

**Grand Ledge City Council Resolution #29 of 2022**

**A Resolution to Adopt a Final Project Plan for Water System Improvements and Designate an Authorized Project Representative.**

A resolution adopted by the Grand Ledge City Council, at a regular meeting held on Monday, 23 May 2022, in the Gymnasium, City Hall, 310 Greenwood St., Grand Ledge MI 48837, in compliance with the Open Meetings Act, as amended.

**Whereas**, the City of Grand Ledge, Michigan (“City”) is a municipal corporation organized under the provisions of the Home Rule City Act, Public Act 279 of 1909, as amended, and is governed by the provisions of the Grand Ledge City Charter adopted 07 August 2018, as amended (“Charter”); and

**Whereas**, the City recognizes the need to make improvements to its existing water treatment and distribution system; and

**Whereas**, the City authorized Fishbeck, Inc., to prepare a Project Plan, that recommends the construction of a new Iron Removal Plant, new water main along Green Street, and new supply wells;

**Whereas**, said Project Plan was presented at a public hearing held on 09 May 2022 and all public comments have been considered and addressed;

**Now, Therefore, It Is Resolved:**

1. The City a Final Project Plan for Water System Improvements and agrees to implement the selected alternative for the construction of a new Iron Removal Plant, new water main along Green Street, and new supply wells.
2. The City designates the City Manager, a position currently held by Adam Smith, as the authorized representative for all activities associated with the project referenced above, including the submittal of said Project Plan as the first step in applying to the State of Michigan for a Drinking Water State Revolving Fund Loan to assist in the implementation of the selected alternative.

**Motion by** Gillespie

**Second by** Jancek

**Ayes:** Gillespie, Jancek, MacDowell, Mulder, Sowle, Willems

**Nays:** None

**Absent:** Lantz

Approved:

*Thomas J. Sowle, Jr.*



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Thomas J. Sowle, Jr., Mayor

I, Gregory L. Newman, Grand Ledge City Clerk, certify this is Resolution #29 of 2022, adopted by the Grand Ledge City Council at a regular meeting held on Monday, 23 May 2022; in the Gymnasium, City Hall, 310 Greenwood St., Grand Ledge MI 48837, in compliance with the Open Meetings Act, as amended.

*Gregory L. Newman*



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Gregory L. Newman, City Clerk

# City of Grand Ledge Water Treatment Plant, Distribution System, and Raw Water Supply Improvements

DWSRF Project Plan Public Hearing



# Public Hearing Contents

- Description of the water quality and capacity problems to be addressed by the projects and the principal alternatives that were considered
- Description of the recommended alternative
  - Capital Costs
  - Cost breakdown by project components
- Discussion of project financing and costs to users
  - Proposed method of project financing and estimated monthly debt retirement
  - Proposed annual, quarterly, or monthly charge to the typical residential customer
  - Any special fees that will be assessed
- Description of the anticipated social and environmental impacts associated with the recommended alternative and the measures that will be taken to mitigate adverse impacts
- In the event no one from the public attends the hearing (a reporter would be considered a member of the public, as would members of the applicant's governing body), the public hearing may be opened and closed without a formal presentation of the project plan. However, a transcript or recording must still be submitted with the final project plan documenting this action

# Agenda

- SRF Background & Description
- Distribution System Overview
- Treatment Plant Overview
- Raw Water Supply Overview
- Water Quality Problems Addressed
- Alternatives Considered
- Principal Alternatives
- Monetary Evaluation
- Social and Environmental Impacts Evaluation
- Next Steps



