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MEMORANDUM

TO: Trevor Walter, PE, Public Works Director and City Engineer
Members of the Utility Commission
Honorable Mayor and Members of the City Council

FROM: Kevin Young, PE (Lic. MN, VA)
Neil Heinonen, PE (Lic. MN)

DATE: March 27, 2025

RE: Water Enterprise Fund 20-Year CIP
SEH No. BAXTE 183407 14.00

INTRODUCTION

SEH has prepared a summary of Water System projects and opinion of cost in collaboration with City Staff. The attached Exhibit A titled “Water CIP (By Year)”, dated March 27, 2025 includes a line item identifying individual projects, an opinion of cost (in some cases a range of costs), and an anticipated year for construction. The projects are grouped in different categories, as identified in this memo and within the attached exhibit. All costs included in this summary are calculated in 2025 dollars.

The projects and timelines identified in this report generally follow the report titled “Baxter Water System Planning and Hydraulic Model” dated December 31, 2024 and accepted by Council on January 7, 2025. This report identified “specific system changes that may be necessary” and also includes a “trigger chart” that noted general timeframes for water supply (wells and raw water improvements), water storage (water towers for daily demand and fire demand), and water distribution improvements. The trigger chart is included within the figures as Figure No. 11 for reference.

WATER TREATMENT PLANT (WTP)

The attached spreadsheet titled “Water CIP (By Year)”, dated March 27, 2025 includes a series of projects for improvements or studies at the Water Plant.

The attached cost summary spreadsheet includes a line item for “Future Water Treatment Plant Upgrades”. The study period in the “Baxter Water System Planning and Hydraulic Model” report does not identify plant expansion, rather it notes an optimization during the next several years, pending actual water use changes based on growth of the City. The cost of Future Water Treatment Plant Upgrades will be dependent upon the pilot study results from 2026, which will provide the information necessary for the City evaluate various process to increase the actual capacity of the WTP to its design capacity of 5 MGD.

The specific line item “Annual Maintenance Upgrades (per CAMP)” are items that have been pulled directly from the current working version of the Capital Asset Management Plan (CAMP) to identify dollar amounts for a given year.

Engineers | Architects | Planners | Scientists

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WELLS (MAINTENANCE AND REPLACEMENT OR EXPANSION)

The attached spreadsheet includes a series of projects for improvements or studies related to wells and water supply. A few of the projects are identified within the figures that are included with this memo.

The line items include the planned 2025 water supply project, and also include a series of projects for studies, new wells, new raw watermain, and other general maintenance needs. There are two specific lines for Well 8 and Well 8 Raw Watermain that are included within the spreadsheet, as they may be necessary within the 20-year timeframe. This section of the CIP also includes a specific line item "Maintenance Upgrades (yearly well rehab/per CAMP)", which include costs pulled directly from the current working version of the CAMP to identify dollar amounts for a given year.

The City's Minnesota Department of Health (MDH) Wellhead Protection Plan requires updates every 10 years. This was recently completed so the next update is anticipated in 2034. However, MDH may require an update earlier after Wells 5 and 6 are added.

WATER DISTRIBUTION

The attached spreadsheet includes a series of projects for improvements to the water system to provide for loops within the system. The project limits are generally noted in each line item, and the figures included with the memo identify the general extents of each project. Additionally, a line item for updating the hydraulic distribution system model with annual water main changes is included. Updating the water distribution system model annually ensures that data provided from periodic water modeling requests is accurate.

WATER STORAGE

The attached spreadsheet includes a series of projects for improvements to the water system related to construction, demolition, or rehabilitation of water storage tanks. The specific years for the improvements will be updated as development occurs and the needs for water demand and/or fire flow are better identified pending development.

STUDIES / REPORTS

The attached spreadsheet includes a line item for the CAMP to include yearly updates for the length of the CIP. It also includes line items for updating the City's Water System Master Plan as well as regulatory compliance reports such as the DNR Water Supply Plan and EPA America's Water Infrastructure Act documents.

mrB

Attachments:

Exhibit A: Water CIP (By Year), dated March 27, 2025
Project Location Maps and Trigger Chart

