



Wastewater Facility Improvements City of Lanesboro, Minnesota

Public Informational Meeting
April 30, 2019

Presented by:
Jake Pichelmann, P.E., Project Engineer
Brian Malm, P.E., City Engineer

Presentation Overview

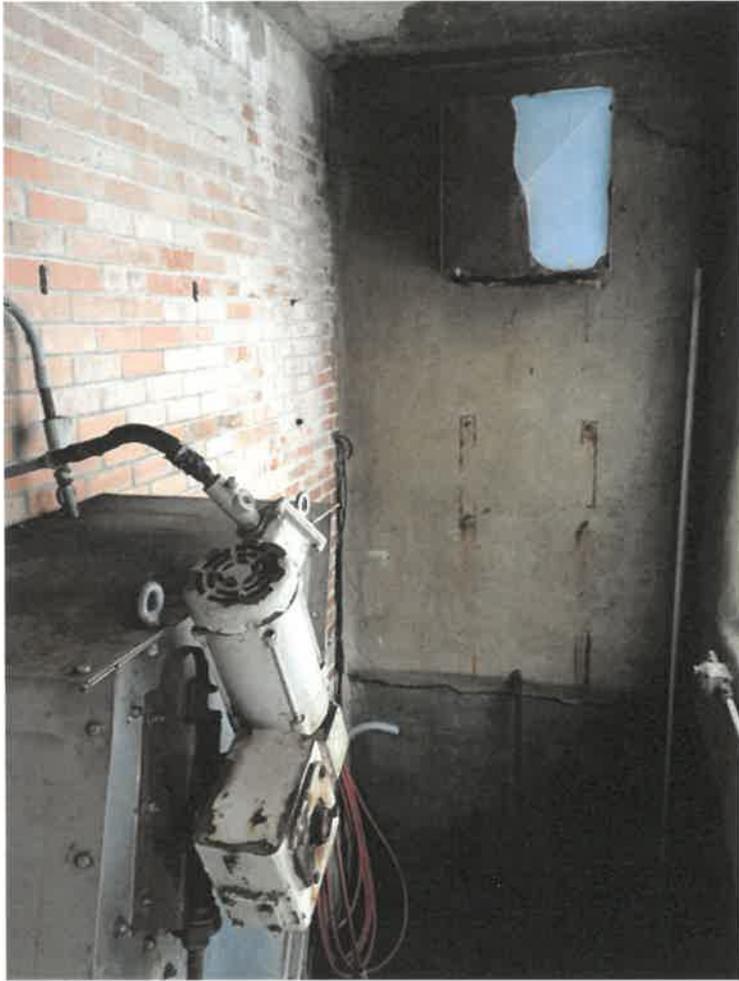
- Project Needs
- WWTF Design & Costs
- Site Selection & Aesthetics
- User Rates & Funding
- Schedule



Project Needs

- Existing Wastewater Treatment Facility
 - Constructed in 1938 (80 years old)
 - Repair/replacement (0-5 years):
 - Screening equipment & controls
 - Primary & secondary clarifier mechanisms
 - Trickling filter distribution arm / media
 - All pumping equipment
 - Additional process upgrades (5-10 years)
 - Estimated \$1.75 to 2.5 million
- Trickling filter process
 - Well beyond useful life / Outdated process
 - Cannot meet long-term treatment needs
 - Future nitrogen and phosphorus limits
- More cost-effective to build new plant







Timeline of Events

- *Fall 2014* – Began preliminary engineering work
- *December 2016* – Met onsite with Bolton & Menk to discuss improvements
- *March 2018* – Submitted Facility Plan to MPCA
 - *June 19, 2018* – LPU Public Hearing
 - *July 16, 2018* – MPCA Approval of Facility Plan
- *October 2018* – Began Design of Facility Improvements
 - *February 19, 2019* – LPU Meeting to discuss design
 - *March 28, 2019* – Submittal of P&S to MPCA
 - *April 30, 2019* – Public Informational Meeting



