
# Drinking Water State Revolving Fund (DWSRF) Project Planning Document Public Meeting

May 9, 2023

# Agenda

1. DWSRF Overview
2. Project Need
3. Alternatives
4. Recommended Improvements
5. Anticipated Project Costs & User Costs
6. Social & Environmental Impacts & Mitigation
7. Questions

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# DWSRF OVERVIEW

# Overview of the DWSRF

Jointly administered loan program:

- Michigan Department of Environment, Great Lakes, and Energy (EGLE)
- Michigan Municipal Bond Authority

Funding for drinking water infrastructure projects to resolve current needs

- 20-year loan with low interest rates; FY24 interest rate has not been published by EGLE

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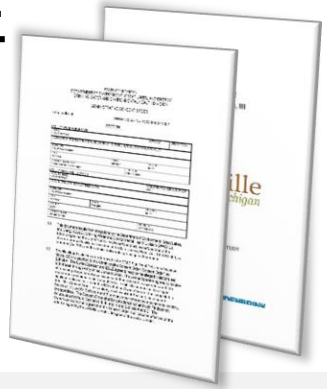
# STATEMENT OF NEED

# Need for the Project (1 of 3)

- Project Needs identified in recent technical assessments
- 2021 Water Reliability Study
- Current Draft Feasibility Study as required by Administrative Consent Order from EGLE
  - Underground Storage Reservoir
  - Pressure Districts



# Need for the Project (2 of 3)

- Abandon Underground Reservoir / Pump House
  - Significant deficiencies
  - Noncompliance with current regulations
- Establish Proper Pressure Districts
  - Existing PRVs inoperable
  - Improper isolation of districts
  - Variable pressures and flows

# Need for the Project (3 of 3)

- Water Main Replacement / Looping
  - Water Mains 90-130 years old
  - Undersized with a history of breaks
- Lead and galvanized service line replacement
  - Required per the Michigan Lead and Copper Rules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# ALTERNATIVES

# DWSRF Project Alternatives

- No Action
- Optimization
- Regionalization
- Principal Alternatives
  - Open-cut excavation or directional drilling

# DWSRF Project Alternatives: No Action

- Continued noncompliance and potential legal implications
- Increased future costs and compounding damage
- Risk of Water Quality Impacts
- Inadequate system pressures and flow
- Increased probability of water main breaks

*Not Viable*

# DWSRF Project Alternatives: Optimization

- Optimization of the existing system does not address the City's needs
- Existing water mains are undersized and cannot be rehabilitated through lining
- Underground storage reservoir is not required for proper system operations

*Not Viable*

# DWSRF Project Alternatives: Regionalization

- Northville is currently served by a regional supplier
- Connection to a new water supplier would not address the City's needs

*Not Viable*

# DWSRF Project Alternatives: Principal

| Category | Alternative 1 | Alternative 2 |
|---|---|---|
| Underground Reservoir | Abandon and fill the existing underground reservoir; construct a new booster station | |
| Pressure Districts | Construct three pressure reducing valves | |
| Water Main | Open-cut excavation of the water main | Directional drilling of the water main |
| Lead Services | Lead service line replacement | |

*Viable*

# Alternative Criteria: Water Main Improvements

Project costs and location of:

- Existing water, sanitary, and storm mains and connection points
- Planned road improvements
- Cultural and historical sites
- Natural features and protected species' habitats
- Contamination sites