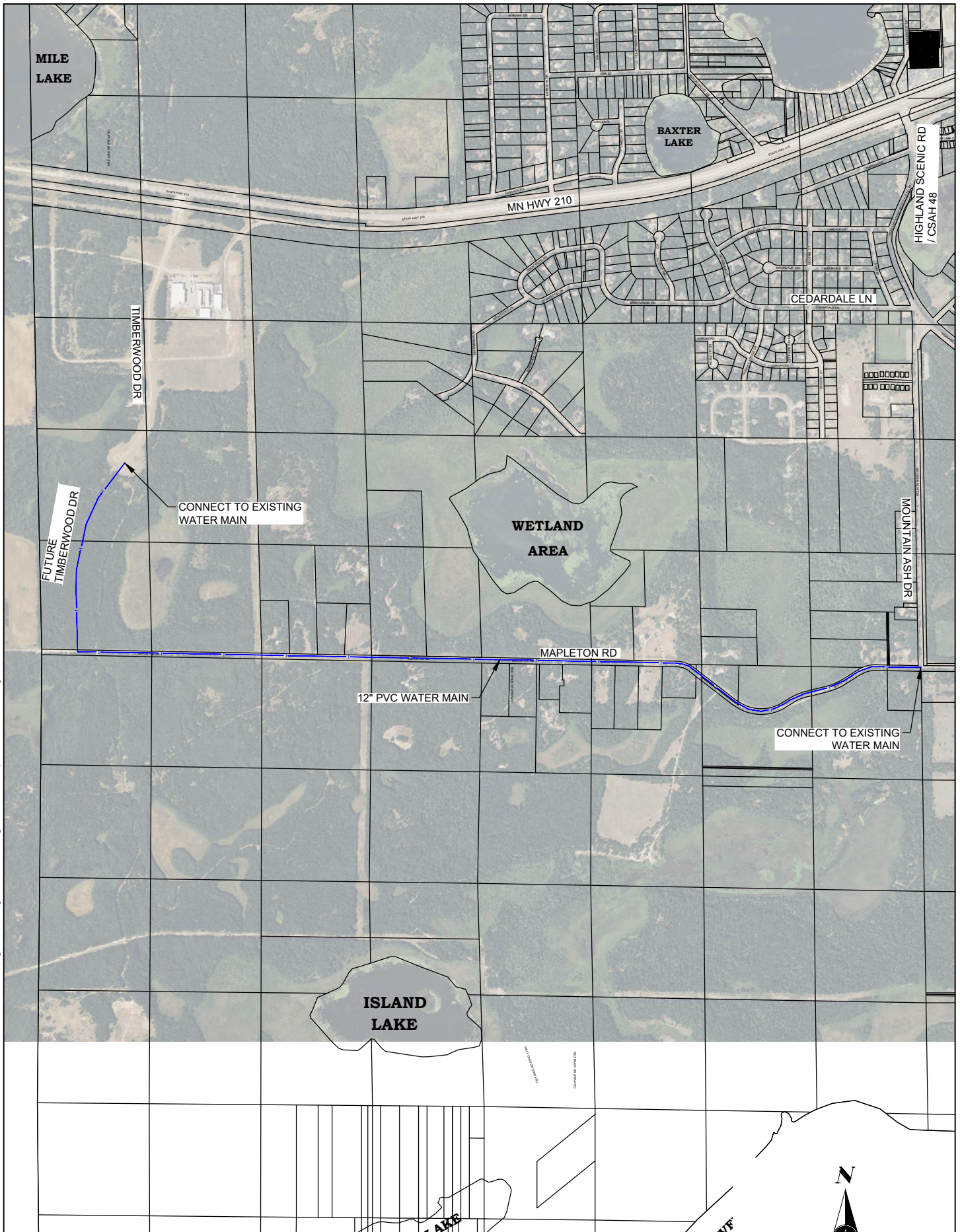
c: Trevor Thompson, City of Baxter
Scott Hedlund, SEH

Exhibit A:
WATER CIP (BY YEAR)