Wastewater Treatment Design

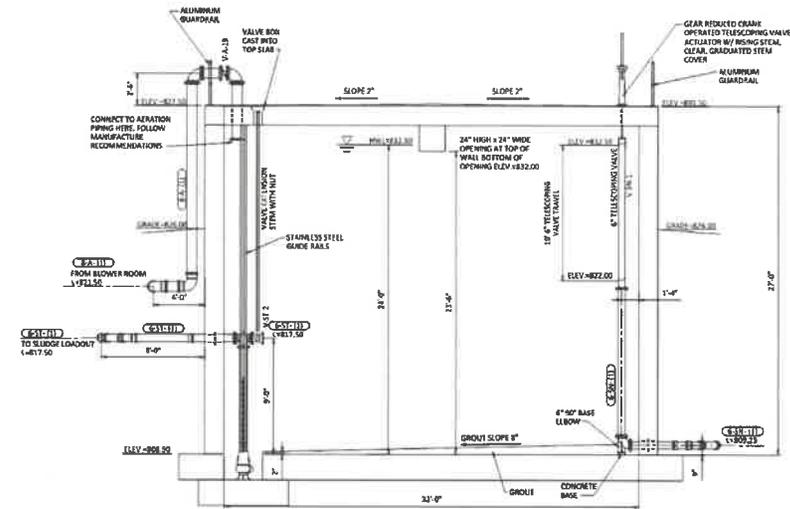
- Construct new Activated Sludge Facility
 - Influent Pumping Station / Grinding
 - Pretreatment (Screening & Grit Removal)
 - Biological Treatment
 - Extended Aeration Activated Sludge
 - Aeration / Mixing
 - Low odors
 - Rectangular Clarifiers
 - UV Disinfection
 - New Control Building
 - Electrical and SCADA Controls
- Future Accommodations for Nutrient Removal (Nitrogen & Phosphorus)

Table 1 – Opinion of Capital Cost - Construction of New Extended Aeration Facility (Without Nutrient Removal)	
Item	Cost
Mobilization, Bonds, Insurance	\$ 220,000
Grinder Pump Station	\$ 75,000
Influent Lift Station	\$ 80,000
Pretreatment Structure	\$ 330,000
Biological Treatment	\$ 425,000
Final Clarifiers & Covers	\$ 555,000
RAS/WAS/Scum Pumping	\$ 50,000
Control / UV Building	\$ 765,000
Sludge Storage Tank & Equipment	\$ 595,000
Process Piping and Valves	\$ 550,000
Site Work & Landscaping	\$ 435,000
Collection System Improvements	\$ 85,000
Process and Building Coating Systems	\$ 100,000
Plumbing and HVAC Systems	\$ 275,000
Electrical, Instrumentation, & Controls	\$ 950,000
Emergency Power Generation	\$ 60,000
Contingency (5%)	\$ 280,000
Subtotal	\$ 5,830,000
Construction Cost Range	\$5.50 to 6.50 Million
Legal, Engineering, and Admin. (20%)	\$ 1,080,000
Total Capital Cost Range	\$6.50 to 7.75 Million



Wastewater Treatment Design

- Biosolids Processing
 - Aerobic Digestion / Sludge Storage
 - Decant thickening
 - Option: sludge drying beds
- Class B Biosolids
 - Land applied to agricultural fields
 - Limited land availability
 - Contract hauling
- Eliminated Alternatives
 - Anaerobic digestion (biogas)
 - High capital and O&M costs
 - Not compatible with liquid process
 - Incineration (\$\$\$)



Alternate Site Evaluation

Site Selection Criteria Proposed Wastewater Treatment Facility						
Location	Adequate Space	Land Cost	Proximity to Existing Plant	Reuse Existing Outfall	Floodplain Issues	Out of Sight / Secluded
Sales Commission Site	+	+	+	+	-	-
Ballfield Site	+	+	-	-	-	+/-
Football Field Site	+	-	-	-	-	+/-
Along Highway 16	+	-	-	-	-	+/-

For each issue, a “+” indicates location is a positive, a “-” indicates location is a negative

