

Grand Ledge City Council Resolution #28 of 2022

**A Resolution to Adopt a Final Project Plan for Wastewater 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 wastewater treatment and collection system or its existing NPS pollution control/stormwater treatment system; and

Whereas, the City authorized Fishbeck, Inc., to prepare a Project Plan, that recommends the construction of proposed improvements to the sanitary sewer collection system and the Wastewater Treatment Plant; and

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 formally adopts a Final Project Plan for Wastewater System Improvements and agrees to implement the selected alternative (Alternative No. 4).
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 revolving fund loan to assist in the implementation of the selected alternative.

Motion by Gillespie

Second by MacDowell

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

Nays: None

Absent: Lantz

Approved:

Thomas J. Sowle, Jr.



Thomas J. Sowle, Jr., Mayor

I, Gregory L. Newman, Grand Ledge City Clerk, certify this is Resolution #28 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.

Handwritten signature of Gregory L. Newman in blue ink.



Gregory L. Newman, City Clerk

City of Grand Ledge Wastewater Treatment Plant and Sanitary Sewer System Improvements

CWSRF Project Plan Public Hearing



Public Hearing Contents

- Description of the water quality problems to be addressed by the project 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
- Collection System Overview
- Treatment Plant Overview
- Water Quality Problems Addressed
- Alternatives Considered
- Principal Alternatives
- Monetary Evaluation
- Social and Environmental Impacts Evaluation
- Next Steps



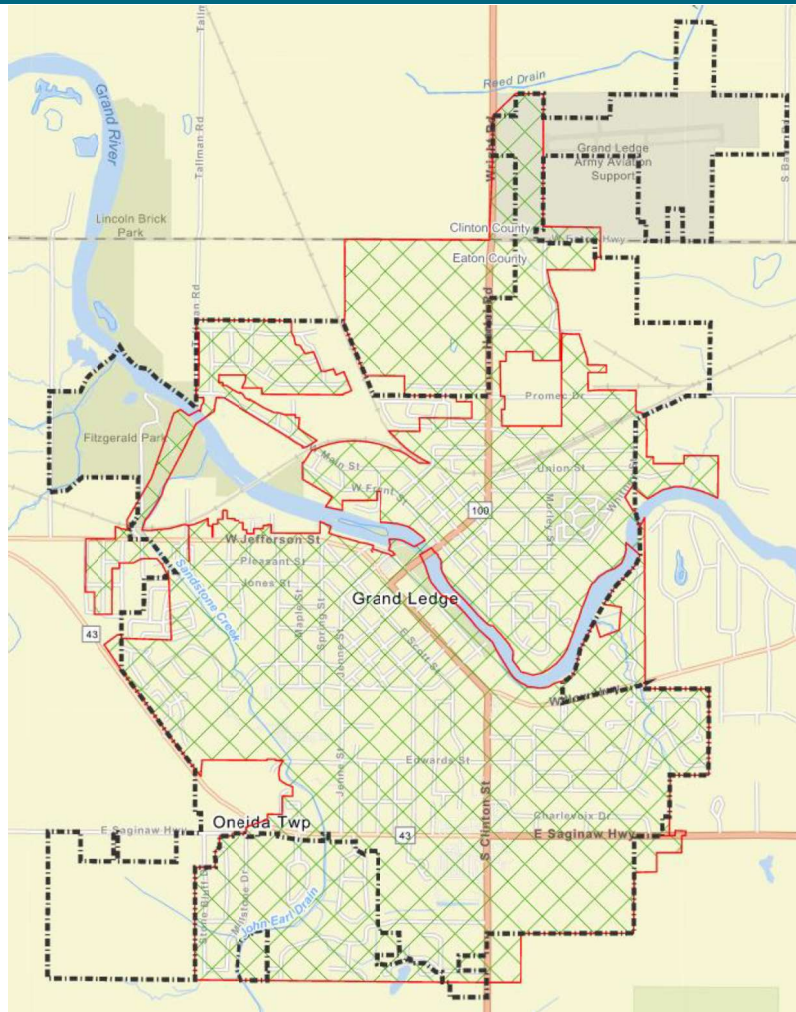
Existing Aeration Tanks

Clean Water State Revolving Fund (CWSRF)

- Came from 1987 amendments to the Clean 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 and wastewater systems.