Date: March 27, 2025

		TOTAL PROJECT EST. COST													2025-2035 (IN 2025 DOLLARS)
CATEGORY	PROJECTS	YEAR	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	LONG TERM	
Water Treatment Plant (WTP)															
	Water Treatment Plant HVAC Improvements	2026		\$400,000											\$400,000
	Water Treatment Plant Pilot Study	SUMMER 2026		\$50,000											\$50,000
	Future Water Treatment Plant Upgrades	2027- 2030			\$200,000	\$1,000,000	\$7,000,000	\$3,000,000							\$11,200,000
	Annual Maintenance Upgrades (per CAMP)	Annual	\$1,300,000	\$350,000	\$5,400,000	\$350,000	\$850,000	\$420,000	\$1,250,000	\$1,500,000	\$650,000	\$200,000	\$1,200,000		\$13,470,000
Wells (maint and replacement or expansion)															
	Wells 5 & 6 - Water Supply Improvements	2025	\$2,348,500												\$2,348,500
	Well Pump replacement (Wells 1 & 4)	2025	\$33,400												\$33,400
	New Wellfield Expansion Exploration (for Well 7)	2027			\$250,000										\$250,000
	Well 7 Construction	2032								\$720,000					\$720,000
	Well 7 - Raw Water Main and Electrical	2032								\$1,680,000					\$1,680,000
	MDH Wellhead Protection Plan (every 10 years)	MULTIPLE										\$40,000		\$40,000	\$40,000
	Annual Maintenance and Rehabilitation (per CAMP)	Annual	\$100,000	\$40,000	\$840,000	\$85,000	\$5,000	\$50,000	\$125,000	\$1,000,000	\$80,000	\$5,000	\$90,000		\$2,420,000
LONG TERM (BEYOND 10 YEARS)	Well 8 Construction	TBD												\$720,000	\$0
LONG TERM (BEYOND 10 YEARS)	Well 8 (Raw Water and Electrical) - pending site analysis of Wellhead Expansion Study	TBD												\$2,000,000 to \$4,000,000	\$0
Water Distribution			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035		
	Lake Forest Road and Novotony Road Watermain Loop	2026		\$980,000											\$980,000
	Forestview Dr to Hasting Rd (East Loop)	2026		\$1,232,000											\$1,232,000
	Watermain Removal for TH 210/371 Interchange Project	2027			\$240,000										\$240,000
	Olivewood Drive Watermain Looping (water distribution only) - Cedar Scenic to TH 210	2028				\$1,627,000									\$1,627,000
	Oakwood Drive Watermain Looping (water distribution only) - Cedar Scenic to Weldon	2028				\$735,000									\$735,000
	Inglewood Watermain Loop	2034										\$1,100,000			\$1,100,000
	Mapleton Road Watermain Looping- Mountain Ash to Timberwood Dr	2034										\$3,780,000			\$3,780,000
	Water Model Piping Updates	Annual	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500		\$27,500
Water Storage		YEAR	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035		
	1.25 MG Water Tower - Water Tower Construction- West Side	2028				\$9,500,000									\$9,500,000
	Tower Demolition (South Tower/Home Depot area)	2030						\$250,000							\$250,000
	REHAB East Tower	2032								\$1,600,000					\$1,600,000
LONG TERM (BEYOND 10 YEARS)	REHAB North Tower	2038/TBD												\$1,200,000	\$0
Studies / Reports			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035		
	CAMP (2025 & Recurring)	MULTIPLE	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$90,000	\$82,500
	Water Master Plan Update (every 5 years)	MULTIPLE					\$45,000					\$45,000		\$45,000	\$90,000
	DNR Water Supply Plan (every 10 years)	MULTIPLE			\$20,000									\$20,000	\$20,000
	EPA AWIA Updates (Risk & Resiliency/Emergency Response) (every 5 years)	MULTIPLE		\$20,000					\$20,000					\$20,000	\$40,000
			\$3,791,900	\$3,082,000	\$6,960,000	\$13,307,000	\$7,910,000	\$3,730,000	\$1,405,000	\$6,510,000	\$740,000	\$5,180,000	\$1,300,000	\$2,135,000	\$53,915,900

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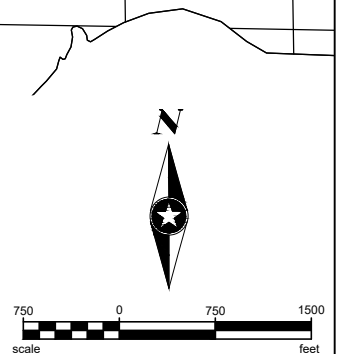


PROJECT NO.
BAXTE 183407

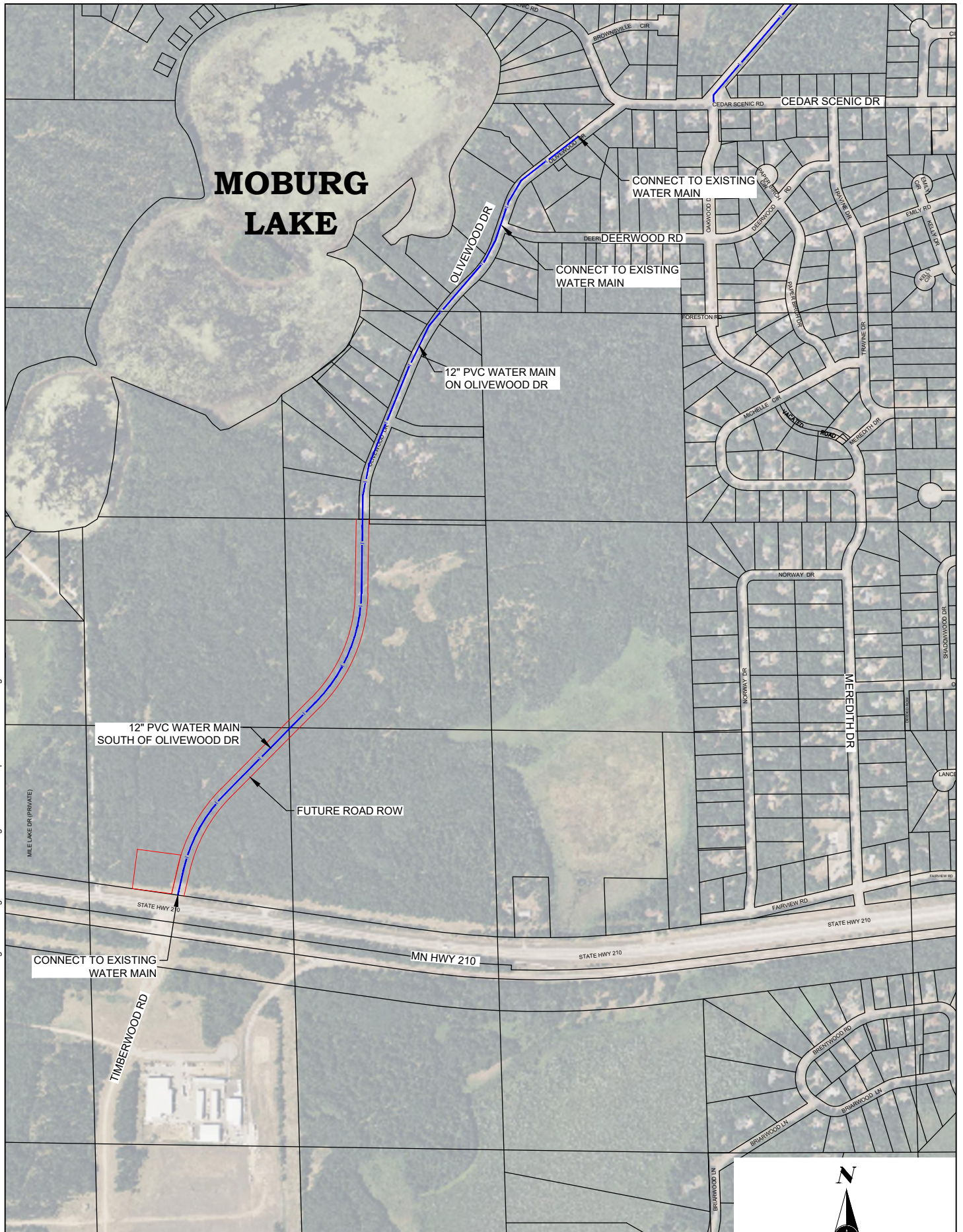
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3/26/2025