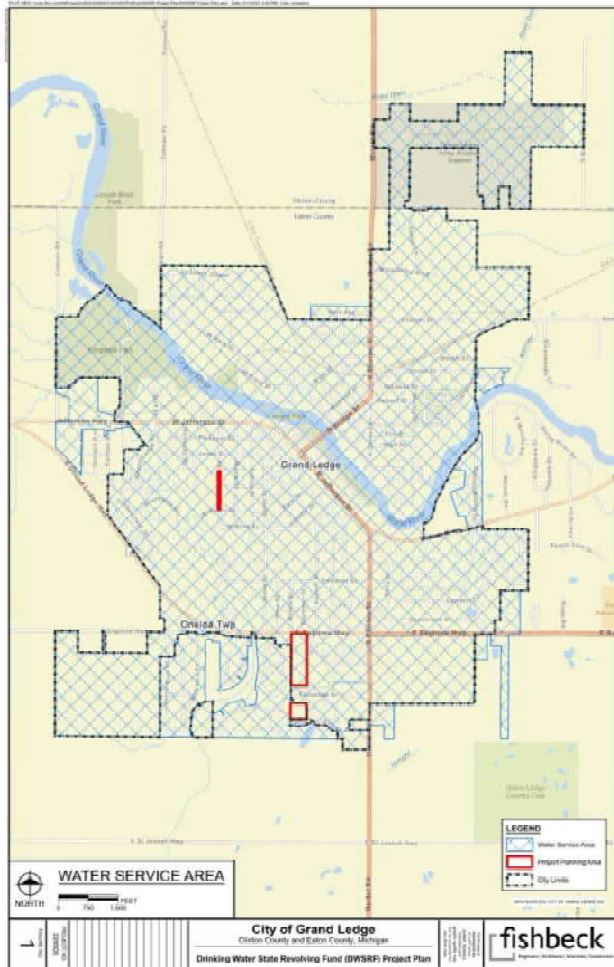
*Existing Iron Removal Plant Site*

# Drinking Water State Revolving Fund (DWSRF)

- Came from 1996 amendments to the Safe Drinking Water Act
- Administered by the Michigan Department of Environment, Great Lakes, and Energy (EGLE)
- Aimed to address water quality needs of communities.
- Provides low-interest funding to assist in studies & improvements to drinking water systems.



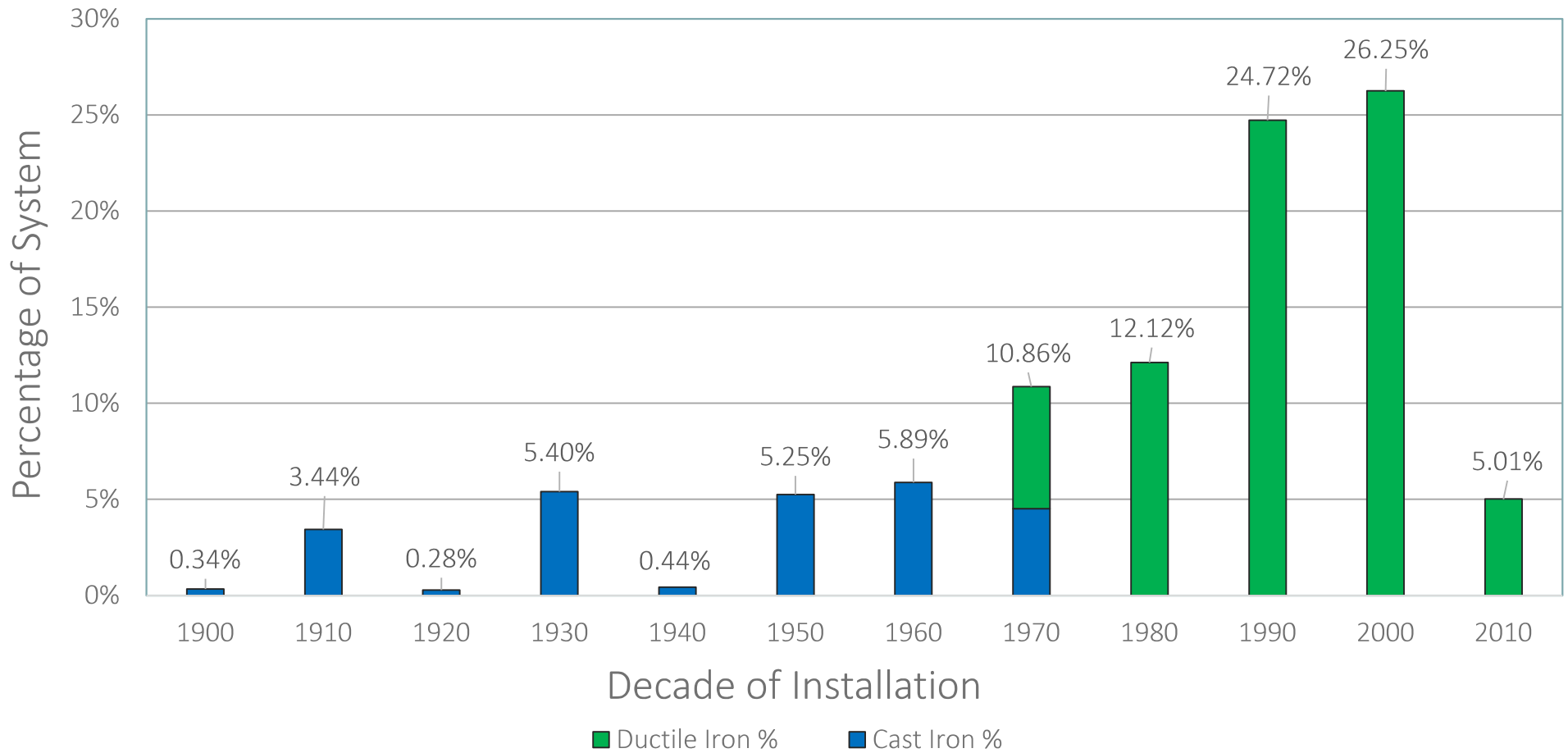
MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY



## Distribution System Overview

- System mainly consists of Ductile Iron and Cast Iron.
- Feeds City and parts of Oneida Township.
- City has been proactive in water main replacement but regular replacement is needed.