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY



Sanitary Sewer Service Area

Collection System Overview

- Originally combined storm and sanitary sewer system
- Separated in 1991
- Persistent high flows associated with wet weather events
- West River Pump Station pumps a large portion of flow into an interceptor sewer to the WWTP



Aerial View of Existing WWTP

Wastewater Treatment Plant Overview

- **Treatment Processes**

- Retention Basin
- Mechanical Bar Screen
- Aerated Grit Removal
- Intermediate Pump Station
- Primary Clarification
- Aeration
- Secondary Clarification
- Chlorine Disinfection

- **Solids Handling**

- Lime stabilize biosolids from primary and secondary clarifiers
- Biosolids storage and liquid land application

Need for Project – Collection System

- History of overflows from the collection system
 - Russell Street Manhole
 - West River Pump Station (WRPS)
 - Interceptor Sewer to WWTP
- Violation Notice from EGLE received on March 11, 2021
- Need to convey the 25-year, 24-hour design storm to the WWTP without overflow

Need for Project - WWTP

- **Available Capacity of Existing WWTP**
 - Designed to treat 1.5 MGD
 - Exceeding biological treatment capacity
 - At ~73% of hydraulic capacity
 - Discharges from the retention treatment basin during wet weather events
 - WWTP capacity is a limiting factor for new residential, commercial, and industrial development
- **Aging Infrastructure – Mechanical equipment from 1975**
- **Ineffective Treatment – Grit removal**
- **Chemical Handling – Lime for solids stabilization and chlorine for disinfection**

