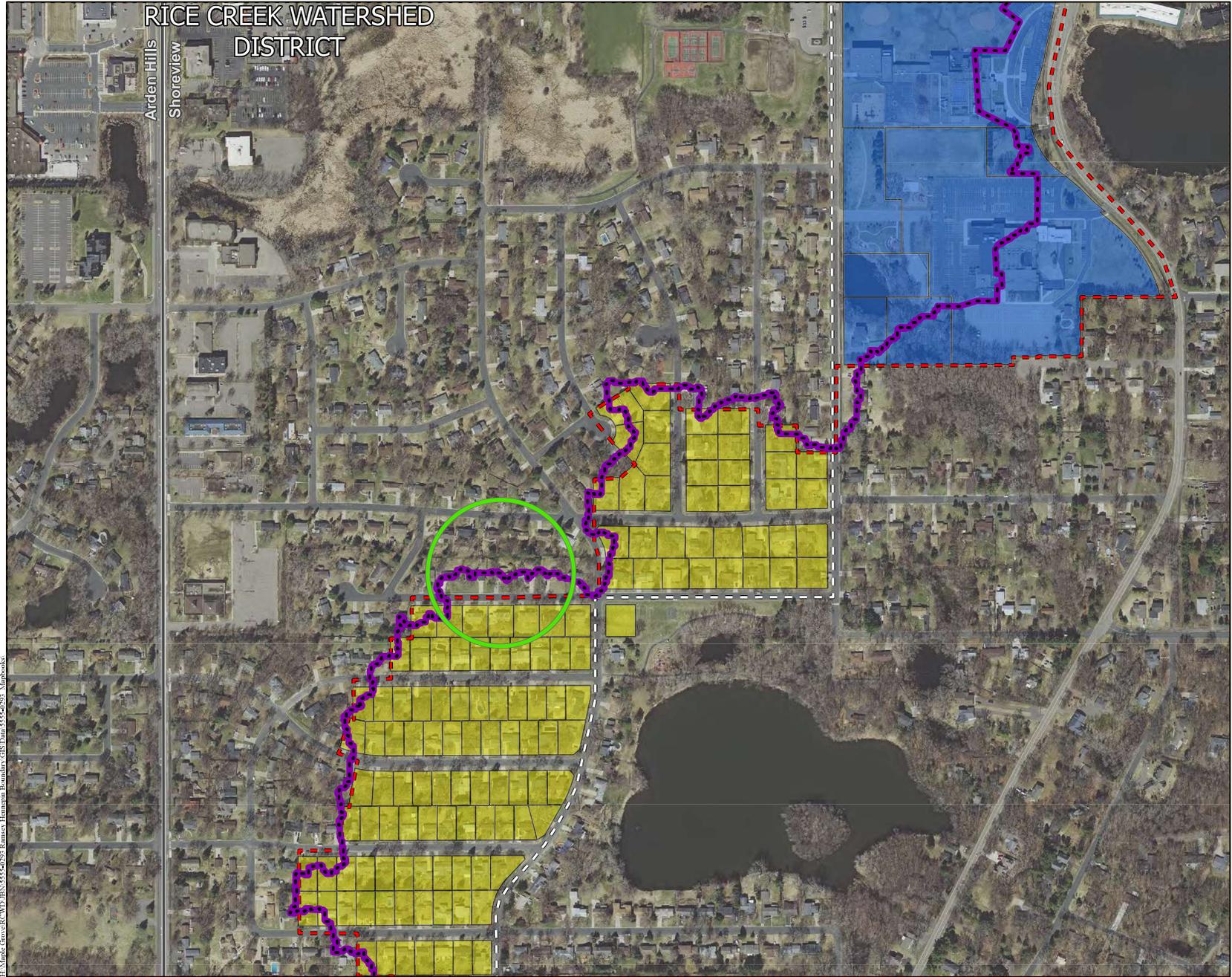
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- Areas Called Out in Memo
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- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RCWD
- RWMWD



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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RCWD
- RWMWD



Legal Boundary Review - Page 19 of 40

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Legal Boundary Review

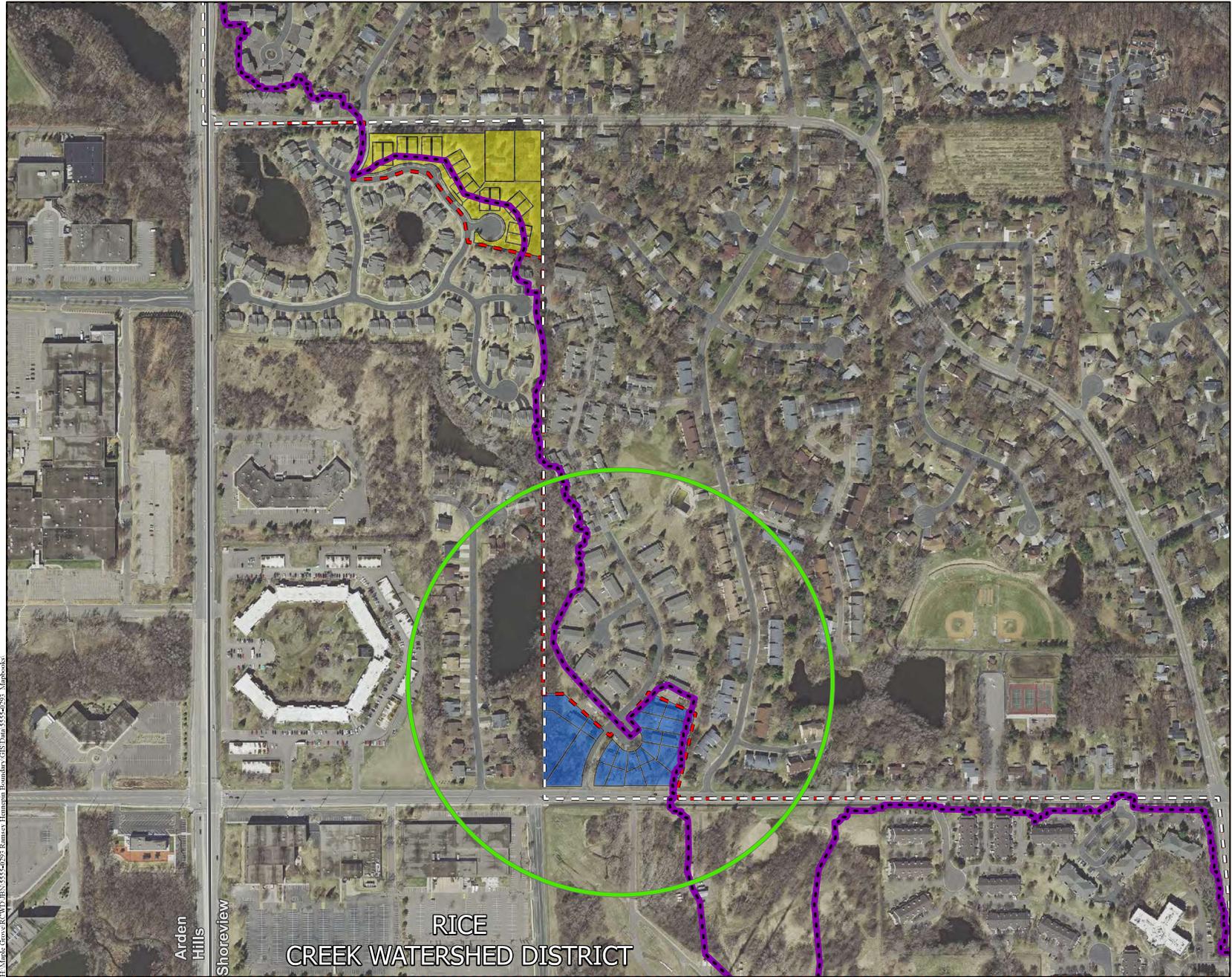
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-  Areas Called Out in Memo
-  RCWD Hydrologic Boundary
-  Current RCWD Legal Boundary
-  Recommended RCWD Legal Boundary
-  City Boundaries
-  County Boundary
- New Watershed**
-  RCWD
-  RWMWD