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# RECOMMENDED IMPROVEMENTS

# Proposed Improvements: Overall System

**Project Improvements**

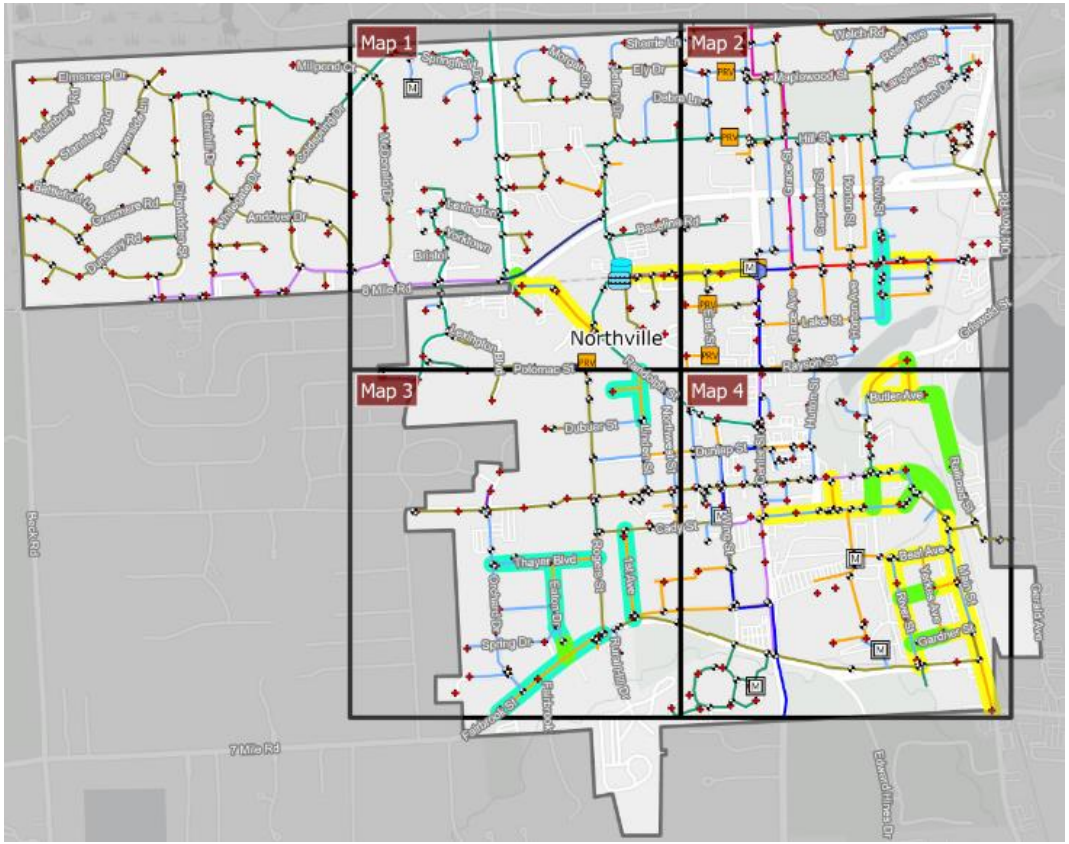
- Proposed Water Main
- Water Main Replacement
- Water Main Replacement with Lead Services

**Water Main**

Diameter (in)

- Unknown
- 3
- 4
- 6
- 8
- 10
- 12
- 16
- 20
- 24
- 30

- Elevated Storage Tank
- Proposed Pressure Relief Valve
- Proposed Booster Station
- Underground Storage Reservoir
- Water Meter
- Water Valve
- Hydrant



# Area 1

**Project Improvements**

- Proposed Water Main
- Water Main Replacement
- Water Main Replacement with Lead Services

**Water Main**

Diameter (in)