**MAPLETON ROAD WATER MAIN
EXTENSION
BAXTER, MN**

**FIGURE
NO. 1**



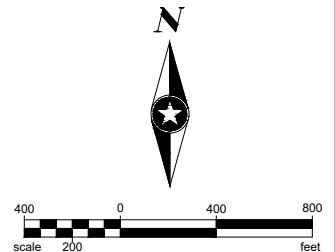
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3/26/2025

OLIVEWOOD DRIVE WATER MAIN EXTENSION BAXTER, MN

FIGURE
NO. 2



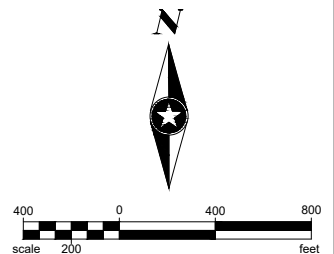
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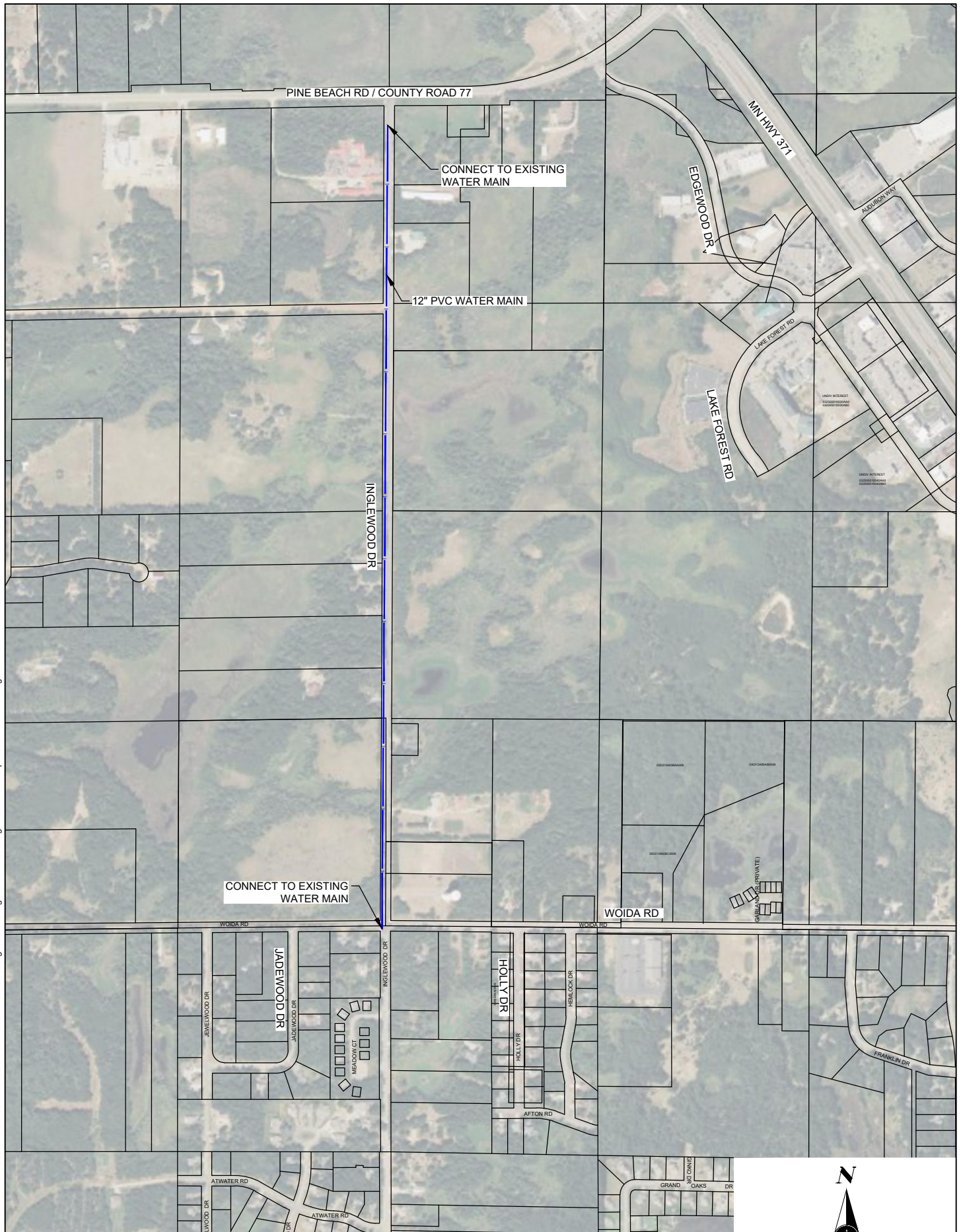
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DATE:
3/26/2025