Legal Boundary Review - Page 20 of 40

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RICE CREEK
WATERSHED DISTRICT

Arden
Hills
Shoreview



Legal Boundary Review

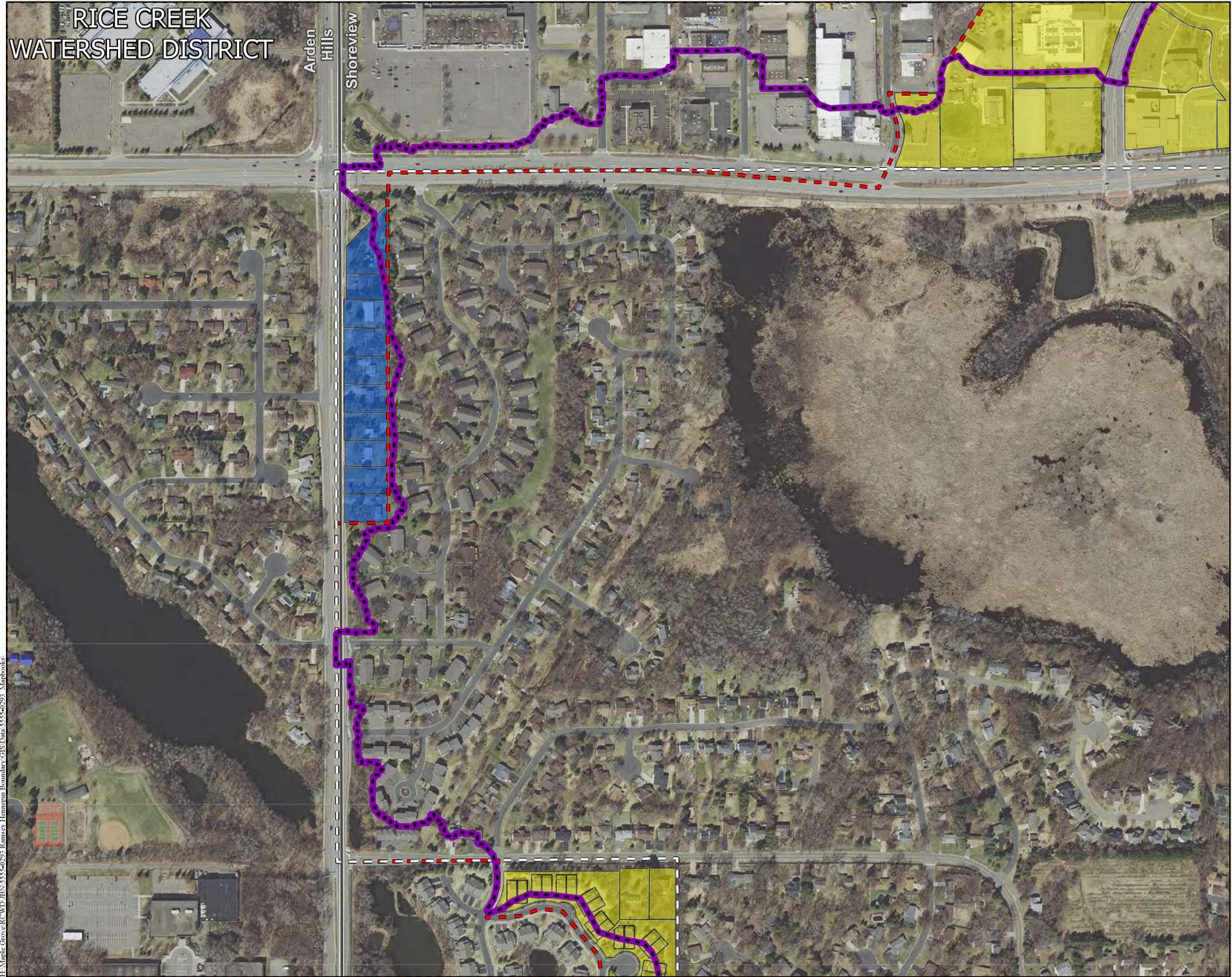
DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
 - RCWD
 - RWMWD



Legal Boundary Review - Page 21 of 40

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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RWMWD



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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

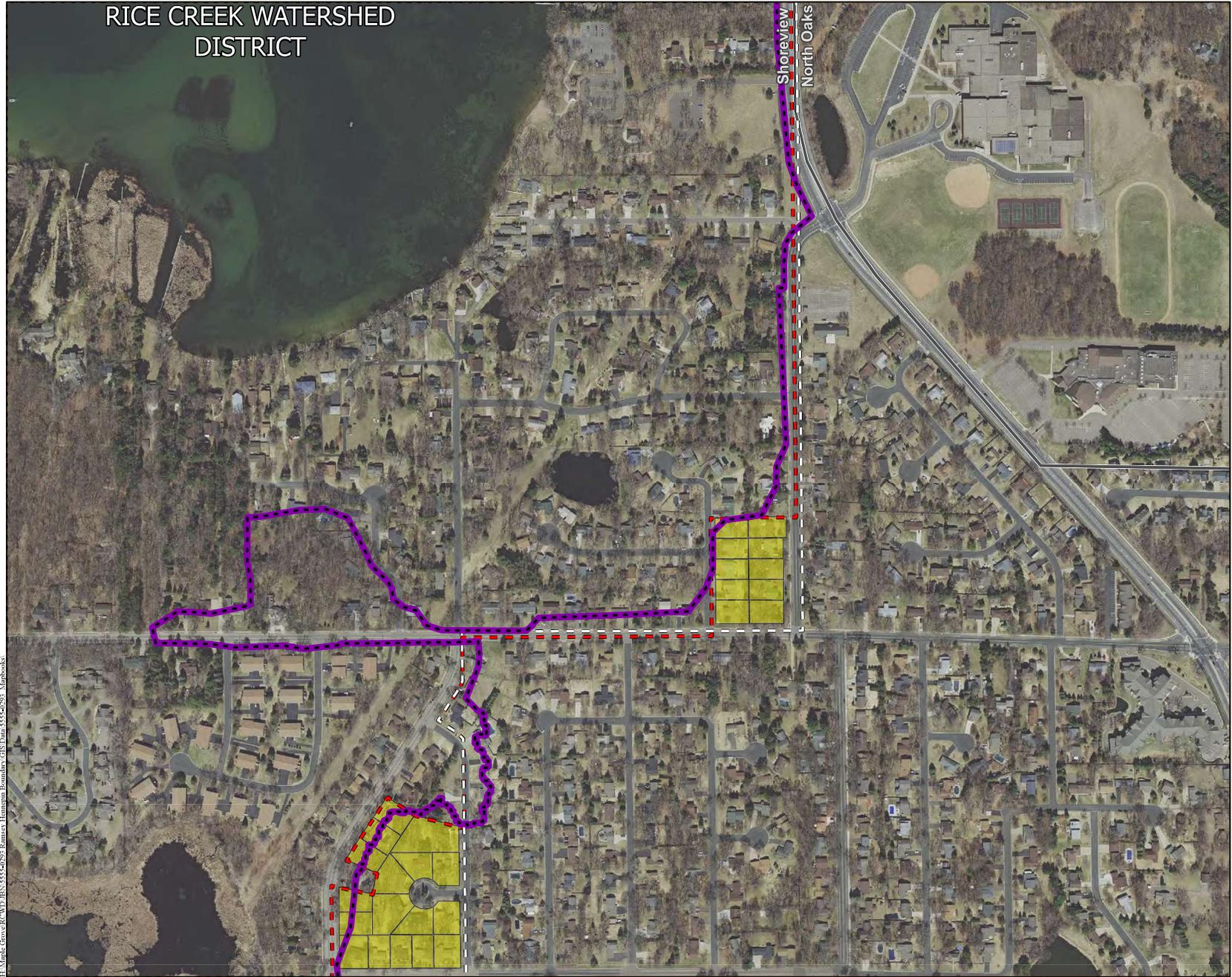
DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RWMWD