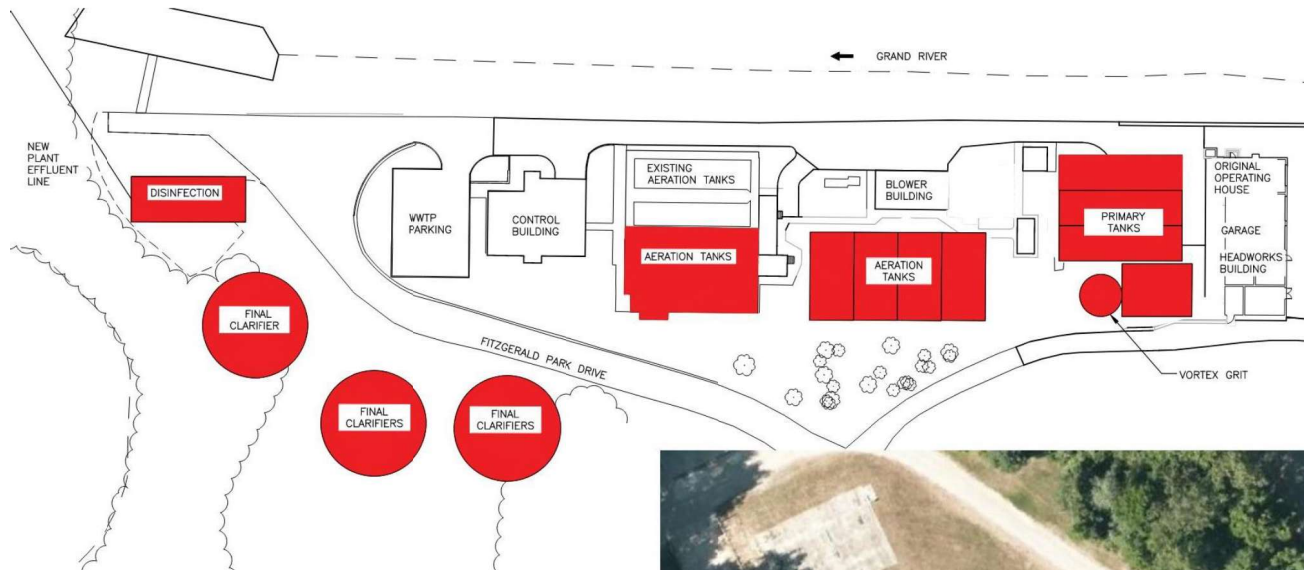
Alternatives Considered

- **Alternative 1 – No Action**
 - Does not address need for project; not a principal alternative.
- **Alternative 2 – Optimization of Existing Facilities: Expansion of Conventional Activated Sludge**
 - Principal alternative
- **Alternative 3 – Optimization of Existing Facilities: Conversion to Extended Aeration**
 - Principal alternative
- **Alternative 4 – Optimization of Existing Facilities: Conversion to Membrane Bioreactors (MBR)**
 - Principal alternative
- **Alternative 5 – Regional Alternative: Connection to Existing Regional WWTP**
