THE CITY OF
NORTHFIELD
MINNESOTA
ESTD 1855

Discussion on Water Treatment Plant

February 11, 2025

Agenda

- Federal Funds Use
- Water Treatment Plant Options and Estimated Costs
- Options comparison and rates
- Discussion

Federal Funds

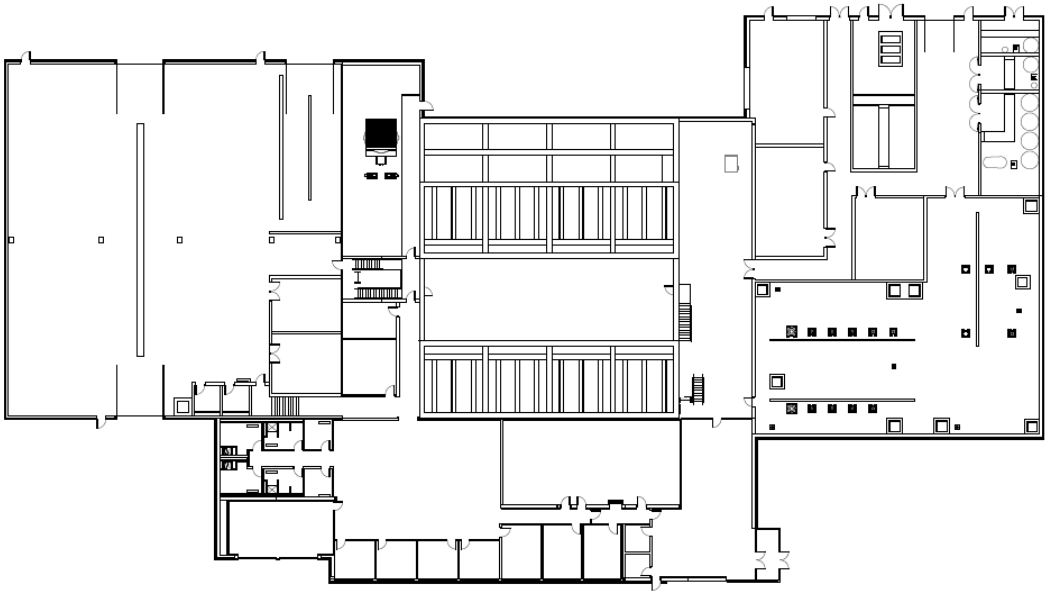
- Received $3,945,000 in federal funds to be used for water or wastewater project in City of Northfield
- Federal Funds were planned to be used for Reverse Osmosis
- If not using reverse osmosis, there is not a viable option for use of federal funds at the water treatment plant
- City needs to be in an agreement with the Army Corps of Engineers in summer 2025 that allocate what the funds use is in the agreement or we forgo the funding
- Could consider use for Water Tower (estimated $8,398,000 with piping)
  - If water tower, would require tower to begin design in 2025.
  - This would add $4,453,000 in additional loans 5 years sooner than planned and at a higher interest rate than water treatment plant due to not using PFA funds(water tower not on PFA application).
  - Rates would increase approximately $2.23 or more for water tower being sooner due to unknown interest rates for the project.
  - Previous water rate report recommended moving water tower construction to 2030 to help with rates.
  - Staff is still working through the details with the ACOE on this issue and would have more information in the future.

All Options

- Value Engineering takes place during project construction
  - Discussed different value engineering items with contractor and would estimate around $500,000 in potential savings up front
- $10 of monthly additional water bill costs is for non-Water Treatment Plant Capital Projects
- For every approximated $2,000,000 in project savings, there is a $1.00 per month decrease in water rates
- Project cost per square foot is around $405 for Reverse Osmosis, $490 for office area and $385 for garage space
- Redesign of projects is estimated to take 6-12 months and roughly cost between $200,000 and $900,000
- Project costs are increasing 0.4% - 1.0% per month
- No formal rate study done based on updated numbers
- Current interest rates are stable, future interest rates are unknown
- If tariffs are imposed, prices could significantly increase

Option 1 – No Softening with staff relocating

- Remove Reverse Osmosis
- Remove Portion of Garage (build for today's use)
- Remove Meeting room and entry area
- Building reduced by approximately 14,025 sq. ft.
- All Utilities staff and equipment move to WTP



Graphic Scale for 1/16"=1'-0"