Legal Boundary Review - Page 23 of 40

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Legal Boundary Review

DRAFT

-  Areas Called Out in Memo
-  RCWD Hydrologic Boundary
-  Current RCWD Legal Boundary
-  Recommended RCWD Legal Boundary
-  City Boundaries
-  County Boundary
- New Watershed**
-  VLAWMO



Legal Boundary Review - Page 24 of 40

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RICE
CREEK WATERSHED DISTRICT

Shoreview
North Oaks

RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

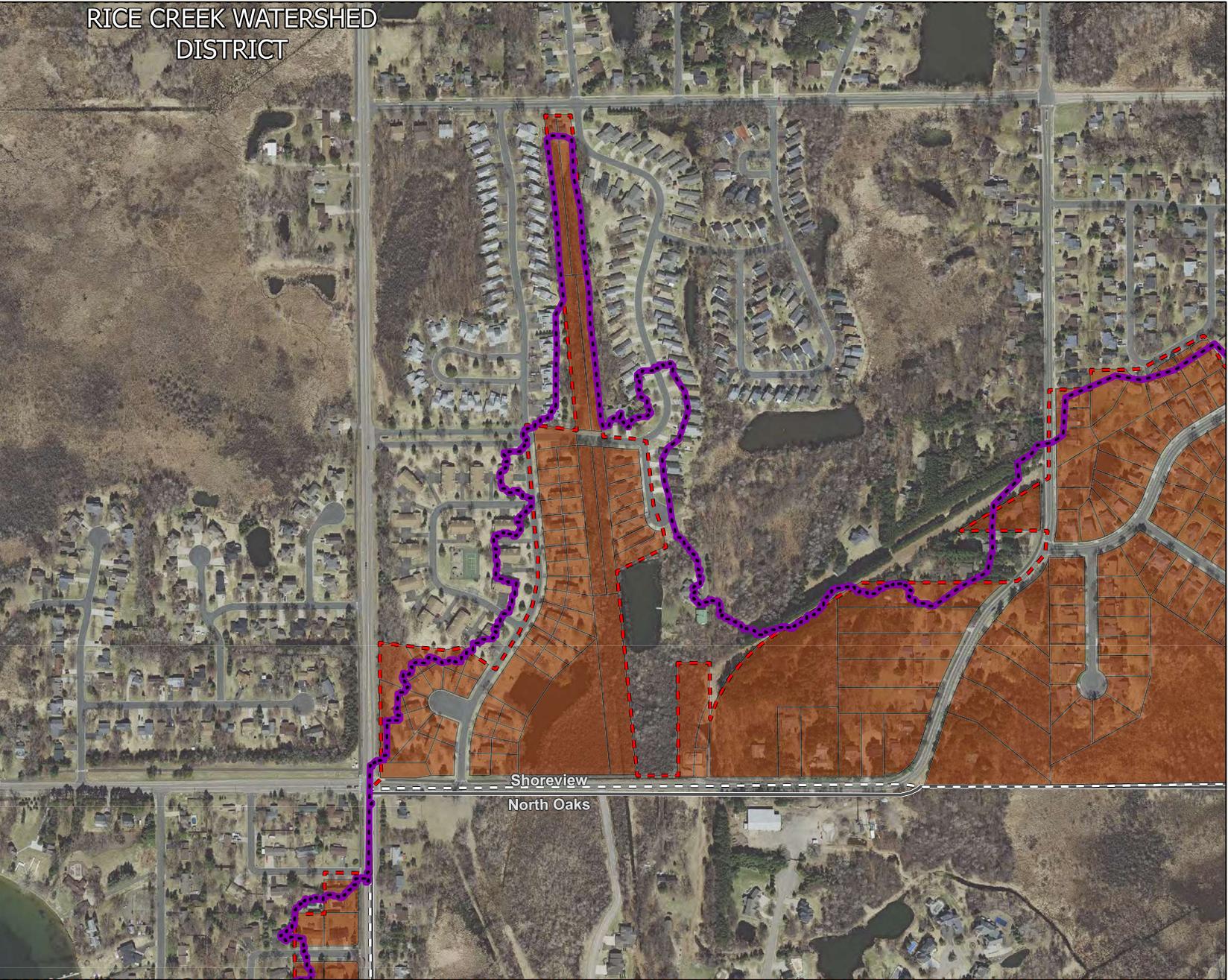
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- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- VLAWMO



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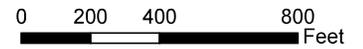
RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