- Unknown
- 3
- 4
- 6
- 8
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- 16
- 20
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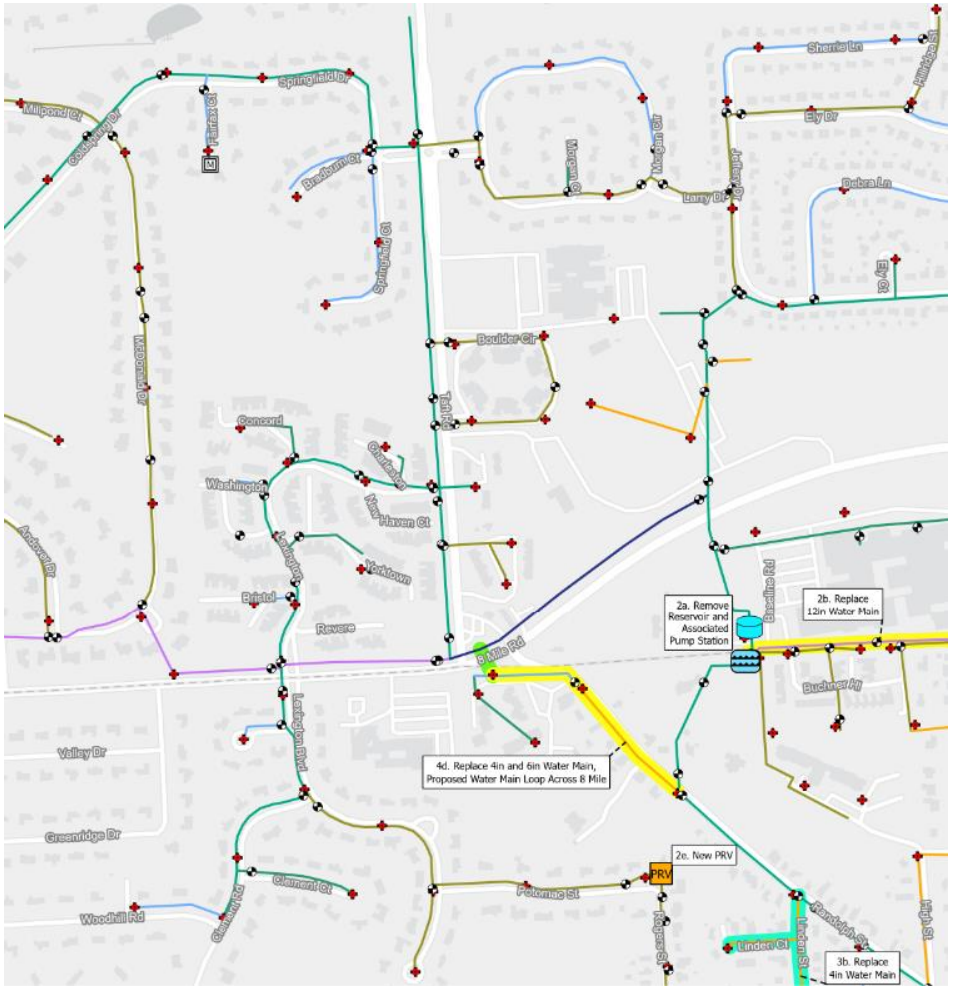

# Area 2

**Project Improvements**

- Proposed Water Main
- Water Main Replacement
- Water Main Replacement with Lead Services

**Water Main**

Diameter (in)