## Percentage of System by Installation Decade



# Water Treatment Plant Overview

- Existing Treatment Processes

- Aeralater

- Combines Aeration, Detention and Filtration in one unit

- Chemical Feed Systems

- Chlorine gas for disinfection
    - Fluoride for dental health
    - Phosphate for corrosion control

- Clearwell for finished water storage

- High service pumps convey water from clearwell to the distribution system



*Diagram of Aeralater Unit*



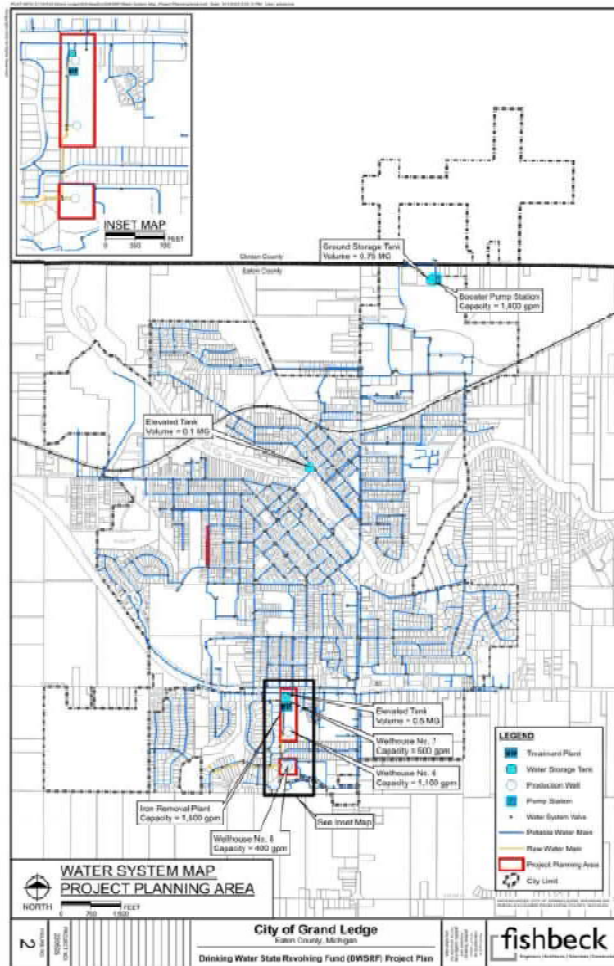
*Interior of Wellhouse No. 6*

## Raw Water Supply Overview

- Four existing wells
  - Well No. 2 (Standby well)
  - Well No. 6
  - Well No. 7
  - Well No. 8 (Limited Capacity)
- Development of wells to meet future capacity is ongoing

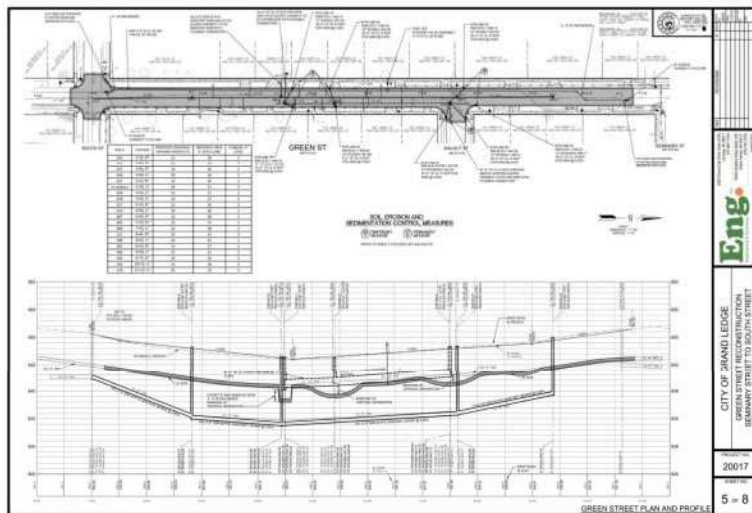
# Need for Project – Distribution System

- Parts of City distribution system over 100 years old
- Regular replacement is needed to keep the system in good condition
- Older water main can cause hydraulic and water quality issues.