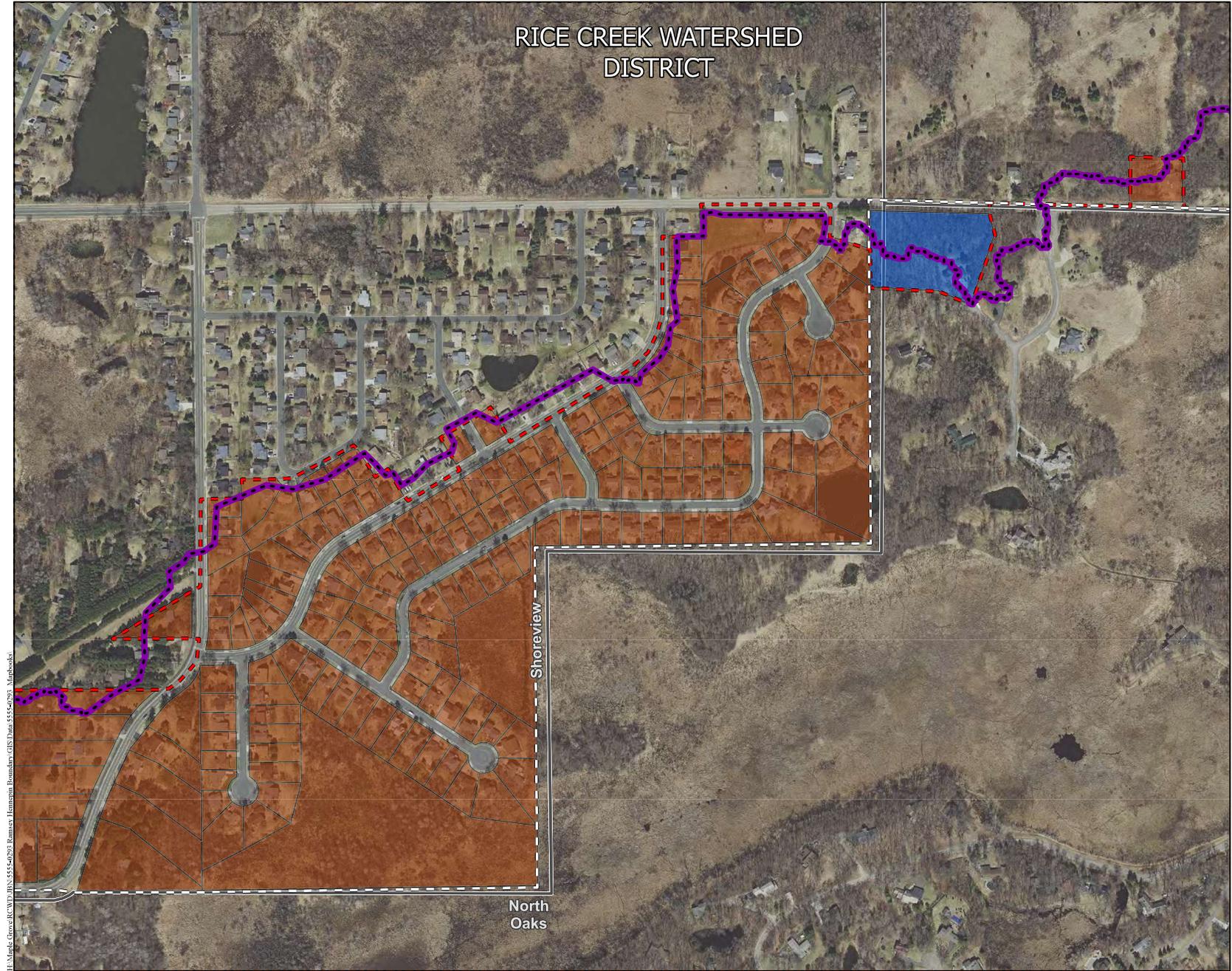
DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RCWD
- VLAWMO



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RICE CREEK
WATERSHED DISTRICT



Legal Boundary Review

DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RCWD



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Anoka
Ramsey

Lino
Lakes
North
Oaks

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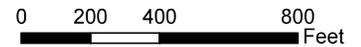
RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed
- RCWD



Legal Boundary Review - Page 28 of 40

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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
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- City Boundaries
- County Boundary
- New Watershed**
- RCWD
- VLAWMO



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Scale: 1:4,250	Drawn by: TWM	Checked by: COO	Project No: 5959-0293	Date: 12/12/2022	Sheet: 29 of 40
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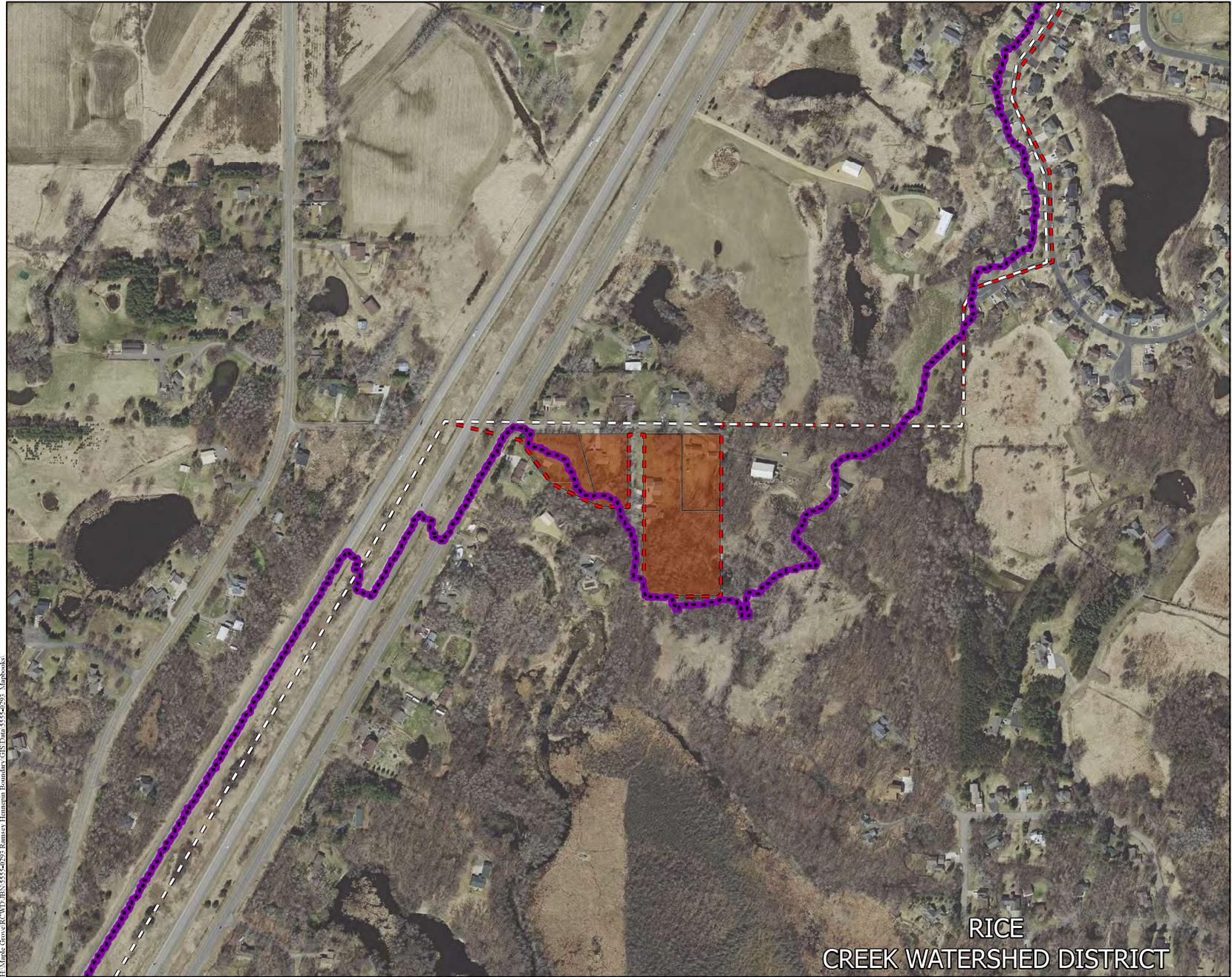
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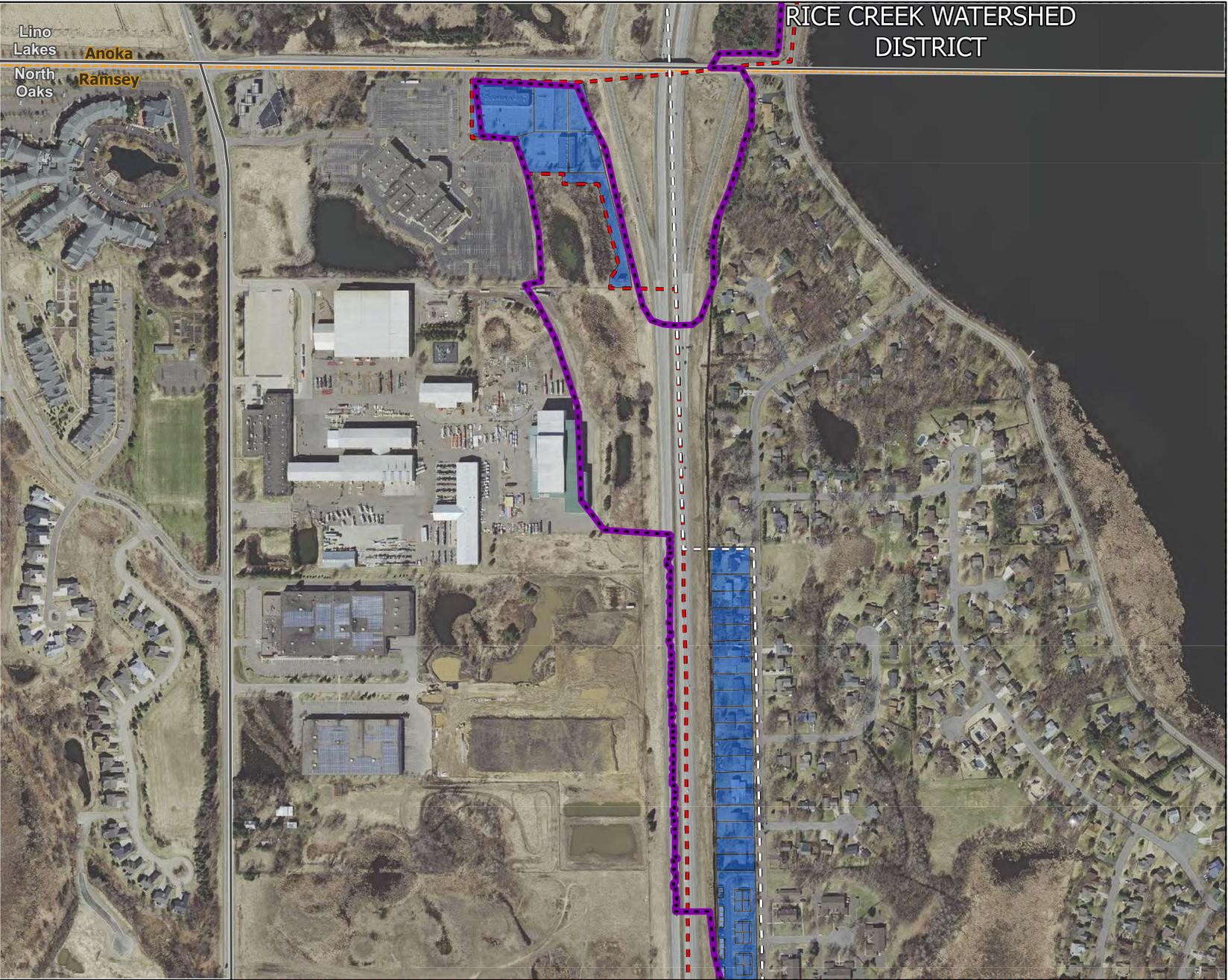
-  Areas Called Out in Memo
-  RCWD Hydrologic Boundary
-  Current RCWD Legal Boundary
-  Recommended RCWD Legal Boundary
-  City Boundaries
-  County Boundary
-  New Watershed
-  VLAWMO