- Unknown
- 3
- 4
- 6
- 8
- 10
- 12
- 16
- 20
- 24
- 30

- Elevated Storage Tank
- Proposed Pressure Relief Valve
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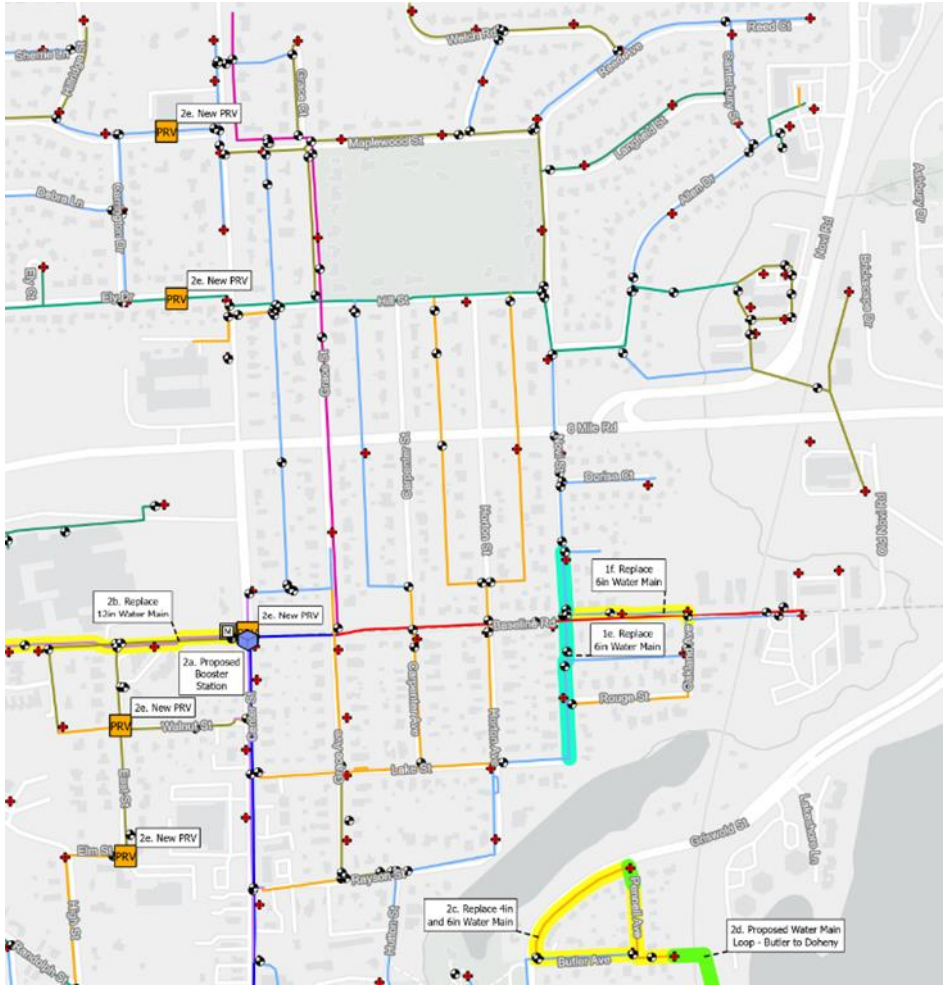
- Water Valve
- Hydrant



# Area 3

**Project Improvements**

- Proposed Water Main
- Water Main Replacement
- Water Main Replacement with Lead Services

**Water Main**

Diameter (in)

- Unknown
- 3
- 4
- 6
- 8
- 10
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- 16
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- Elevated Storage Tank
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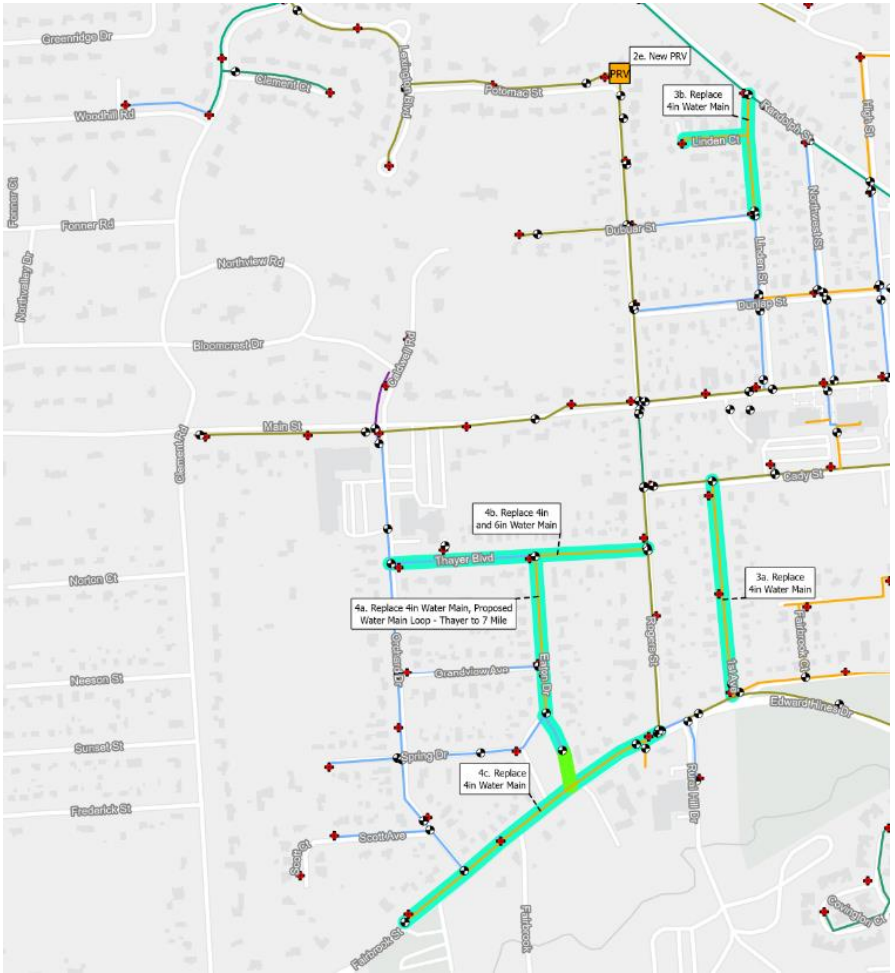

