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Rock County Rural Water District  
541 150th Avenue  
Luverne, MN 56156  
[Ryan.Holtz@co.rock.mn.us](mailto:Ryan.Holtz@co.rock.mn.us)

March 11th, 2022

Minnesota Department of Health  
DWRF Program  
P.O. Box 64975  
St. Paul, Minnesota 55164-0975

Dear Revolving Fund Coordinator,

Enclosed is the Rock County Rural Water District's proposal to place their Water Tower and Pipeline project on the fiscal year 2022 Drinking Water Revolving Fund Project Priority List.

Thank you for your consideration.

Sincerely,

Ryan Holtz, Manager

Enclosures

cc: Ben Meyer, Banner Associates, Inc.  
Bryan Lipp, Banner Associates, Inc.

# Drinking Water Revolving Fund Application

## Project Priority List

### Project Owner

Rock County Rural Water District

### Project Name

West Tower #2

### Contacts

#### **Rural Water District Representative**

Ryan Holtz, Manager  
Rock County Rural Water District  
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Luverne, MN 56156  
507-283-8886  
[Ryan.Holtz@co.rock.mn.us](mailto:Ryan.Holtz@co.rock.mn.us)

#### **Proposal Writer**

Ben Meyer  
Banner Associates, Inc.  
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## Community Statistics & Population

Rock County Rural Water District (RCRWD) serves customers within the county limits of Rock County, MN. RCRWD serves a majority of Rock County excluding the City of Luverne and the far north and northeast portions of the county. The following information is from the US Census Bureau and is for Rock County, including the City of Luverne.

2020 Census Population: 9,704

2015-2019 Households: 3,914

2015-2019 Median Household Income: \$63,005

## System Description

### General

The RCRWD distribution system consists of three (3) booster stations, two (2) water towers, one (1) ground storage reservoir, approximately 386 miles of distribution pipe, and two (2) connections to Lewis and Clark Regional Water System (L&CRWS). RCRWD serves approximately 560 type 1 customers (3/4" Meter - rural residences / farms); 38 type 4 customers (1" meter - Ag / Livestock); 170 type 6 customers (Small Businesses); three bulk connections which serve the towns of Magnolia, Hills, and Steen; and one emergency city connection for the town of Beaver Creek.

### Storage

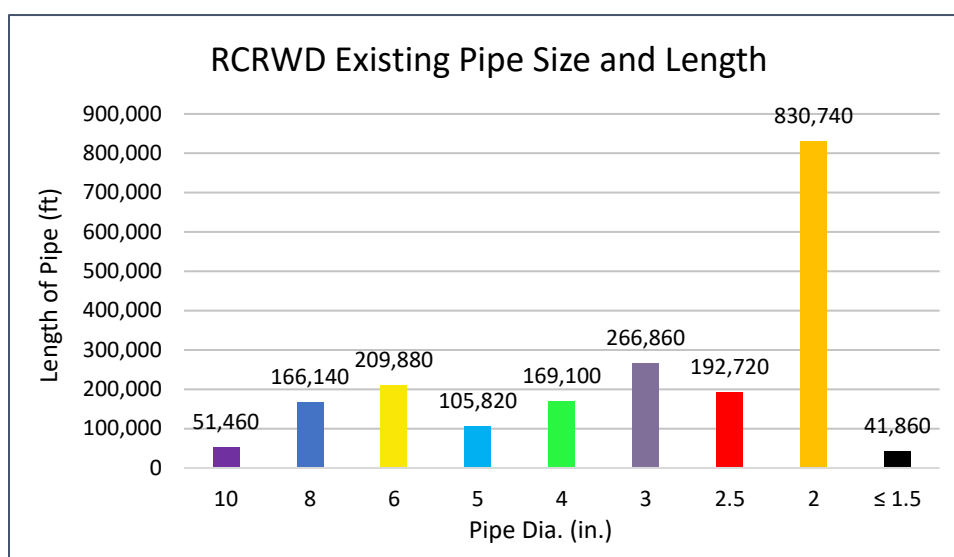
The table below shows a summary of the existing storage in RCRWD's system.

**Existing RCRWD Water Storage**

Name	Type	Year Built	HGL (ft)	Low Water Elev. (ft)	Head Range (ft)	Diameter (ft)	Height (ft)	Storage (gal)
Magnolia Tower	Elevated	2000	1680	1651	29	34.1	131	200,000
<b>East Total Elevated Storage:</b>								<b>200,000</b>
Beaver Creek Tower	Elevated	1979	1693	1668	25	30.4	121	125,000
<b>West Total Elevated Storage:</b>								<b>125,000</b>
Beaver Creek BPS Clearwell	Ground		1540	0	13	25.6	–	50,000
WTP East Clearwell	Ground	2000	–	–	–	–	–	140,000
WTP West Clearwell	Ground	1979	–	–	–	–	–	108,000
<b>Total Ground Storage:</b>								<b>298,000</b>
<b>Total Elevated Storage:</b>								<b>325,000</b>
<b>Total Storage:</b>								<b>623,000</b>

## Distribution

The 386 miles of distribution system water mains range in size from 2-inch to 10-inch in diameter and is all PVC. 1.5-inch pipes are generally only used for service lines. A summary of the amount of pipe that is currently installed in the RCRWD distribution system is shown below.