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Legal Boundary Review

DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
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- City Boundaries
- County Boundary
- New Watershed
- RCWD



Legal Boundary Review - Page 31 of 40

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RICE CREEK
WATERSHED
DISTRICT



Legal Boundary Review

DRAFT

- Areas Called Out in Memo
- RCWD Hydrologic Boundary
- Current RCWD Legal Boundary
- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary

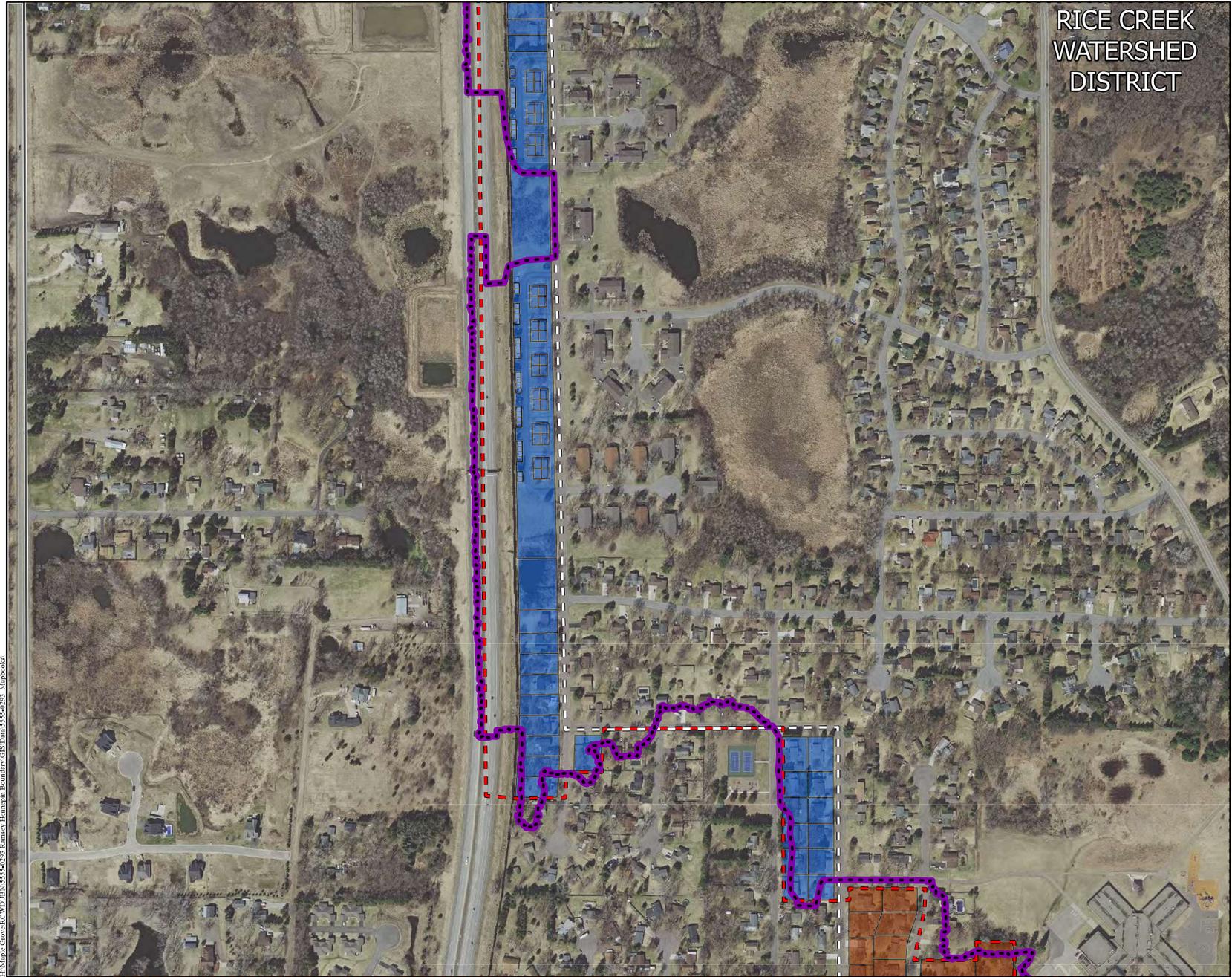
New Watershed

- RCWD
- VLAWMO



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Scale: 1:4,250	Drawn by: TWM	Checked by: COO	Project No: 5959-0293	Date: 12/12/2022	Sheet: 32 of 40
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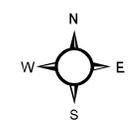
RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

