

Village of Beulah

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Wastewater System Improvements Project

Presented by:
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Introduction

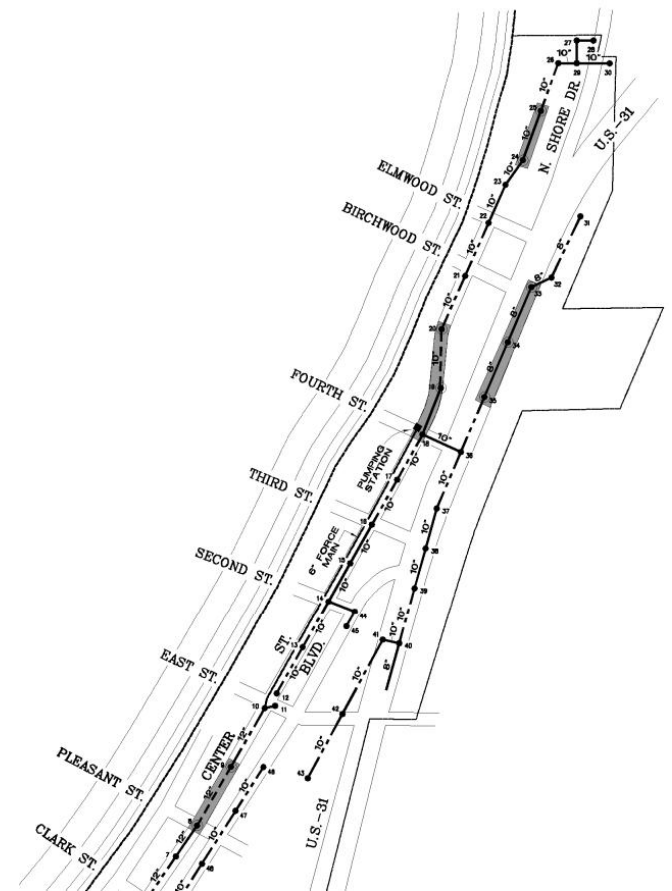
- Gosling Czubak Engineering and Sciences, Inc. – Village Engineer
- Application for funding through USDA Rural Development office
- Village has acquired a grant from EGLE

Need for the Project

- Aging Sanitary Sewer System
- Existing wastewater facility originally constructed in the 1960s
 - Imhoff tank
 - Outdated treatment system (settling with lagoons)
- Administrative Consent Order from EGLE addresses
 - Lack of maintenance and security of facility
 - Sanitary sewer overflows
 - Treatment of TIN & phosphorus not meeting permit

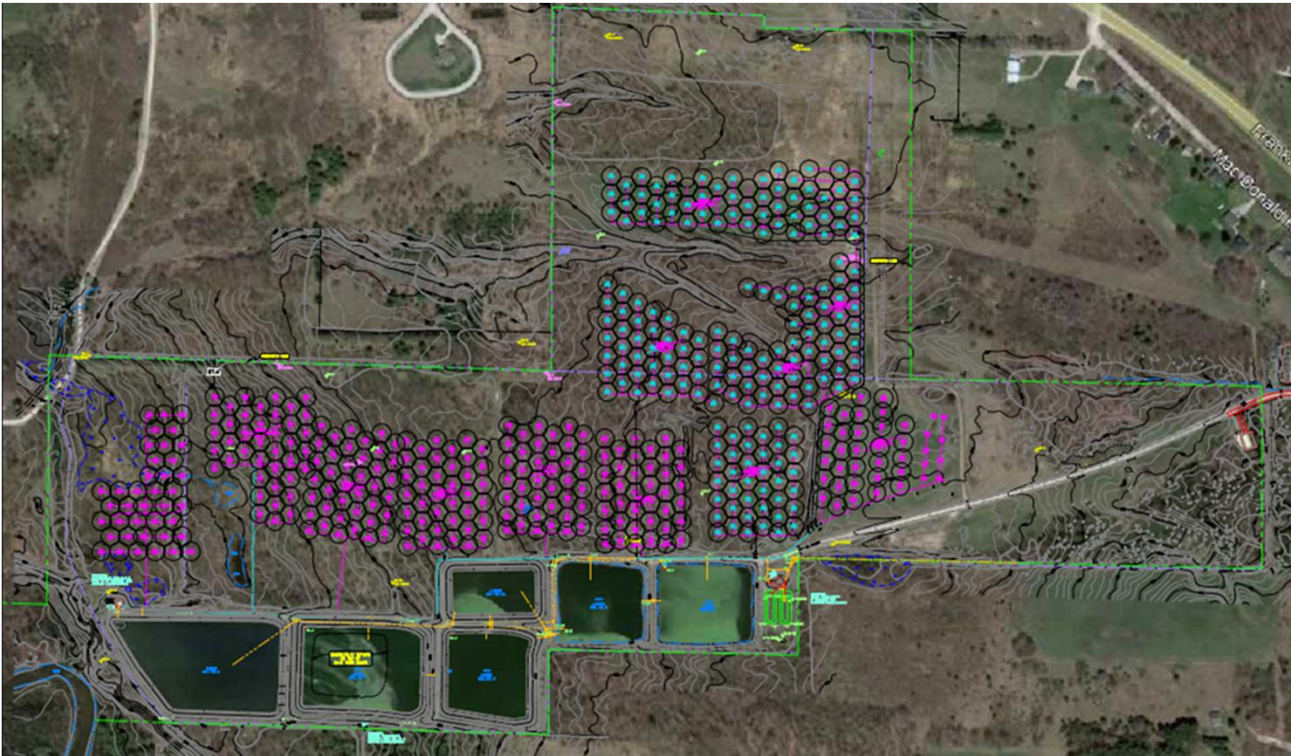
Sanitary Sewer Rehab/Replacement

- Location
 - N Michigan Ave (954 feet)
 - Center St (869 feet)
- Reduce ground water and stormwater inflow and infiltration into the sanitary sewer system