# Area 4

**Project Improvements**

- Proposed Water Main
- Water Main Replacement
- Water Main Replacement with Lead Services

**Water Main**

Diameter (in)

- Unknown
- 3
- 4
- 6
- 8
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- Elevated Storage Tank
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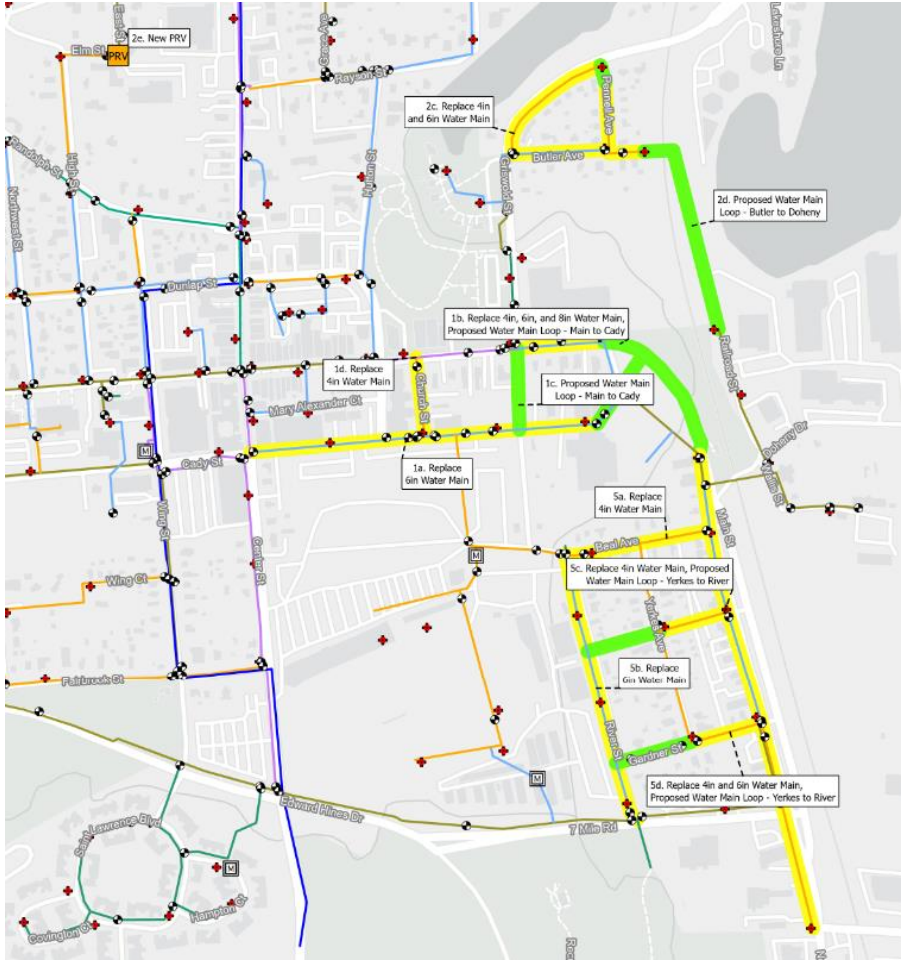