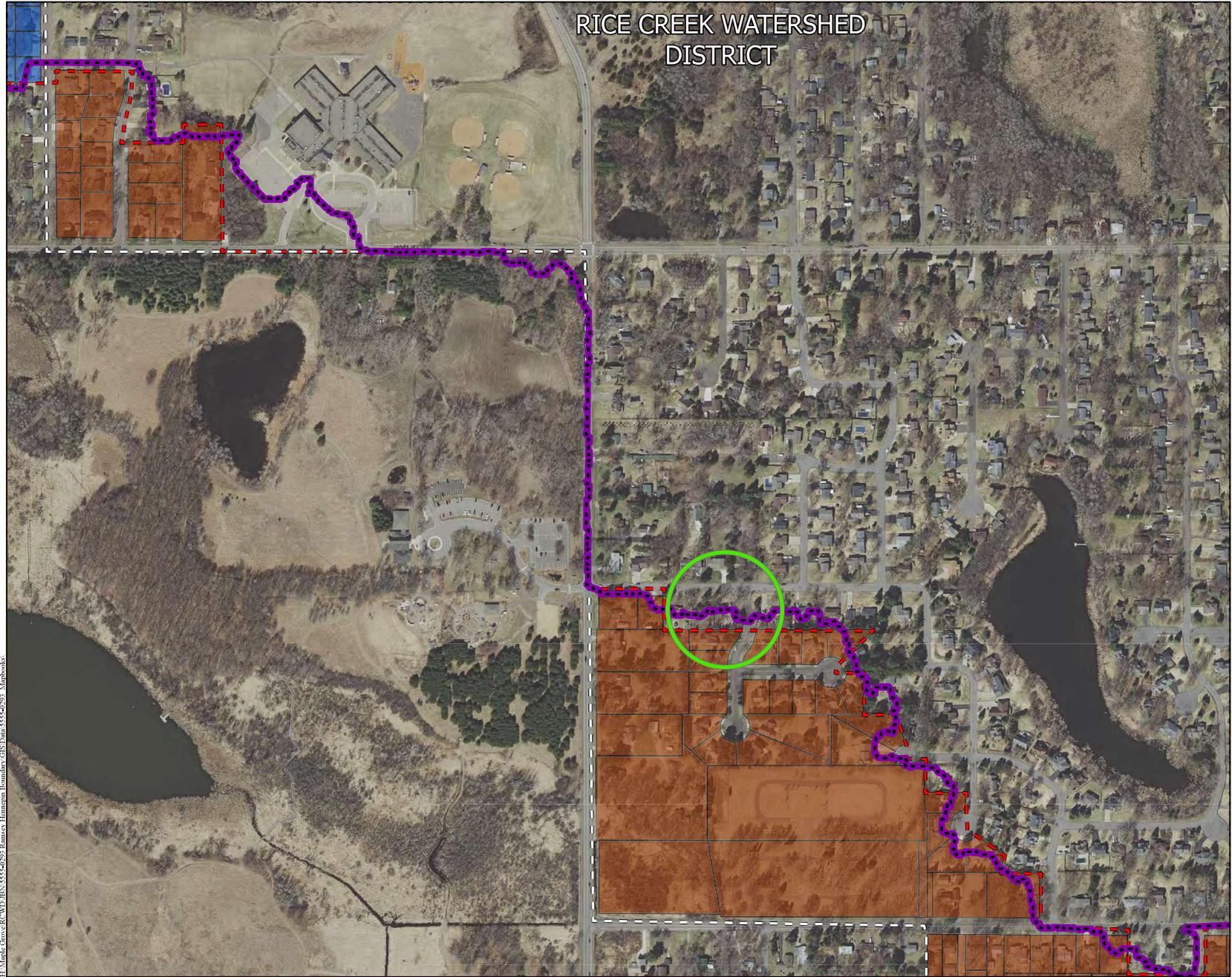
DRAFT

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- Recommended RCWD Legal Boundary
- City Boundaries
- County Boundary
- New Watershed**
- RCWD
- VLAWMO



Legal Boundary Review - Page 33 of 40

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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

DRAFT

- Areas Called Out in Memo
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- Current RCWD Legal Boundary
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- City Boundaries
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- New Watershed**
 - RCWD
 - VLAWMO



Legal Boundary Review - Page 34 of 40

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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