Distribution System Map

# Distribution System Improvements



fishbeck  
City of Grand Ledge  
Grand Ledge, Michigan  
Project No. 20017  
4

- Water main replacement on Green Street from Seminary Street to South Street
- Replace 1974 6-inch water main with new 8-inch water main
- Efficiency in replacing sanitary main, water main, storm and street

## Need for Project - WTP

- Available Capacity of Current WTP
  - Designed to treat 2.30 MGD
  - One filter in Aeralater is no longer operational, reducing capacity to 1.73 MGD
- Aging Infrastructure – Aeralater was leaking and not operating well
- Current WTP not set up to treat radium
- Addition of radium treatment pushed by State regulators
- A new plant would allow for potential future addition of softening

# Alternatives Considered

- **Alternative 1 – No Action**
  - Does not address need for project; not a principal alternative.
- **Alternative 2 – Optimization of Existing Facilities**
  - Existing facilities are beyond useful life and at risk of failure.
- **Alternative 3 - Regional Alternative**
  - This was looked at as part of separate study. Capital cost was excessive.
- **Alternative 4 – Construction of New WTP**
  - New iron removal plant with initial capacity of 2.85 MGD, radium removal, backwash equalization basin, controls upgrades at all remote sites

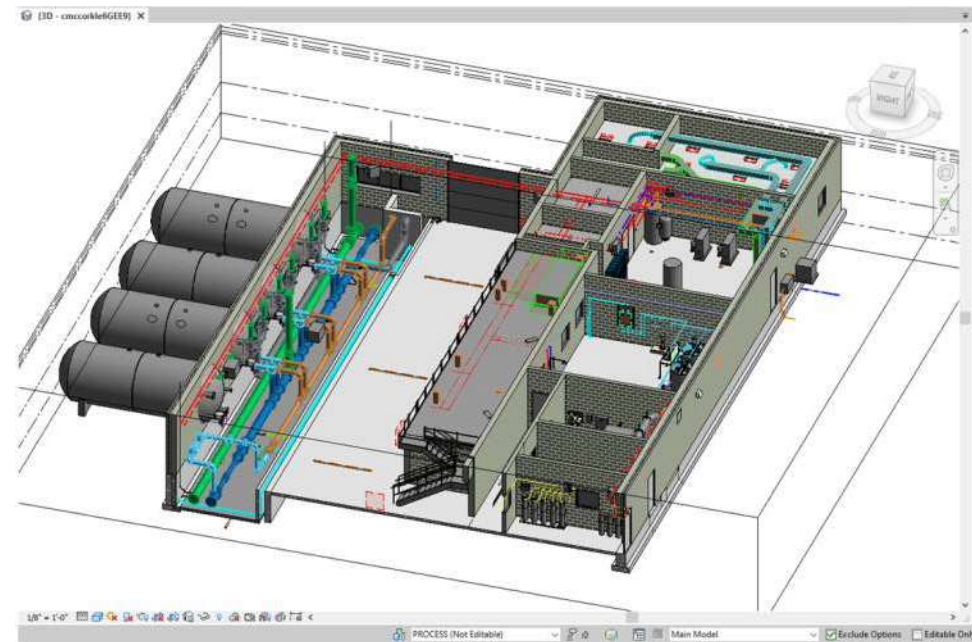
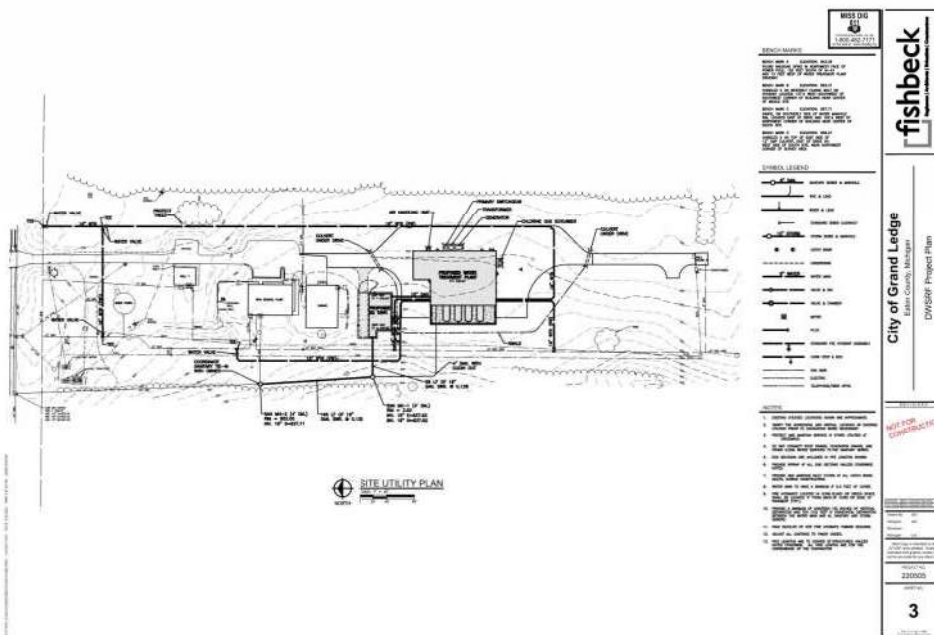
| Treatment Alternative  | Net Present Value* |
|--|--------------------|
| Iron Removal (with allowance for future softening expansion) | \$12,215,000       |
| RO Softening   | \$33,798,000       |
| IX Softening   | \$25,088,000       |
| Lime Softening   | \$33,031,000       |
| LBWL Supply Alt. 1   | \$49,139,000       |
| LBWL Supply Alt. 2   | \$41,334,000       |
| LBWL Supply Alt. 3   | \$56,717,000       |