- Sales Commission site is preferred site
- Ability to re-use existing outfall is a significant issue due to permitting
- Proximity to existing plant has a large impact on cost
- Proposed site located 300 feet north of existing WWTF
- New plant to produce *less odors* than existing WWTF



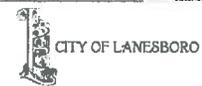


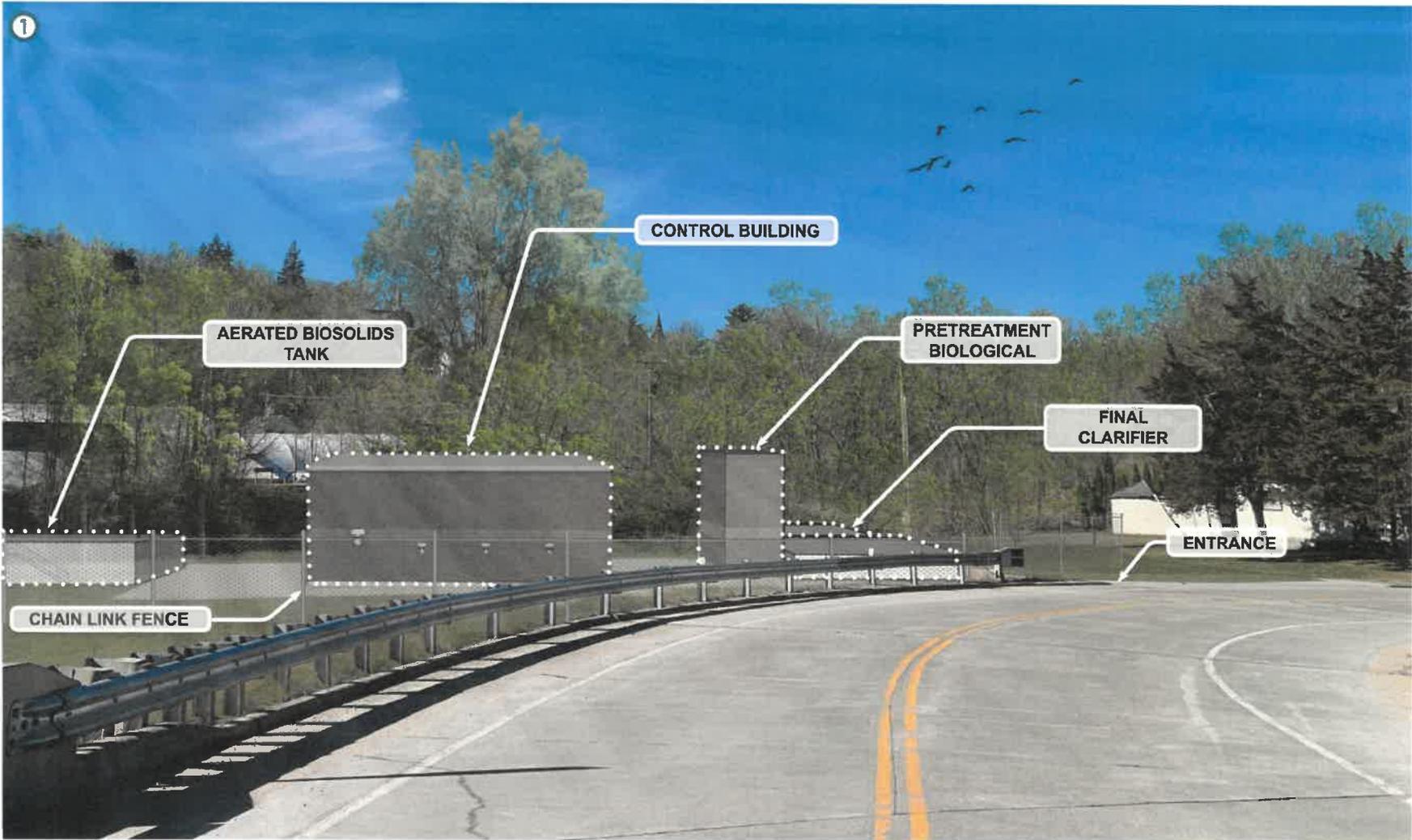
LANESBORO | WASTE WATER TREATMENT FACILITY **VIEWPOINT LOCATIONS**



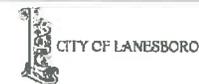