**OAKWOOD DRIVE WATER MAIN
EXTENSION
BAXTER, MN**

FIGURE
NO. 3



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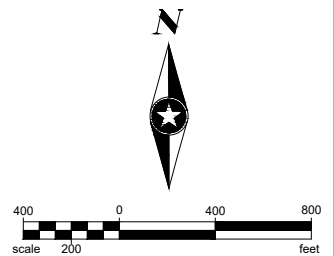


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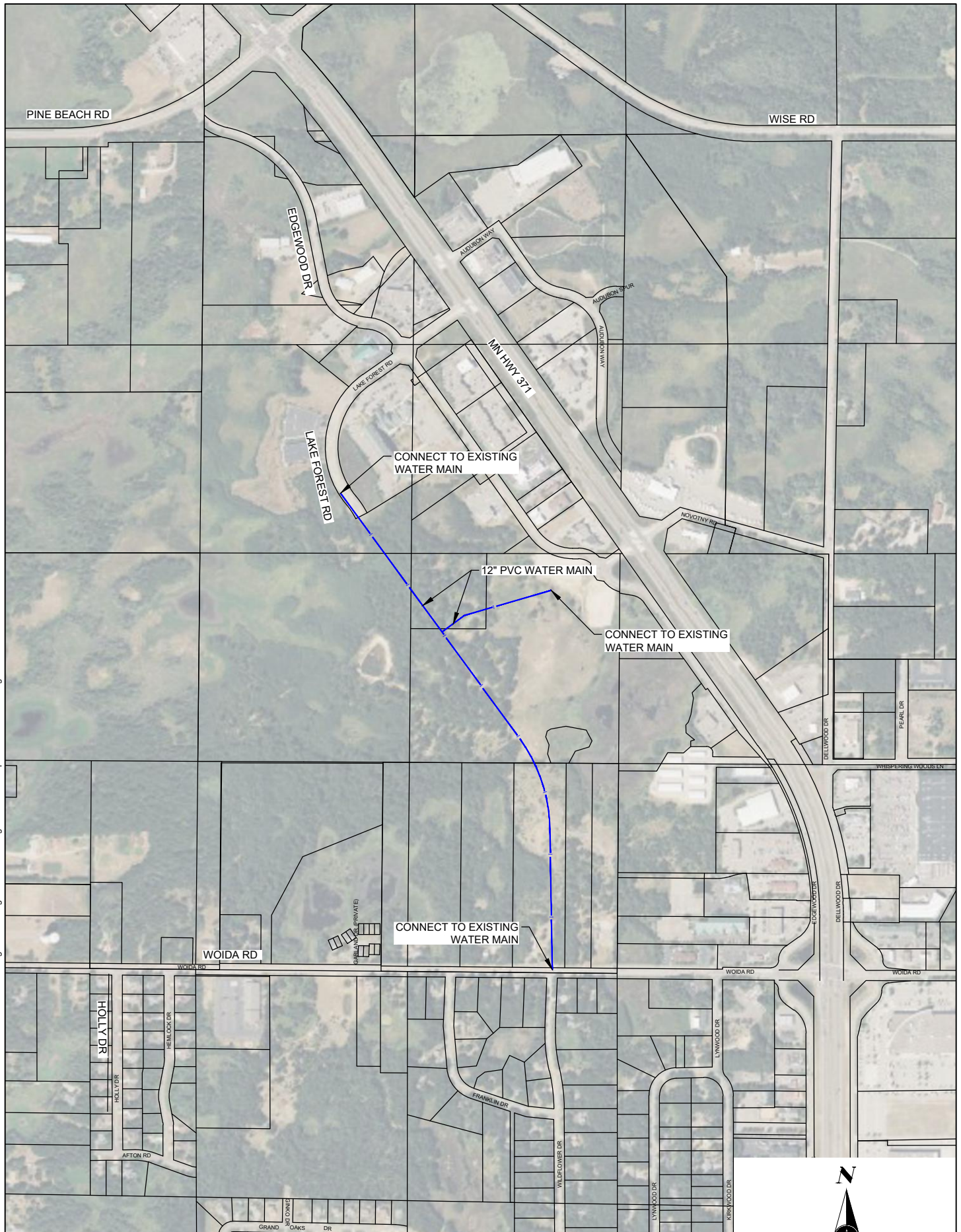
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INGLEWOOD DRIVE WATER MAIN EXTENSION BAXTER, MN