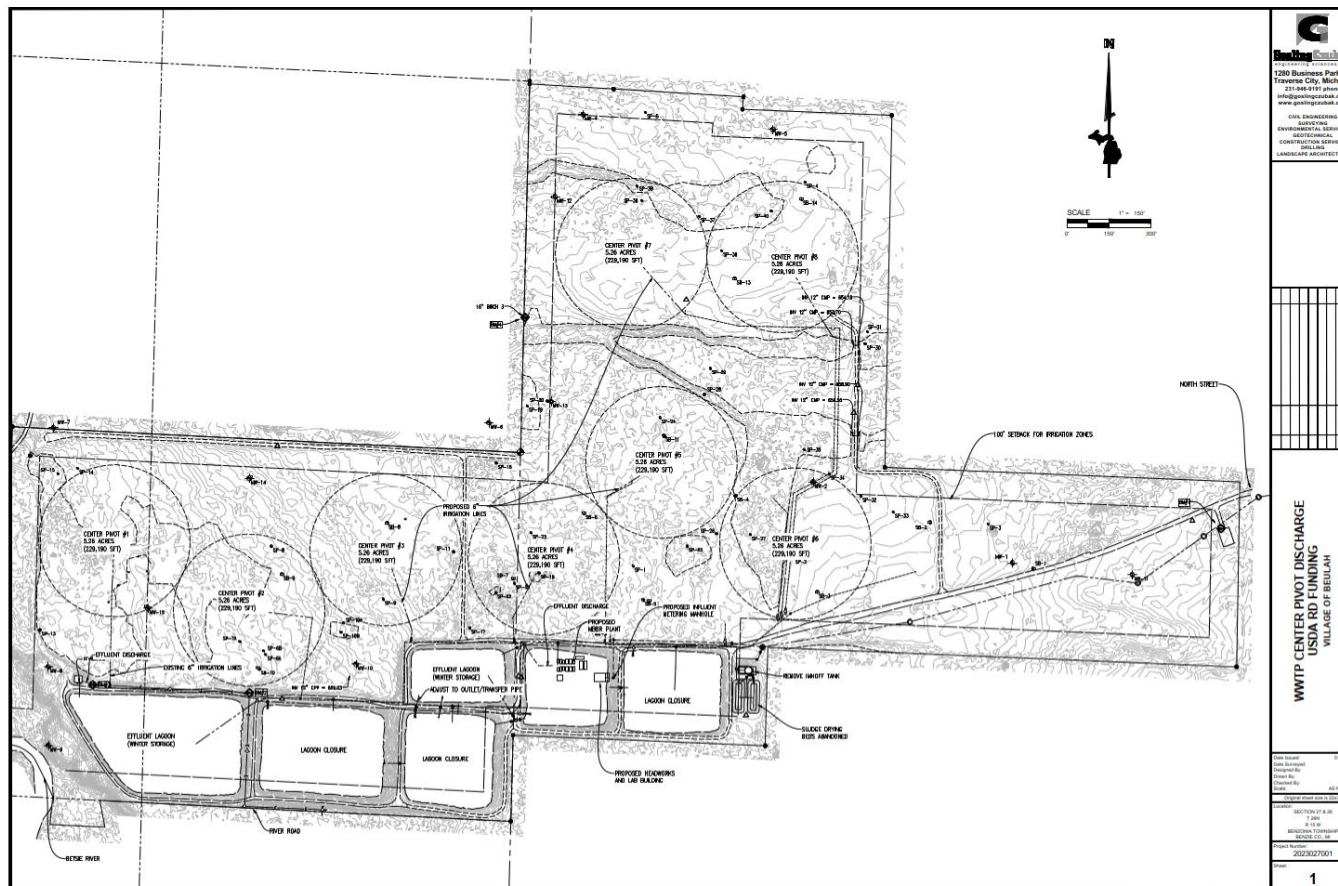
Existing Treatment System

- Imhoff tank, 6 lagoons, and 12 spray irrigation zones



Proposed Treatment System

- Headworks, mechanical treatment, 2 lagoons (winter storage), 8 center pivot irrigation zones (37 acres)



Treatment Alternatives

- No Action(not feasible)
- Mechanical Treatment with spray irrigation and sanitary sewer rehabilitation/replacement

Mechanical Treatment with Spray Irrigation

● Advantages

- Utilizes some of the existing facility
- Plant occupies small area of land
- Produces high quality effluent
- Winter storage
- Modular
- Reduces I&I

● Disadvantages

- Discharge occupies large land area
- Winter storage
- Increased operating cost
- Requires daily sludge handling
- Higher capital cost
- Increased maintenance cost

Environmental Impact

- Net impact is positive
 - Groundwater discharge permit will be met
 - High quality effluent
 - Eliminating water quality issues
 - Reduce inflow and infiltration
 - Reliable performance
- Negative impacts
 - Construction related (temporary)
 - Onsite chemical handling
 - Large area needed to provide spray irrigation (reuse of existing)

Funding

- USDA Rural Development
 - Possibility for grant dollars
 - 3.0%, 40 year term

Recommended Alternative & Cost

- Recommended Alternative Treatment Plant with spray irrigation and sewer improvements
- Estimated Project Cost \$12,125,000 +/-
 - USDA Bond \$10,125,000 +/-, pursuing
 - EGLE SPHRP Grant \$2,000,000, acquired

Questions?