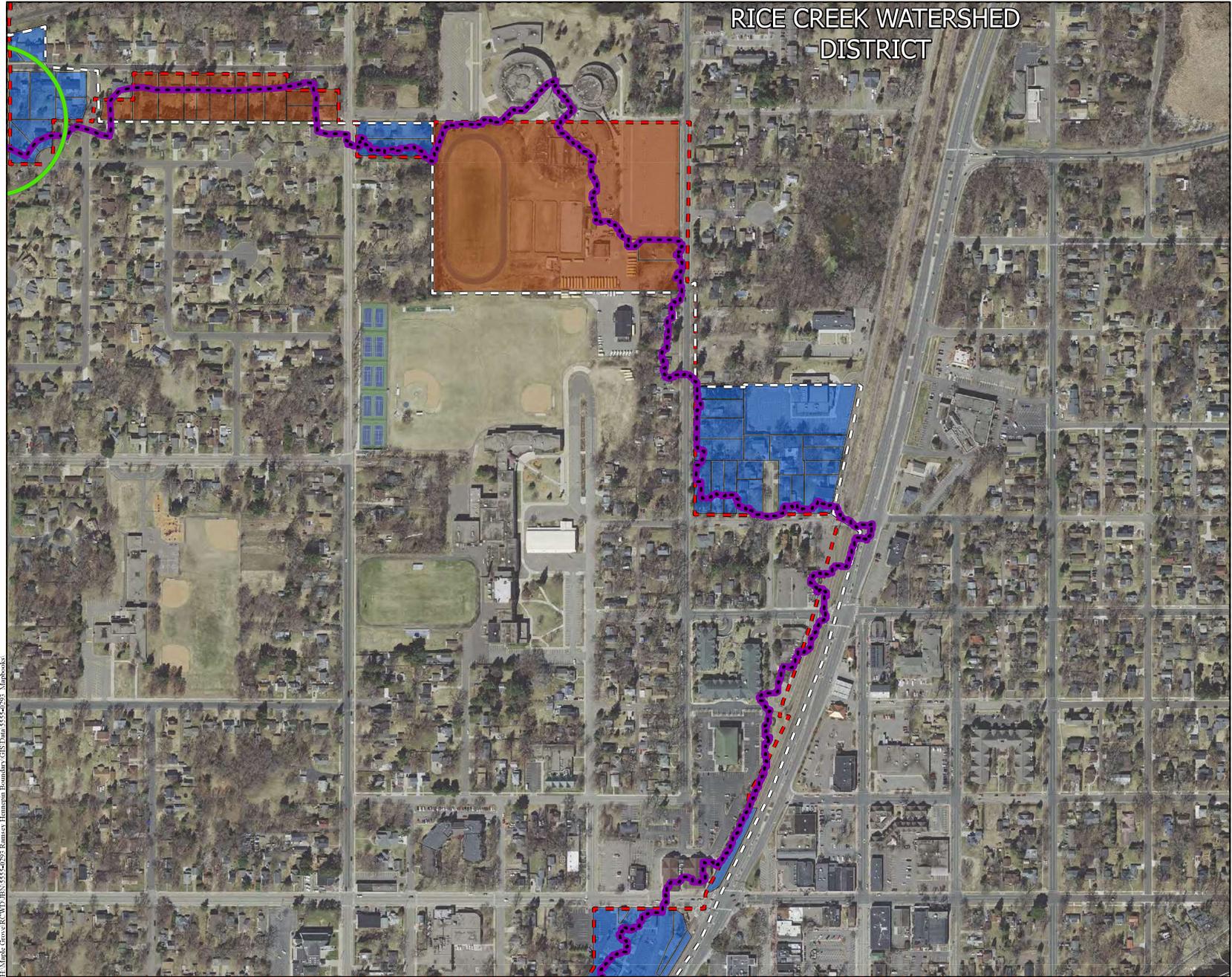
DRAFT

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- County Boundary
- New Watershed**
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 - VLAWMO



Legal Boundary Review - Page 35 of 40

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DRAFT

-  Areas Called Out in Memo
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-  County Boundary
- New Watershed**
 -  RCWD
 -  VLAWMO

RICE CREEK WATERSHED DISTRICT



Legal Boundary Review - Page 36 of 40

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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

DRAFT

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- New Watershed**
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Legal Boundary Review - Page 37 of 40

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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

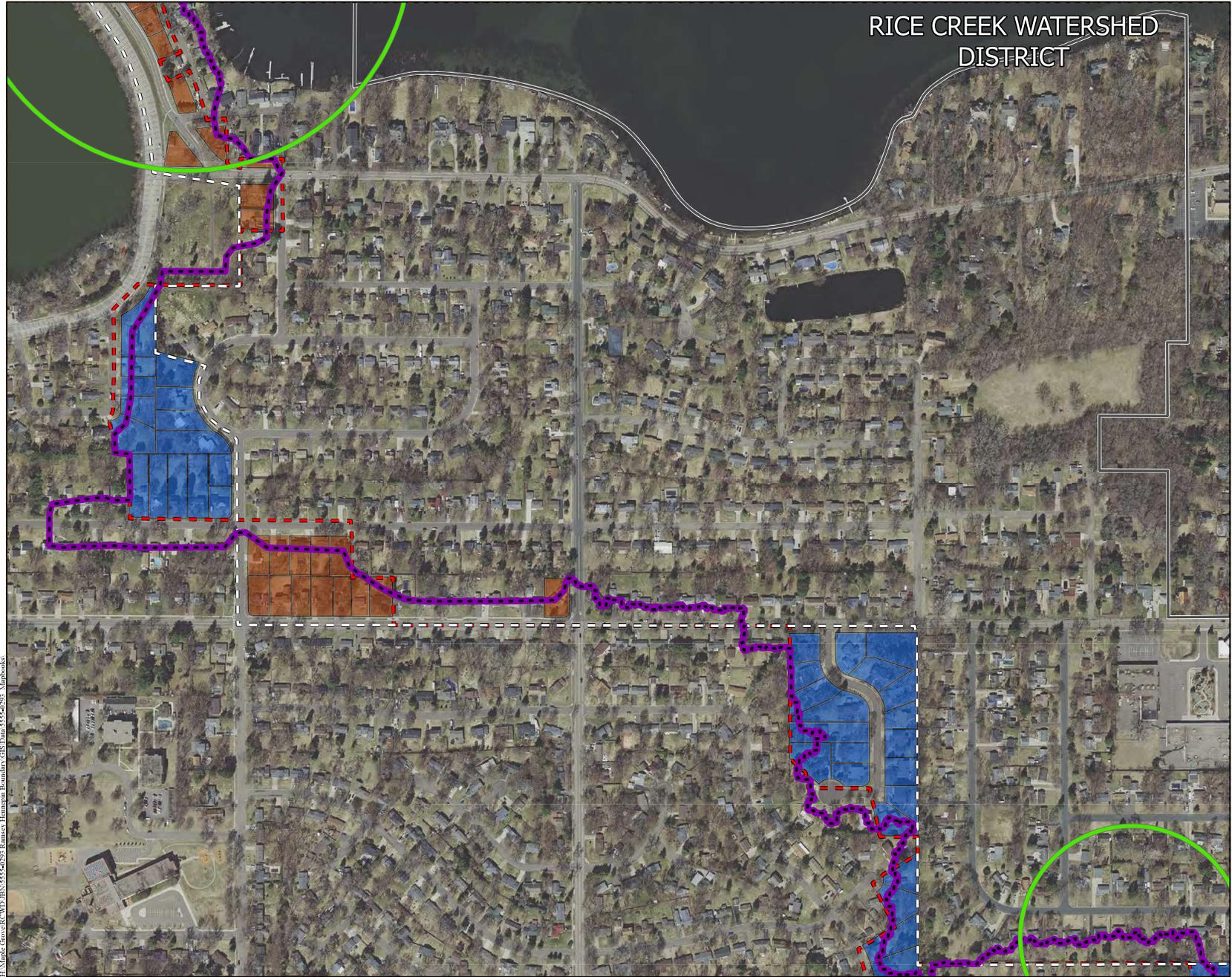
DRAFT

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- New Watershed**
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 - VLAWMO



Legal Boundary Review - Page 38 of 40

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RICE CREEK WATERSHED DISTRICT