FIGURE
NO. 4



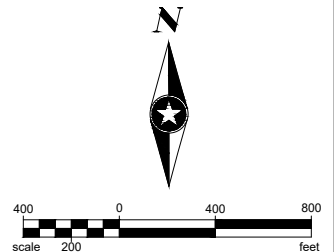
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PROJECT NO.
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DATE:
3/26/2024

**LAKE FOREST ROAD WATER MAIN
EXTENSION
BAXTER, MN**

**FIGURE
NO. 5**



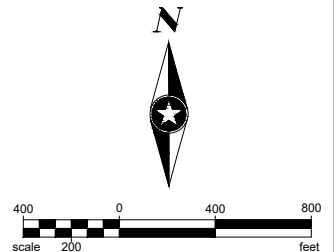
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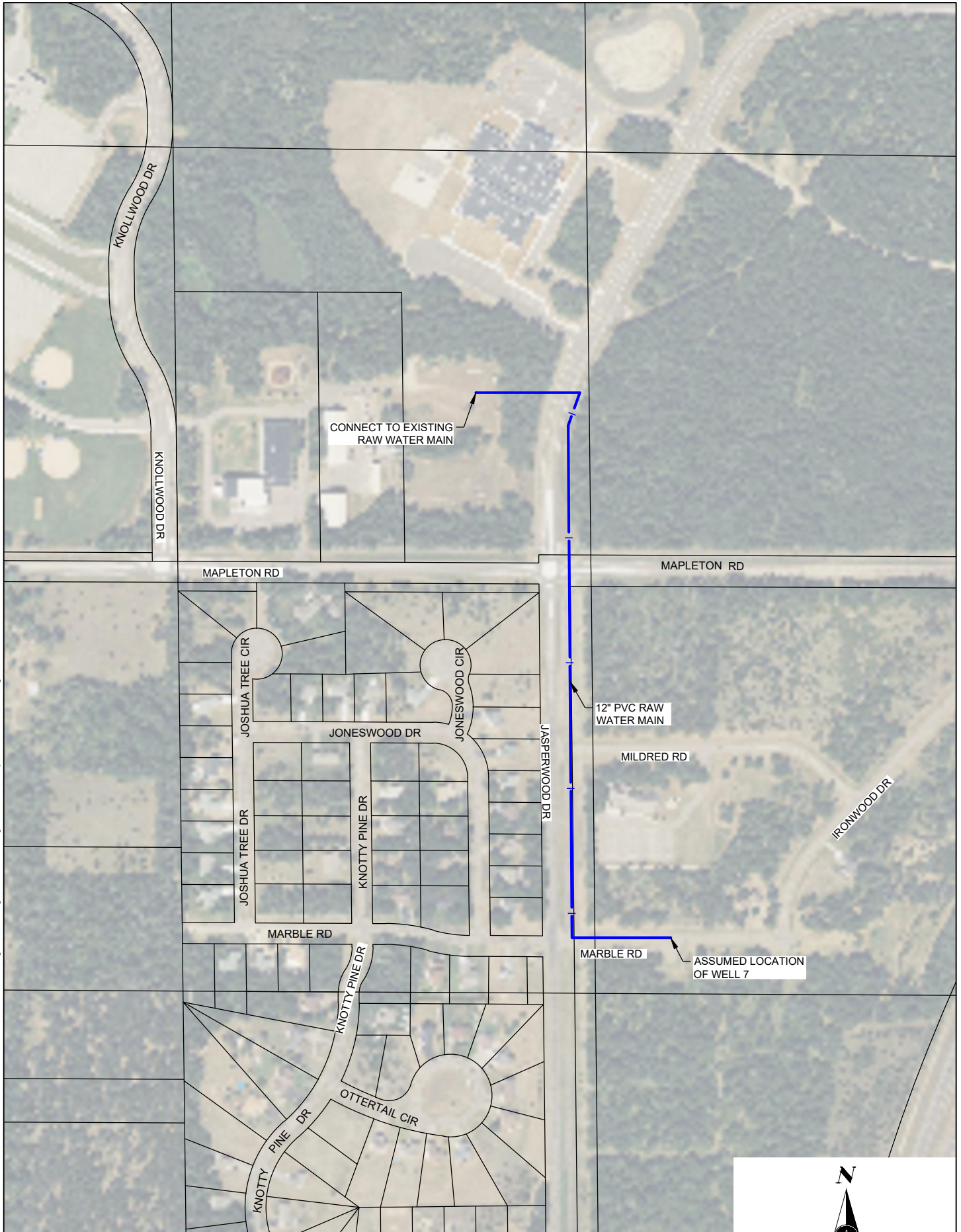
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3/26/2024