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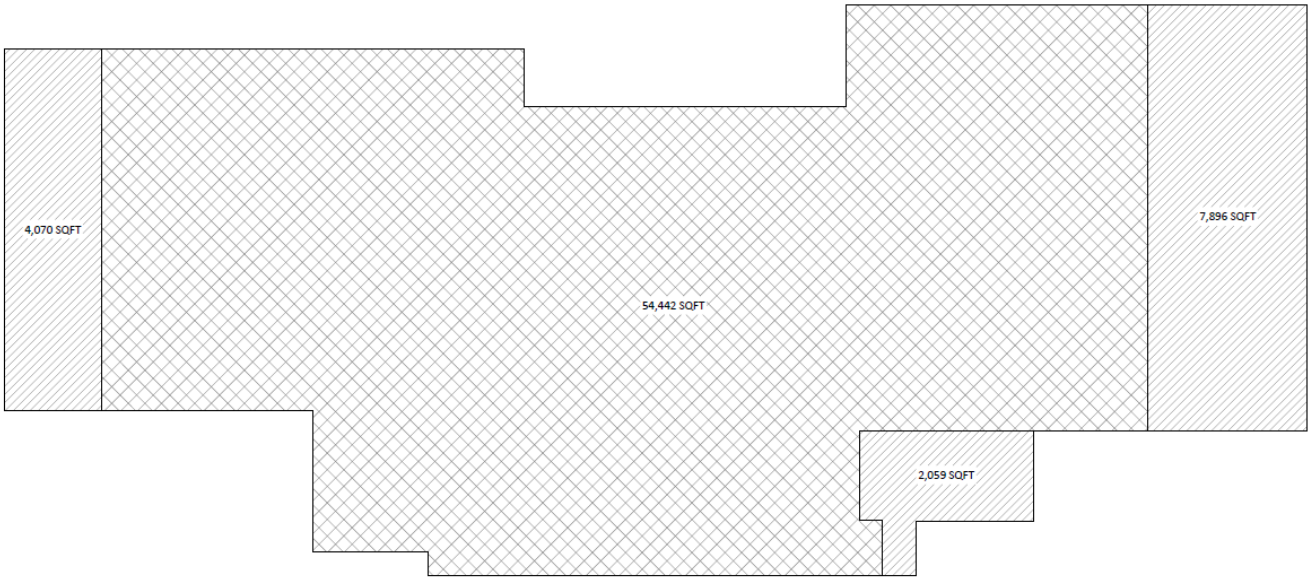
NORTHFIELD, MINNESOTA
WATER TREATMENT FACILITY
OPTION NO. 1
BUILDING LAYOUT

SHEET
B1

Option 1 Potential Floor Plan



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NORTHFIELD, MINNESOTA
WATER TREATMENT FACILITY
OPTION NO. 1
BUILDING SQFT

SHEET B2

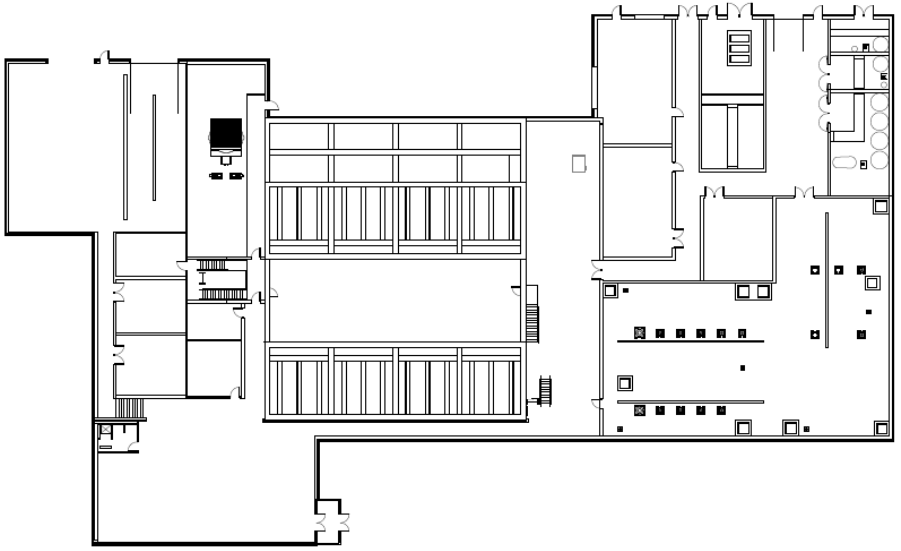
Option 1, (54,442 Sq Ft)

Option 1 Costs and Rates

- Estimated Project Costs – $58.10 – $60.47 million
- Additional Savings without Army Corps of Engineers Project – $1.67 million
- Total Project Savings – $3.04 – $5.41 million vs. bid
- Estimated Rate Savings $1.52 – $2.71
  - With water tower rate savings reduced