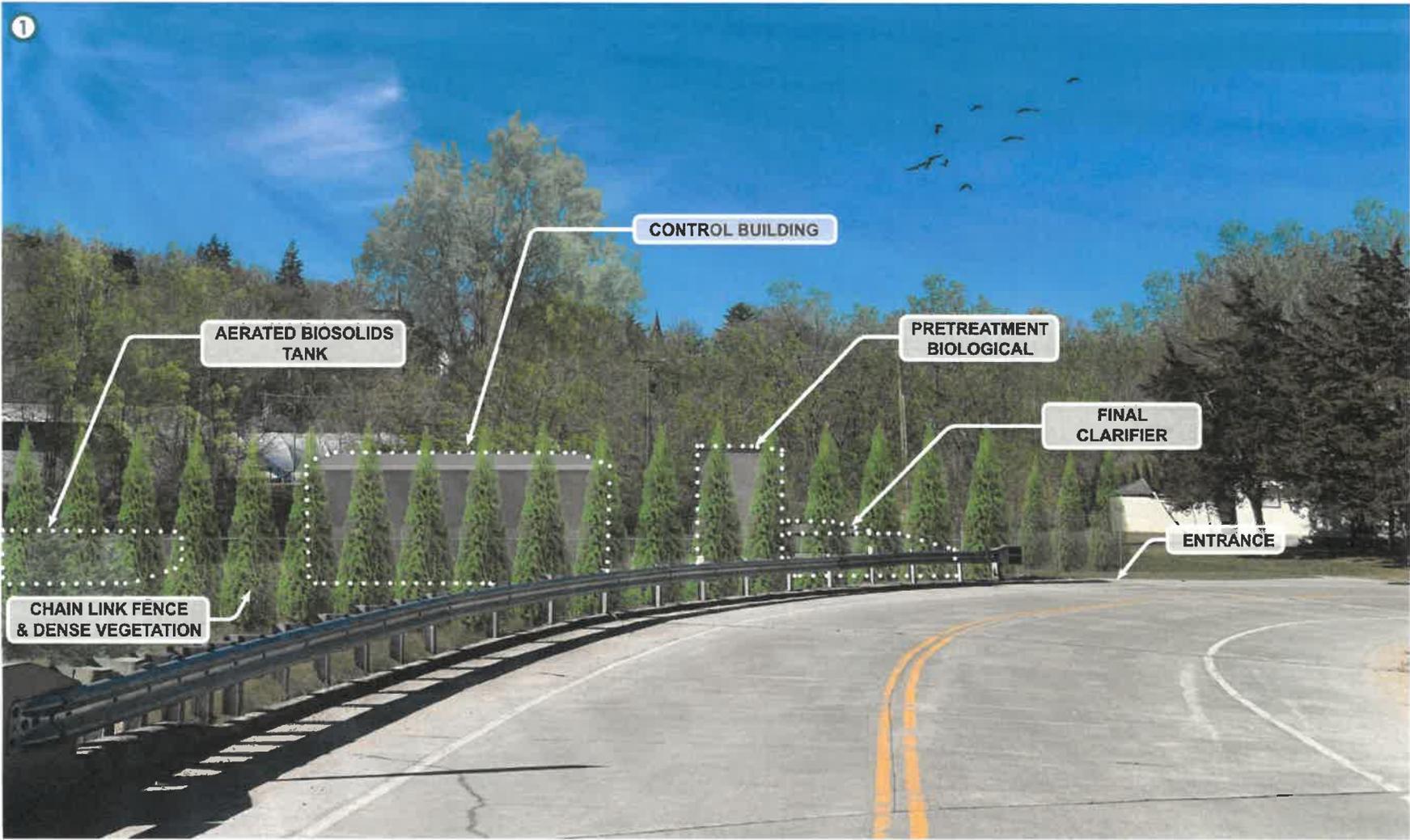
LANESBORO | WASTE WATER TREATMENT FACILITY EXISTING VIEW FROM BRIDGE





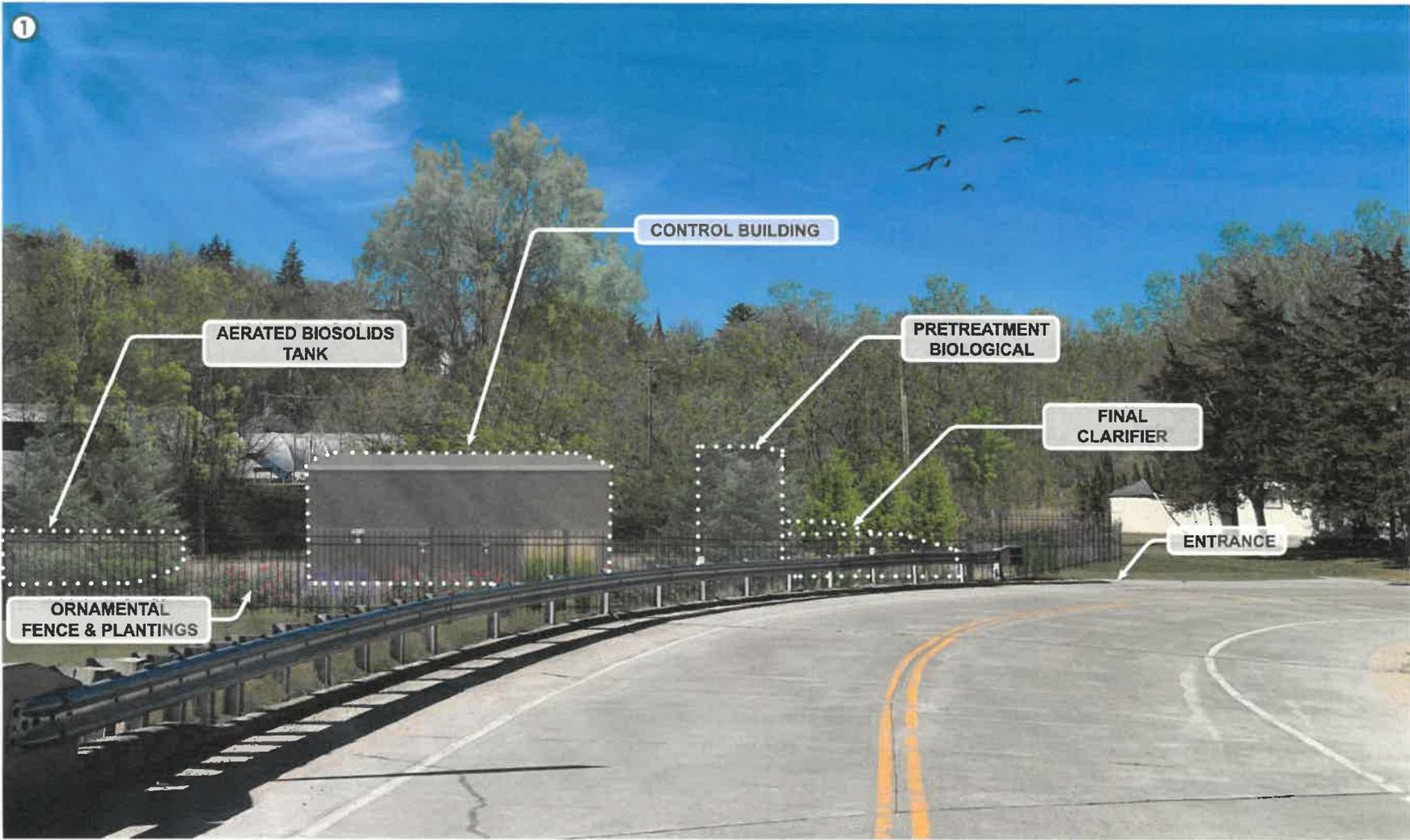
LANESBORO | WASTE WATER TREATMENT FACILITY CONCEPT VIEW FROM BRIDGE