EAST LOOP WATER MAIN EXTENSION BAXTER, MN

FIGURE
NO. 6



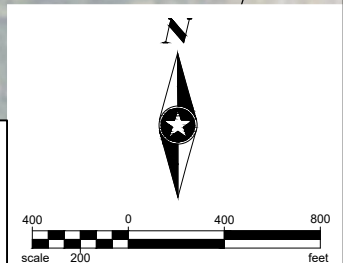
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RAW WATERMAIN TO WELL 7 BAXTER, MN

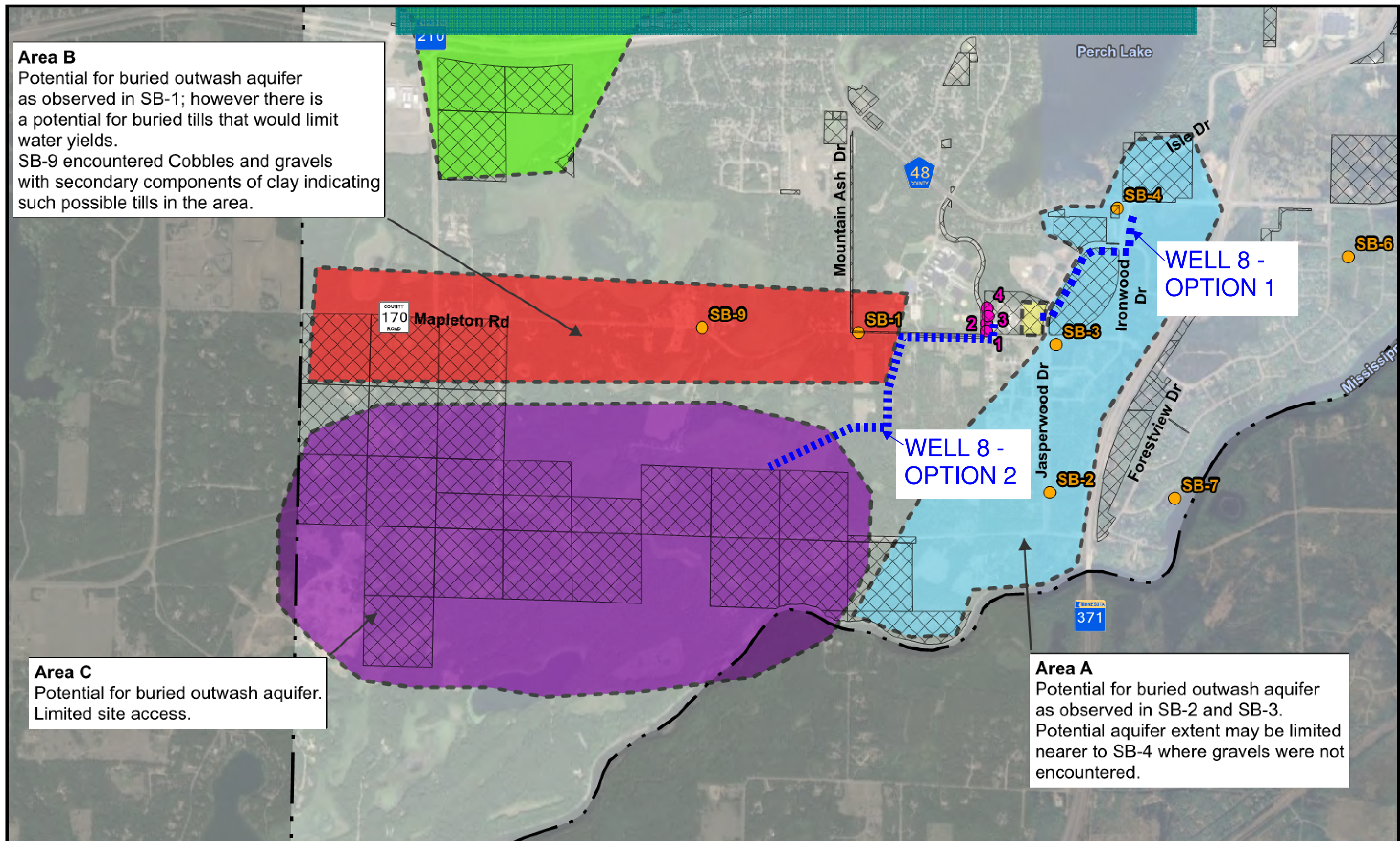
FIGURE
NO. 7



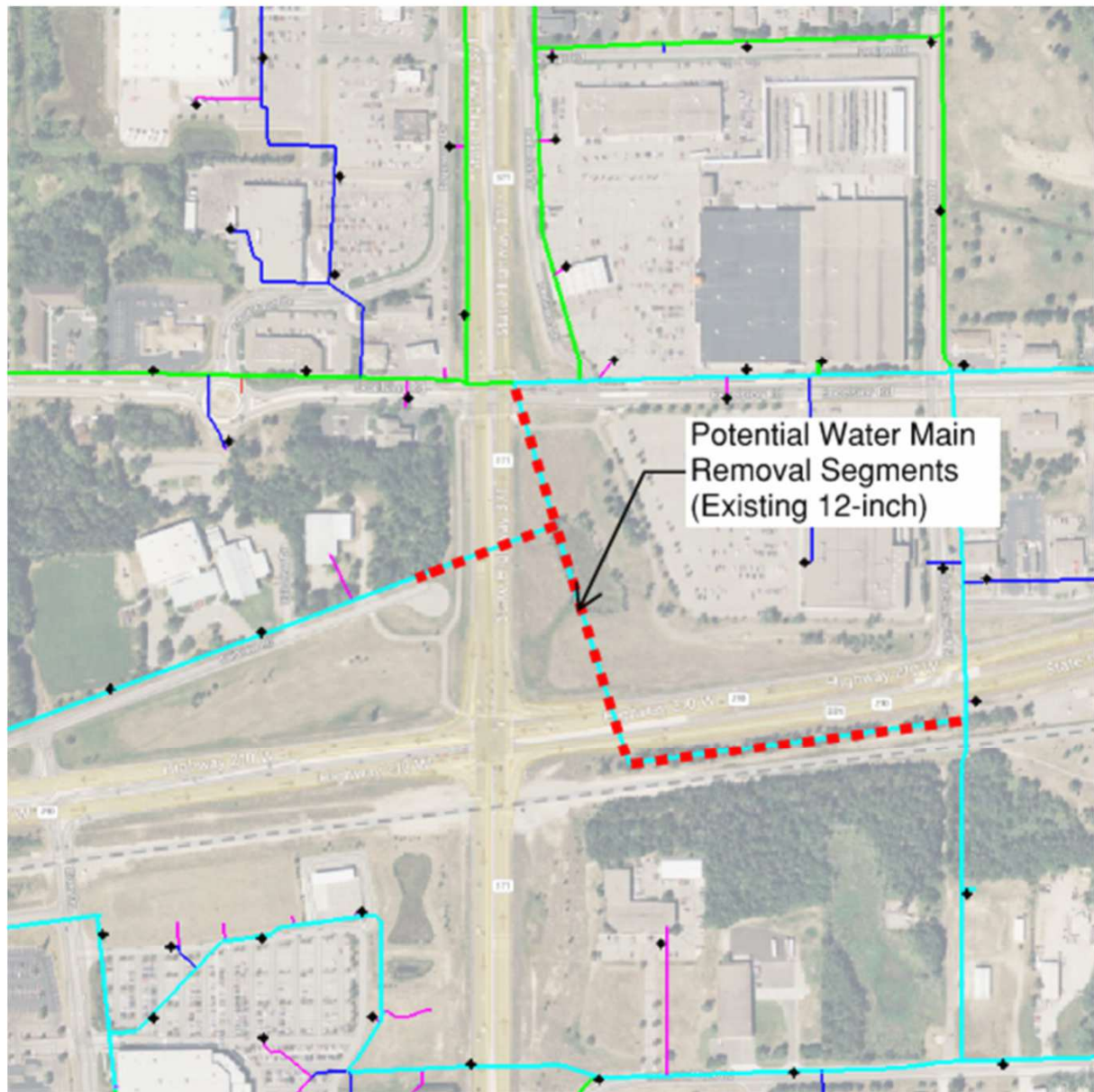
Area B
 Potential for buried outwash aquifer as observed in SB-1; however there is a potential for buried tills that would limit water yields. SB-9 encountered Cobbles and gravels with secondary components of clay indicating such possible tills in the area.

Area C
 Potential for buried outwash aquifer. Limited site access.

Area A
 Potential for buried outwash aquifer as observed in SB-2 and SB-3. Potential aquifer extent may be limited nearer to SB-4 where gravels were not encountered.



RAW WATERMAIN TO WELL 8 - OPTION 1 and OPTION 2 | FIGURE 8 - MARCH 28, 2025



WATERMAIN REMOVAL - TH 210/TH 371

FIGURE 9

**MILE
LAKE**

MILE LAKE DR (PRIVATE)

PROPOSED 1.5MG
WATER TOWER

250' X 250' PROPOSED
WATER TOWER SITE

FUTURE ROAD

FUTURE ROAD ROW

MN HWY 210

16" PVC WATER MAIN

12" PVC WATER MAIN

STATE HWY 210

CONNECT TO EXISTING
WATER MAIN

TIMBERWOOD DR

INDEPENDENCE RD



PROJECT NO.
BAXTE 183407
DATE:
3/26/2025

**NEW WEST SIDE WATER TOWER
BAXTER, MN**

**FIGURE
NO. 10**



Water Use Projections + Water Supply Trigger Chart - City of Baxter, MN