\* - Net present values were calculated as part of three 2020 studies. Provided for comparison purposes only.

Other Considerations for Alternative – Monetary Evaluation

# Selected WTP Alternative

- Alternative 4 – Construction of a new WTP



# Raw Water Supply System

- Available Capacity in Current System
  - Can provide 2.88 MGD but only 1.30 MGD with largest well out of service to the WTP
  - Well Nos. 9 & 10 are located to the southwest of the existing WTP site and are not yet equipped with pumps
  - Locate alternative well sites
- Well No. 2 can only pump to the distribution system not the WTP
- Well No. 7 has somewhat high iron levels
- Well No. 8 is limited in capacity by state regulators

# Alternatives Considered

- **Alternative 1 – No Action**
  - Does not address need for project; not a principal alternative.
- **Alternative 2 – Optimization of Existing Facilities**
  - Existing facilities are limited in capacity. More wells are needed.
- **Alternative 3 - Regional Alternative**
  - This was looked at as part of separate study. Capital cost was excessive.
- **Alternative 4 – Develop Well Nos. 9 & 10**
  - This would be easiest and most inexpensive option but is contingent on acceptance from state regulators.
- **Alternative 5 – Develop Alternative Well Sites**
  - No specific site(s) have yet been identified.

# Selected Raw Water Supply Alternative

- Alternative 4 – Development of Well Nos. 9 & 10



# Social and Environmental Impacts Evaluation

## Social Impacts

- Short term construction related impacts
  - Construction activities in park space managed to maintain access
- Traffic impacts
- User costs
- Temporary construction job

## Environmental Impacts

- Will adhere to local, state, and federal regulations for work within floodplains
  - Mitigated by soil erosion and sedimentation control measures
- Distribution system water quality
  - Remove radium
- Energy and chemical use
- Positive impact to operations and overall water system reliability
- No impact to threatened or endangered species

# Recommended Alternatives Estimated Cost

- Capital Cost = \$19,957,000
- Finance through SRF
  - 30-year loan – 2.125%
- Costs for Average Water User: \$19.00 per month based on 51,666 REU equivalents
  - \$17.54 per month for debt repayment
  - \$1.46 per month for OM&R

| Category                             | 2023 Opinion of Probable Construction Cost |
|--------------------------------------|--|
| Distribution System Alternative      |  |
| Green Street Water Main Replacement* | \$198,000                                  |
| Water Treatment Plant Alternative    |  |
| New Water Treatment Plant            | \$14,957,000                               |
| Raw Water Supply System Alternative  |  |
| Develop Well Nos. 9 & 10             | \$4,802,000                                |
| Total Estimated Costs                |  |
| Total Capital Cost                   | \$19,957,000                               |

\* Includes Water Main Replacement and Restoration only

# Next Steps

- Project Plan
  - Resolution Adopting a Final Project Plan and Designating an Authorized Project Representative May 23<sup>rd</sup>, 2022 City Council Meeting
  - Submit Final Project Plan by July 1, 2022
- Develop Milestone Schedule with EGLE project manager
- Final Design: March 2022 – July 2022
- Part I Application to MFA – Financial Review
- Part II Application – SRF program requirements
- Bid Project October 2022 according to Milestone Schedule
  - Part III Application – Bid information and estimated loan disbursement schedule
- Construction: January 2023 – January 2025

# Thank You

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