 - Capacity limitations, cost of service, loss of autonomy; not a principal alternative.
- **Alternative 6 – Construction of New Satellite WWTP**
 - Collection system modification, operational difficulties, restrictive additional NPDES permit; not a principal alternative.

Principal Alternatives

- Alternative 2 – Optimization of Existing Facilities: Expansion of Conventional Activated Sludge
- Alternative 3 – Optimization of Existing Facilities: Conversion to Extended Aeration
- Alternative 4 – Optimization of Existing Facilities: Conversion to MBR

Alternative 2 – Conventional Activated Sludge



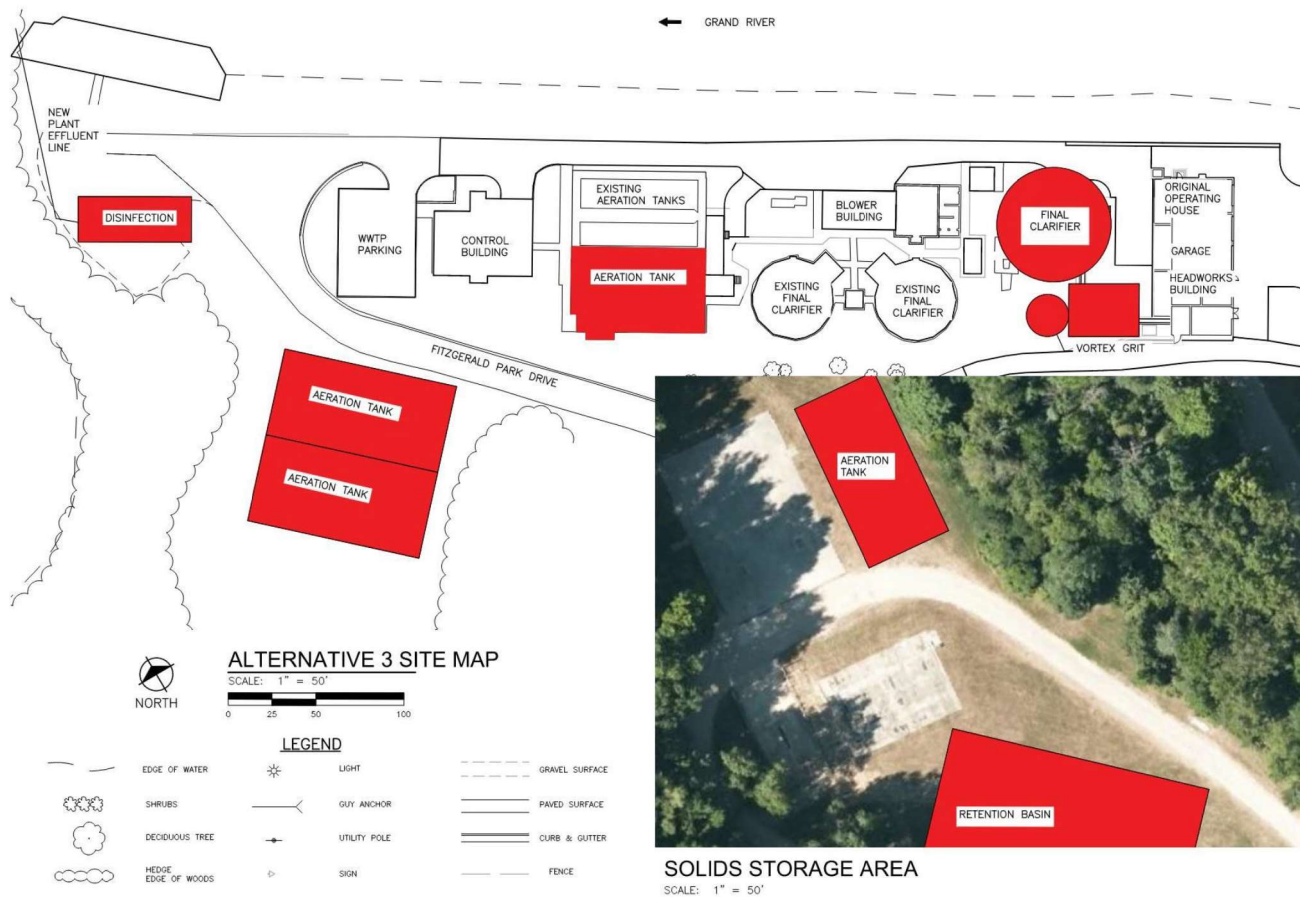
ALTERNATIVE 2 SITE MAP
SCALE: 1" = 50'