Option 2 – No Softening without staff relocating

- Remove Reverse Osmosis
- Remove All Garage except JetVac stall, and small garage for 2 additional staff vehicles and small work area
- Remove staff space except small area for 2-3 staff members and critical areas for plant operation (office, laboratory, SCADA, restroom, breakroom)
- Building reduced by approximately 28,815 sq. ft.
- Utilities staff and equipment stays in current locations except JetVac goes to WTP
- Garage and Office space to be future capital cost



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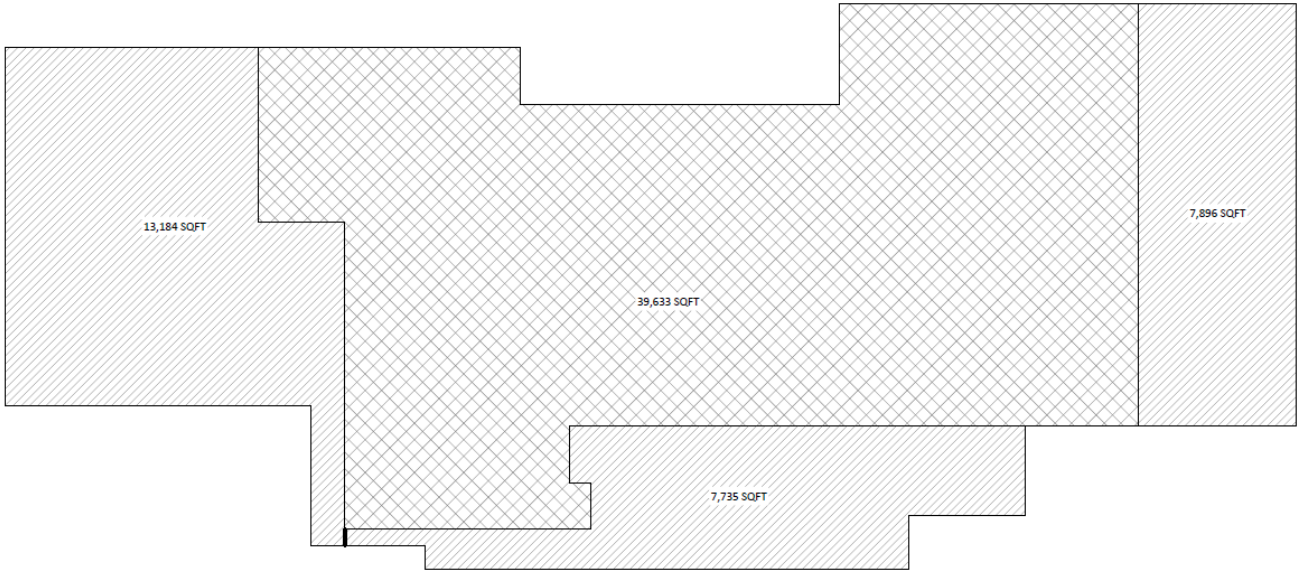
NORTHFIELD, MINNESOTA
WATER TREATMENT FACILITY
OPTION NO. 2
BUILDING LAYOUT