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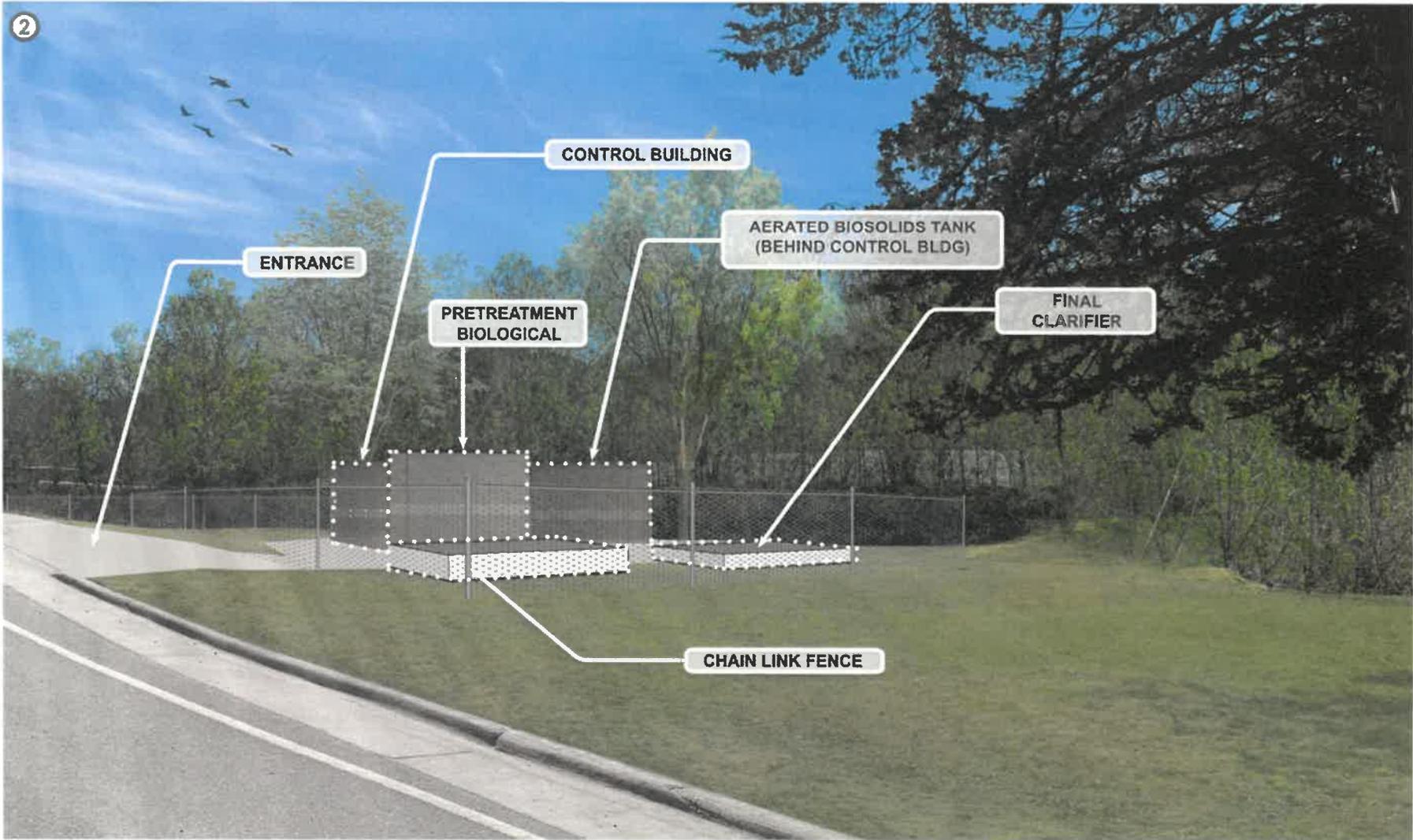
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LANESBORO | WASTE WATER TREATMENT FACILITY EXISTING VIEW FROM STREET