Legal Boundary Review

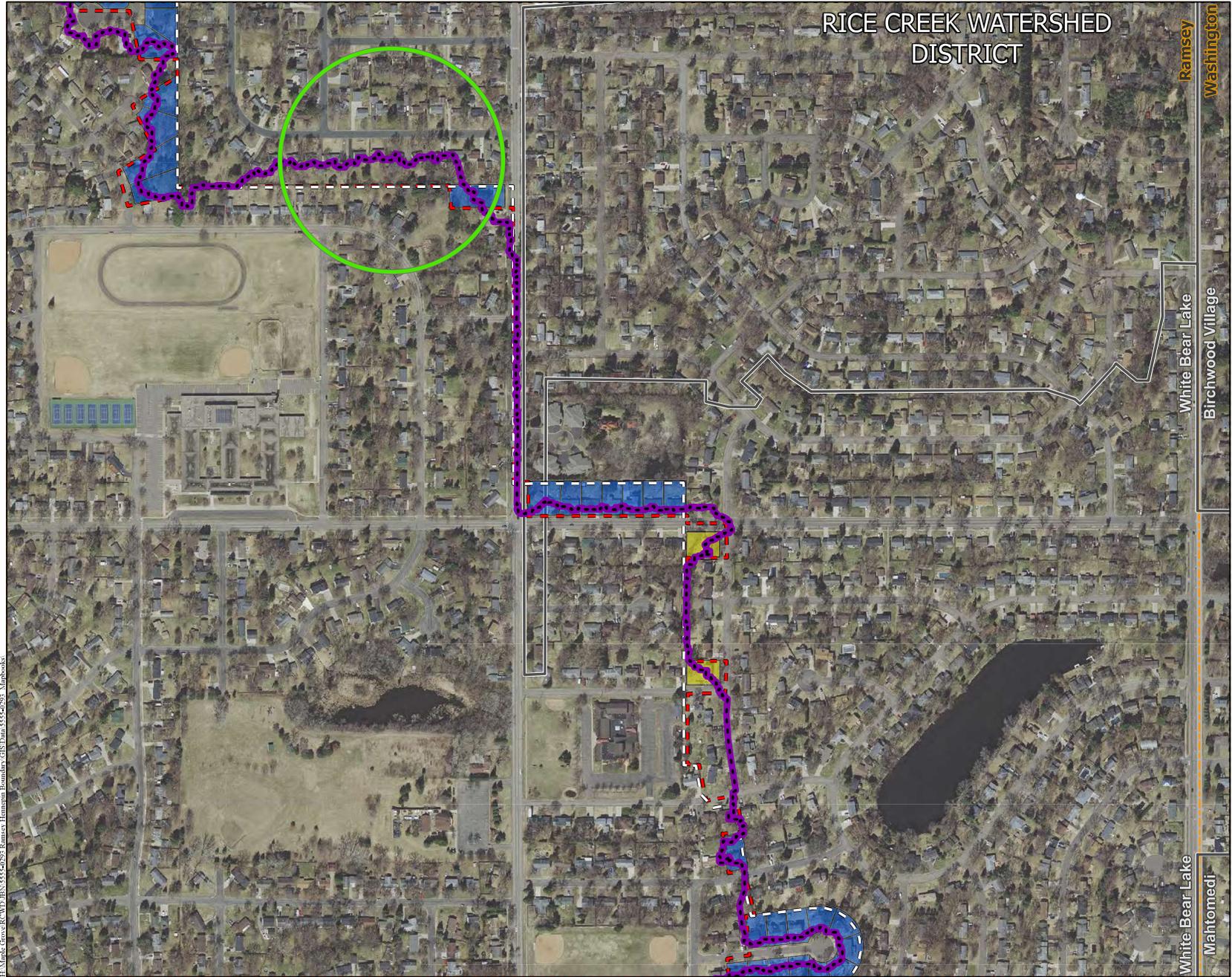
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- New Watershed**
- RCWD
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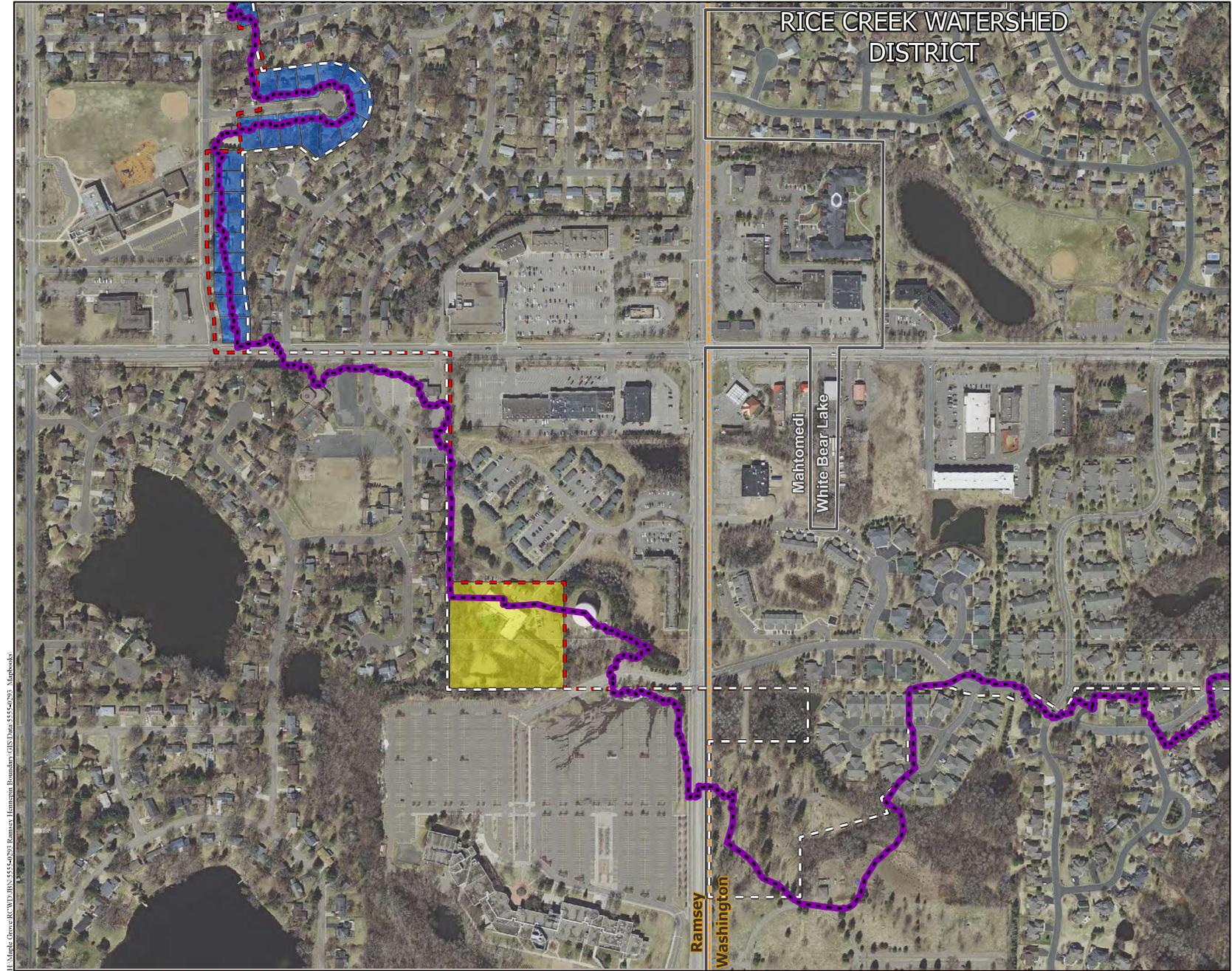


Legal Boundary Review - Page 39 of 40

Scale: 1:4,250	Drawn by: TWM	Checked by: COO	Project No: 5959-0293	Date: 12/12/2022	Sheet: 39 of 40
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Legal Boundary Review

DRAFT

- Areas Called Out in Memo
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- County Boundary
- New Watershed**
- RCWD
- RWMWD



Legal Boundary Review - Page 40 of 40

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