LEGEND					
	EDGE OF WATER		LIGHT		GRAVEL SURFACE
	SHRUBS		GUY ANCHOR		PAVED SURFACE
	DECIDUOUS TREE		UTILITY POLE		CURB & GUTTER
	HEDGE EDGE OF WOODS		SIGN		FENCE

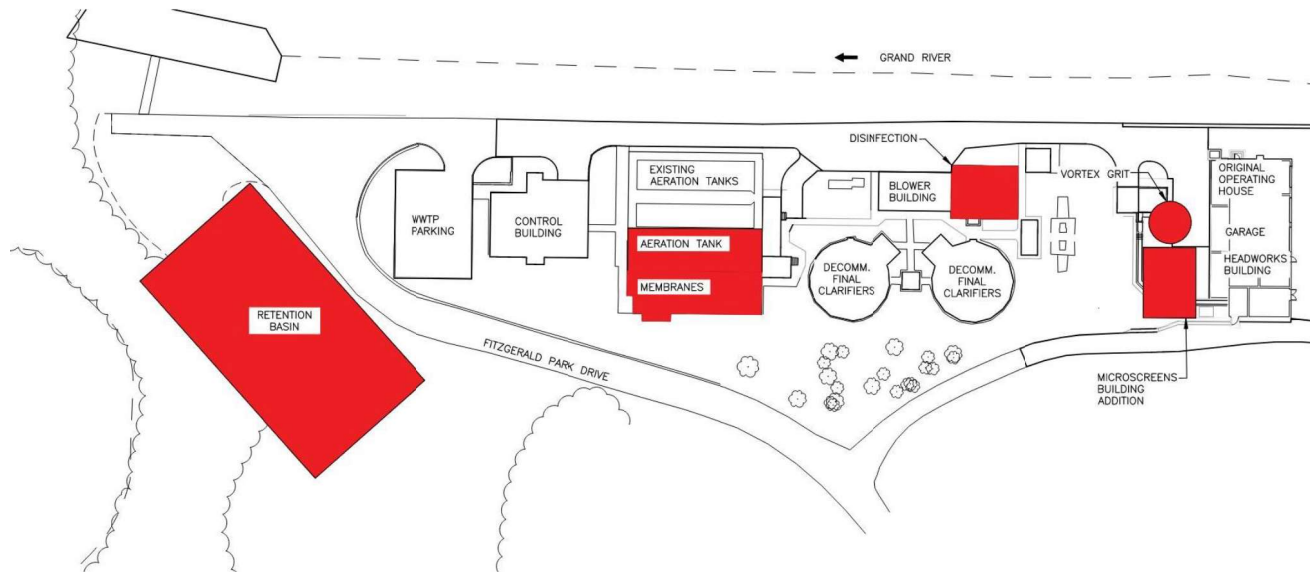


SOLIDS STORAGE AREA
SCALE: 1" = 50'

Alternative 3 – Extended Aeration



Alternative 4 – MBR



ALTERNATIVE 4 SITE MAP
 SCALE: 1" = 50'

LEGEND					
	EDGE OF WATER		LIGHT		GRAVEL SURFACE
	SHRUBS		GUY ANCHOR		PAVED SURFACE
	DECIDUOUS TREE		UTILITY POLE		CURB & GUTTER
	HEDGE EDGE OF WOODS		SIGN		FENCE

Sanitary Sewer System Improvements

- WRPS Wet Weather Pumps
- Forcemain from WRPS to EQ Basin at WWTP Site
- Gravity sewer replacement on Green Street from Seminary Street to South Street

	Alternative 2: Conventional Activated Sludge	Alternative 3: Extended Aeration	Alternative 4: MBR
Capital Cost	\$45,991,000	\$47,980,000	\$34,993,000
Annual OM&R Cost	\$897,507	\$1,021,995	\$1,117,049
Salvage Value	\$15,028,800	\$16,800,000	\$10,279,800
Present Worth of 20 Years of OM&R Cost	\$17,042,000	\$19,406,000	\$21,210,000
Present Worth of Salvage Value	\$13,602,009	\$15,205,057	\$9,303,866
20-Year Total Present Worth	\$49,350,991	\$52,180,943	\$46,899,134

Alternative 4 has the lowest capital cost and the lowest 20-year total present worth.

Principal Alternative – Monetary Evaluation

*Additional information available
in Appendix 6 of the Draft
Project Plan.*

Social and Environmental Impacts Evaluation

Social Impacts

- Short term construction related impacts
 - Construction activities managed to maintain access to adjacent park
- 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
- Land use
 - Prefer smaller footprint
- Effluent water quality
 - Improve water quality in Grand River
- Energy and chemical use
- Positive impact to operations and overall sewer system reliability
- No impact to threatened or endangered species

Recommended: Alternative 4 - MBR

- Capital Cost = \$34,993,000
- Finance through SRF
 - 30-year loan – 2.125%
- Costs for Average Sewer User: \$40.78 per month based on 48,834 Annual REU Equivalentents
 - \$32.52 per month for debt repayment
 - \$8.26 per month for OM&R

Category	2023 Opinion of Probable Construction Cost
Flow Retention	\$15,333,000
Preliminary Treatment	\$2,104,000
Primary Treatment	\$2,005,000
Biological Treatment	\$9,134,000
Final Clarification	\$280,000
Disinfection	1,515,000
Solids Handling	\$1,681,000
Sanitary Sewer System Improvements	\$2,941,000
Total Capital Cost	\$34,993,000

Next Steps

- **Project Plan**
 - Resolution Adopting a Final Project Plan and Designating an Authorized Project Representative during the May 23rd, 2022 City Council Meeting
 - Submit Final Project Plan by June 1, 2022
- **Develop Milestone Schedule with EGLE project manager**
- **Final Design: June 2022 – December 2022**
- **Part I Application to MFA – Financial Review**
- **Part II Application – SRF program requirements**
- **Bid Project according to Milestone Schedule**
 - Part III Application – Bid information and estimated loan disbursement schedule
- **Construction: May 2023 – January 2026**

Thank You