## Need for Improvements

### Storage

The Minnesota Department of Health follows Ten States Standards recommendations for water storage. Ten States Standards Section 7.0.1 “Sizing” states the minimum storage capacity (or equivalent capacity) for systems not providing fire protection shall be equal to the average daily consumption. A general rule of design rule of thumb is to have one peak day’s demand in total storage capacity. In 2020, the average day demand for RCRWD was 0.82 MGD and the peak day demand was 1.29MGD. This compared to the 0.325 MG stored in the RCRWD’s two (2) elevated towers and the 0.623 MG of total storage is significantly less than the recommended storage volume.

Additionally, RCRWD infrastructure struggles to maintain the level in the existing Beaver Creek Tower, whose water level trends downward, during periods of peak demands. The construction of additional elevated storage will help RCRWD maintain appropriate levels in the Beaver Creek Tower.

## Alternatives

### Storage

The following water storage alternatives were evaluated for RCRWD:

1. **New 500,000-gallon Water Tower, “West Tower #2”** – This new tower would provide additional elevated storage capacity for RCRWD. This new tower would be constructed with the same HGL as the existing Beaver Creek Tower. This alternative also includes 1-mile of 8-inch watermain, which allows the proposed and existing tower water levels to float together and increases system capacity. Estimated cost - \$3,133,350
2. **Do nothing.** The system will continue to have difficulties maintaining levels in the existing Beaver Creek Tower on peak day demands and will have a very short reserve of water in the case of an emergency at the WTP or in the distribution system. The system will continue to not meet Ten States Standards for elevated storage.

### Alternative Selected

**Storage – New 500,000-gallon Elevated Storage Tower, “West Tower #2”** – West Tower #2, once constructed, will have a useful life of 80+ years when properly maintained. The alternative to do nothing is not ideal based on Ten States Standards and the development of RCRWD as a safe, reliable, drinking water source for its existing and future customers.

RCRWD would like to list the West Tower #2 storage improvement project on the Project Priority List at this time.

### Cost Summary

#### West Tower #2 - \$3,113,350

Description	Cost
Construction Cost (Including 25% Contingencies)	\$2,829,150
Engineering	\$271,900
Other Expenses	\$32,300
Total	\$3,133,350

## Project Schedule

### West Tower #2

Engineering Plans and Specifications: June 6, 2022

Bid Project: August 10, 2022

Award Contract: September 12, 2022

Begin Construction: April 2023

Substantial Completion: July 2024

Final Completion: August 2024

One Year Warranty Inspection: July 2025

### Miscellaneous

Attached are a RCRWD map with the locations of proposed West Tower #2 project and a project cost estimate.



# RCRWD West Tower #2 Project Map

## Existing Pipe

Less than 2"	4"	10"
2"	5"	12"
2.5"	6"	14"
3"	8"	Greater than 14"