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# ANTICIPATED PROJECT COSTS & USER COSTS

# DWSRF Project Cost Opinion and User Costs

| Project | Cost | Annual Debt Retirement* | Annual Increased Cost per Customer | Bi-monthly Increased Cost per Customer |
|---|---|---|---|---|
| Abandon Underground Reservoir and New Booster Station | $3,650,000 | $239,700 | $93.49 | $15.58 |
| Pressure Reducing Valves | $1,900,000 | $124,800 | $48.67 | $8.11 |
| Water Main Improvements | $18,290,000 | $1,201,100 | $468.45 | $78.07 |
| Lead Service Line Replacements | $340,000 | $22,300 | $8.70 | $1.45 |
| **Total** | **$24,180,000** | **$1,587,900** | **$619.31** | **$103.22** |

**assumes 2.75% APR over 20-years*

# DWSRF Project Payment Plan

Low-interest loans paid through increases in user cost rates:

| | |
|---|---|
| Current Estimated Bi-monthly Cost per Customer (water only): | $165.36 |
| Estimated Bi-monthly Rate Increase per Customer (water only): | $103.22 |
| Estimated Bi-monthly Water Cost per Customer with Rate Increase: | **$268.58** |
| Percent Increase: | **62.4%** |

Note: Post-application grant funding, increasing user base and additional funding sources could reduce user rate increases

# DWSRF Project Cost Opinion and User Costs

Projects will be broken down over 5 phases to distribute financial burden over several years:

| Category | Cost |
|---|---|
| Phase 1 Cost | $6,980,000 |
| Phase 2 Cost | $8,540,000 |
| Phase 3 Cost | $1,730,000 |
| Phase 4 Cost | $3,980,000 |
| Phase 5 Cost | $2,610,000 |
| Lead Service Line Replacement Cost | $340,000 |
| Total Project Cost | $24,180,000 |

# Overall Benefits

- Increased compliance with regulatory agencies
- Reduced risk to public health and water quality
- Improved system reliability
- Decreased water loss
- Reduced O&M costs /service disruptions due to water main breaks
- Reduced impacts from compounding defects and continued system neglect

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# SOCIAL & ENVIRONMENTAL IMPACTS & MITIGATION

# Social and Environmental Impacts

- Moderate traffic disruption and noise/dust generation
- Short-term service disruption

| Category | Environmental Impact | | | | | |
|---|---|---|---|---|---|---|
| | Air | Wetland | Floodplain | Water/Land Resources | Historical /Tribal Resources | Endangered Flora and Fauna |
| **Proposed Alternatives** | Low/Standard Construction | Low/Standard Construction | Low/Standard Construction | Low/Standard Construction | Low/Standard Construction | Low/Standard Construction |

# Social and Environmental Impact Mitigation (1/3)

- Traffic disruption, noise and dust from construction are minor and temporary
- Sound attenuated backup generator to reduce impacts to nearby residents
- Service disruption limited to brief periods during changeover to new water mains

# Social and Environmental Impact Mitigation (2/3)

- Directional drill to minimize impacts to sensitive features
- Surface grade restored to original condition
- Proper sedimentation and erosion control
- Soil borings during design to identify contaminated groundwater and soils; mitigation measures as needed.
- Proper pipe material and technique will be used to prevent contaminated drinking water.
- Necessary permits will be acquired to perform work

# Social and Environmental Impact Mitigation (3/3)

- Trees will be replaced, and vegetation will be restored to its original condition
- Tree clearing will be scheduled from October 1st to March 31st to minimized impacts to federally protected species
- Impact to materials, land, and energy will be minimized by selection of qualified contractors

# Questions and Answers

*Please state name and home address for the record.*