SHEET
C1

Option 2 Potential Floor Plan



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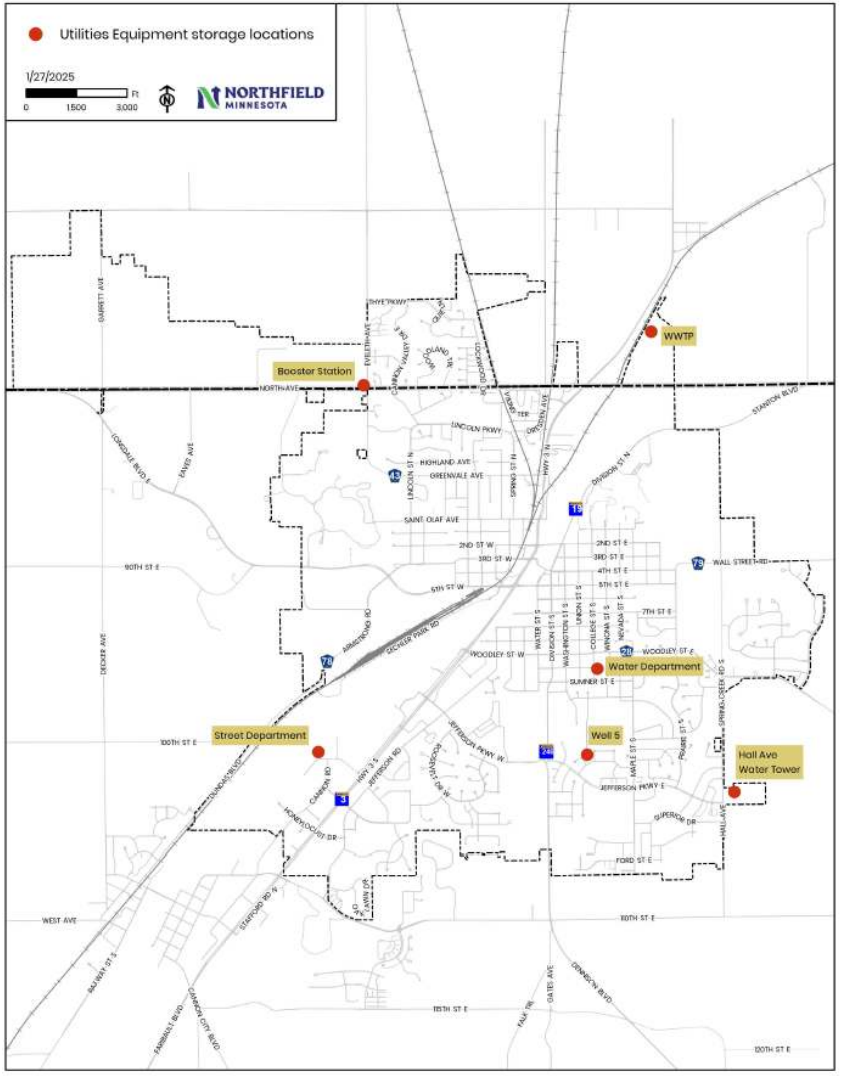
NORTHFIELD, MINNESOTA
WATER TREATMENT FACILITY
OPTION NO. 2
BUILDING SQFT

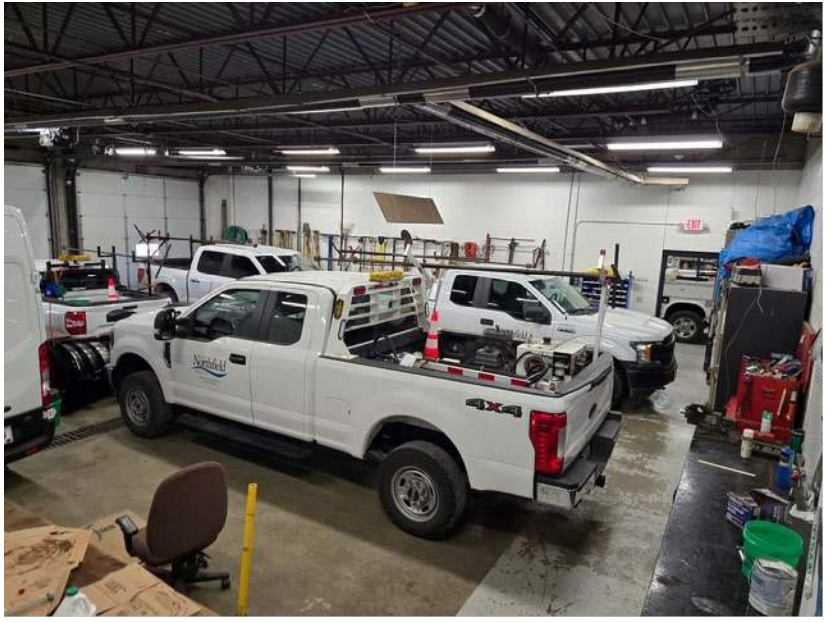
SHEET C2

Option 2, (39,633 Sq Ft)



Map Showing Locations of Utilities Equipment

Pictures of Garage



Pictures of Garage

Pictures of “Locker Room”

Option 2 Costs and Rates

- Estimated Project Costs – $52.50 – $55.24 million
- Additional Savings without Army Corps of Engineers Project – $1.67 million
- Total Project Savings – $8.27 – $11.01 million vs. bid
- Estimated Rate Savings $4.14 – $5.51
  - With water tower rate savings reduced

Option 3 – No Water Plant

- Do not construct a water treatment plant at this point
- Construct roads and raw watermains for future water treatment plant
- Future costs of water treatment plant continue to rise 0.4% to 1.0% per month
- Estimated rates in 2030 for Option 3 is $37.09, residents would home soften total cost $56.09

Option 3 Future Costs and Rates

- Construction of Jefferson Parkway, new North/South road, raw watermains, and trunk sanitary sewer estimated at $9.18 million
- Use federal grant for water tower

MDH Manganese Water Guidance

Infants

100 µg/L

3 of 5 Northfield wells above 100 ug/L

Everyone Else

300 µg/L

Manganese in Northfield's Tap Water

- City conducted testing in 5 locations throughout 2020 at taps where people drank water
  - No documentation on what type of treatment, if any, took place prior to the tap
- 4 of 5 sites had tests over 100 ug/L.