## Pumps

 Existing Pumps


## Tanks

 Existing Tanks

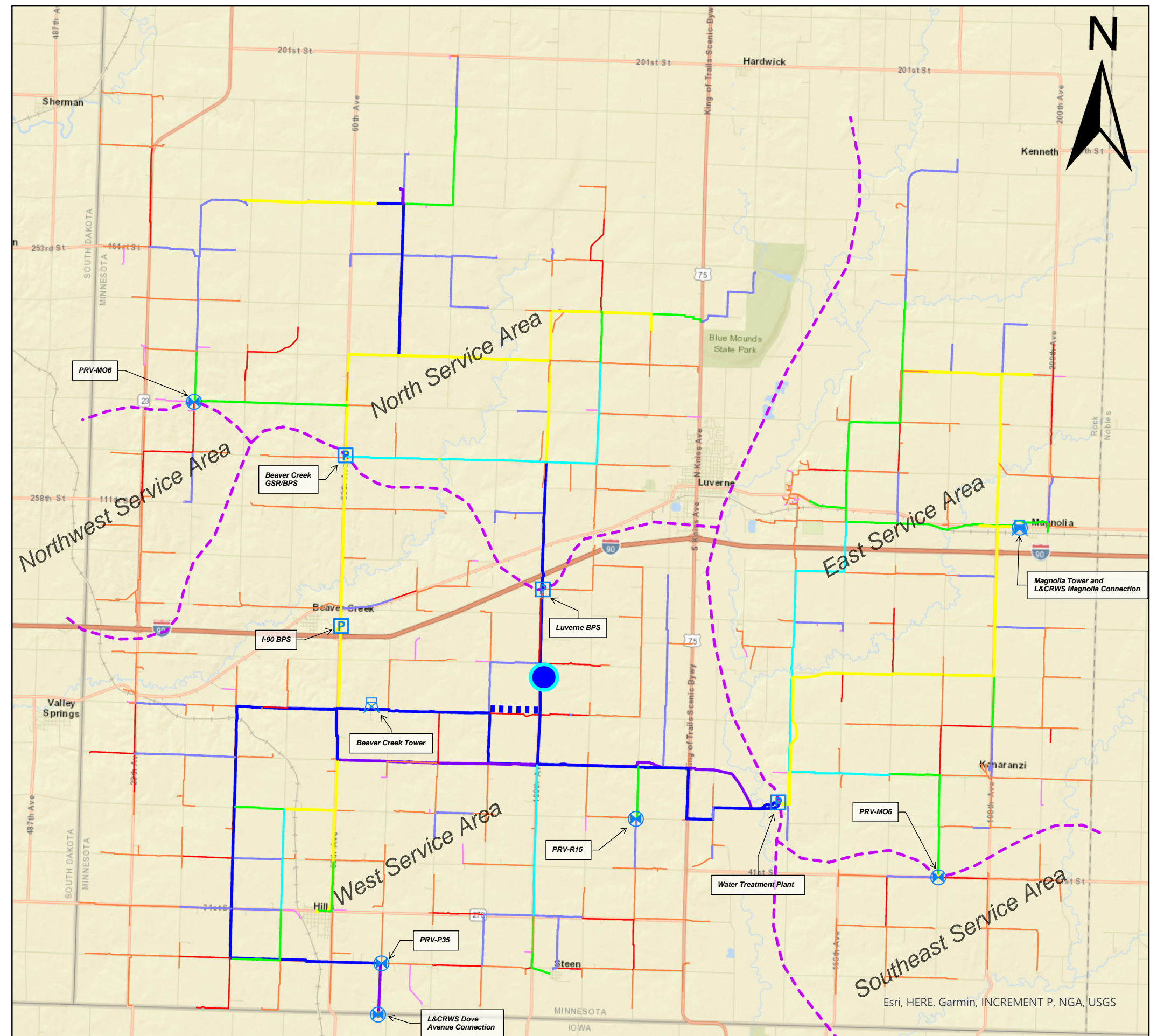
## Valves

 Existing Valves

 Existing Pressure Zones

 Proposed 8-inch Pipe

 Proposed West Tower #2 Location





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409 22nd Ave So, Box 298  
Brookings, SD 57006  
Tel 605.692.6342  
Toll Free 855.323.6342  
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# OPINION OF PROBABLE PROJECT COST

**PROJECT** 500,000-gallon Tower "West Tower #2" and 1 mile of 8" Watermain

**BAI NO.** 23769.00.00

**LOCATION** Rock County Rural Water District, Near Luverne, MN

**DATE** 3/10/2022

ITEM NO.	DESCRIPTION OF WORK AND MATERIALS	QTY	UNIT	UNIT PRICE	TOTAL
1	Mobilization, Bonds & Insurance	1	LS	\$168,000	\$168,000
2	500,000-Gallon Spheroid Elevated Tank	1	LS	\$1,700,000	\$1,700,000
3	Electrical	1	LS	\$17,250	\$17,250
4	Site Grading & Driveway	1	LS	\$20,000	\$20,000
5	Chain Link Fence	860	LF	\$10.00	\$8,600
6	Seeding and Restoration	1	LS	\$10,000	\$10,000
7	10" Site Piping and Accessories	1	LS	\$30,000	\$30,000
8	SCADA Hardware & Controls Integration	1	LS	\$20,000	\$20,000
9	Mixing System	1	LS	\$35,000	\$35,000
10	8" Watermain Loop	5,300	LF	\$48	\$254,400
Contingencies (25% of Construction Costs) =					\$565,900
<b>Opinion of Probable Construction Costs =</b>					<b>\$2,829,150</b>
Design Phase Services =					\$90,600
Bid Phase Services =					\$17,000
Contract Administration Services =					\$70,800
Resident Engineering =					\$92,000
Construction Plans of Record =					\$1,500
Reimbursable Expenses =					\$14,200
Geotechnical Services =					\$7,500
Crop Damage =					\$1,500
Administration and Legal =					\$9,100
<b>Opinion of Probable Project Cost =</b>					<b>\$3,133,350</b>