Water Pictures

Raw Water (Untreated prior to oxidation of iron and manganese)

Water Pictures

Water in Fire Truck Tank

Fire Hydrant

Water Pictures

Fire Hydrant Water Sample

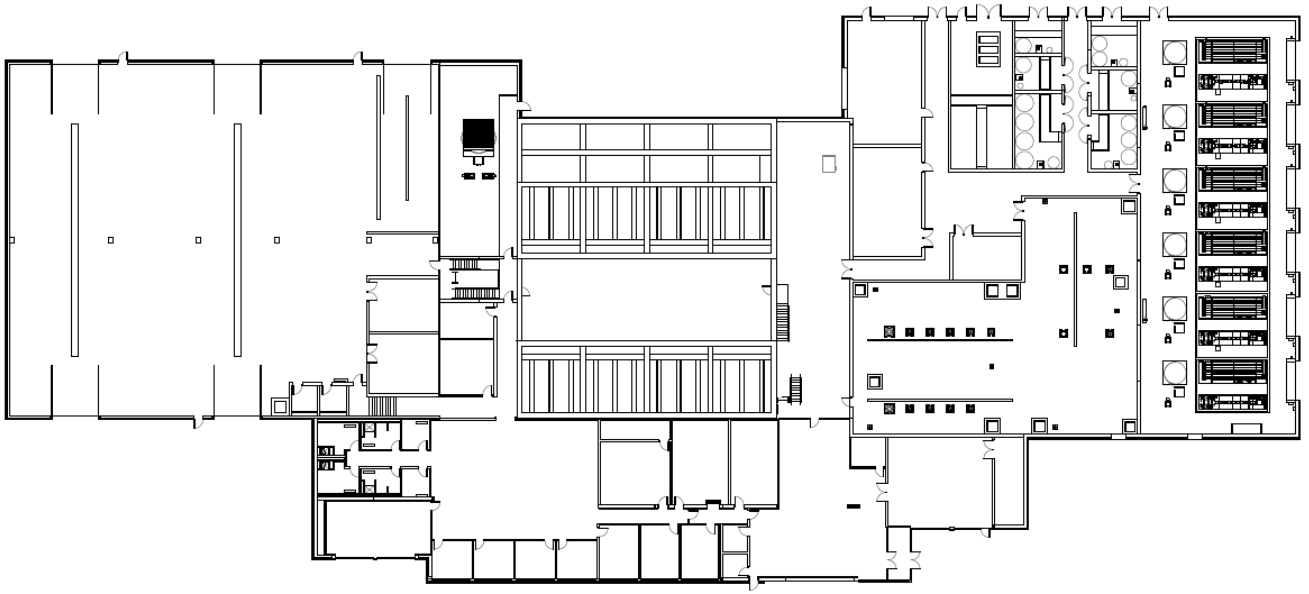
Fire Hydrant Water Sample

Option 4 – Water Treatment Plant as bid

- Rescind previous motion to reject bid, and award project to Magney Construction
- Contractor willing to extend acceptance period by 30 days to 90 days

Option 4 Costs and Rates

- $61,840,000 bid project
- 2030 Rates $69.24



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NORTHFIELD, MINNESOTA
WATER TREATMENT FACILITY
ORIGINAL BID
BUILDING LAYOUT

SHEET
A1

Bid Floor Plan

Summary of Options

- Lowest Cost to Residents and Businesses 2030
  - Option 3 – Average resident water bill $56.09
    - This assumes no water plant is built prior to 2030
  - Option 4 – Average resident water bill $69.24
    - This is the current bid project
  - Option 2 – Average resident water bill $82.73-$84.10
    - Remove softening and residents home soften water, utility staff relocates to new site
  - Option 1 – Average resident water bill $85.53 - $86.72
    - Remove softening and residents home soften water, utility staff doesn't relocate

Note: Options 1, 2 and 3 costs add $19 per month for home softening costs.

Steps Moving Forward

- Staff to bring Motion to City Council for direction on February 18 or March 4 depending on direction from Council

Questions and Discussion

Thank you

Other Items to Consider Continued

- No bonding bill approved in 2024
- There are 224 Drinking Water Revolving Funds Projects valued at $1.1 billion in Minnesota
- There are 112 Clean Water Revolving Funds Projects valued at $1.8 billion in Minnesota
- Typically 3 – 4 contractors are doing all water/wastewater work in Minnesota