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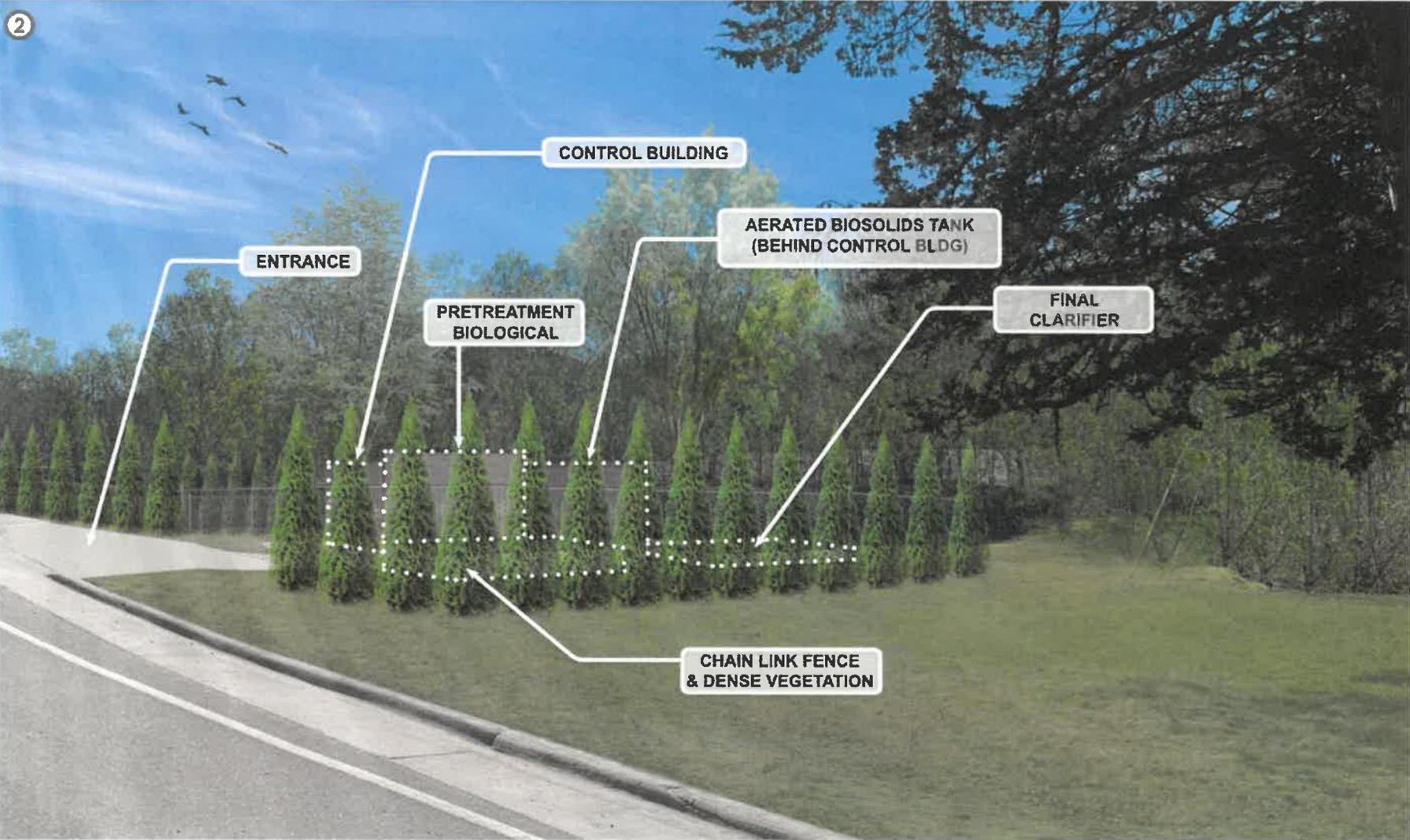


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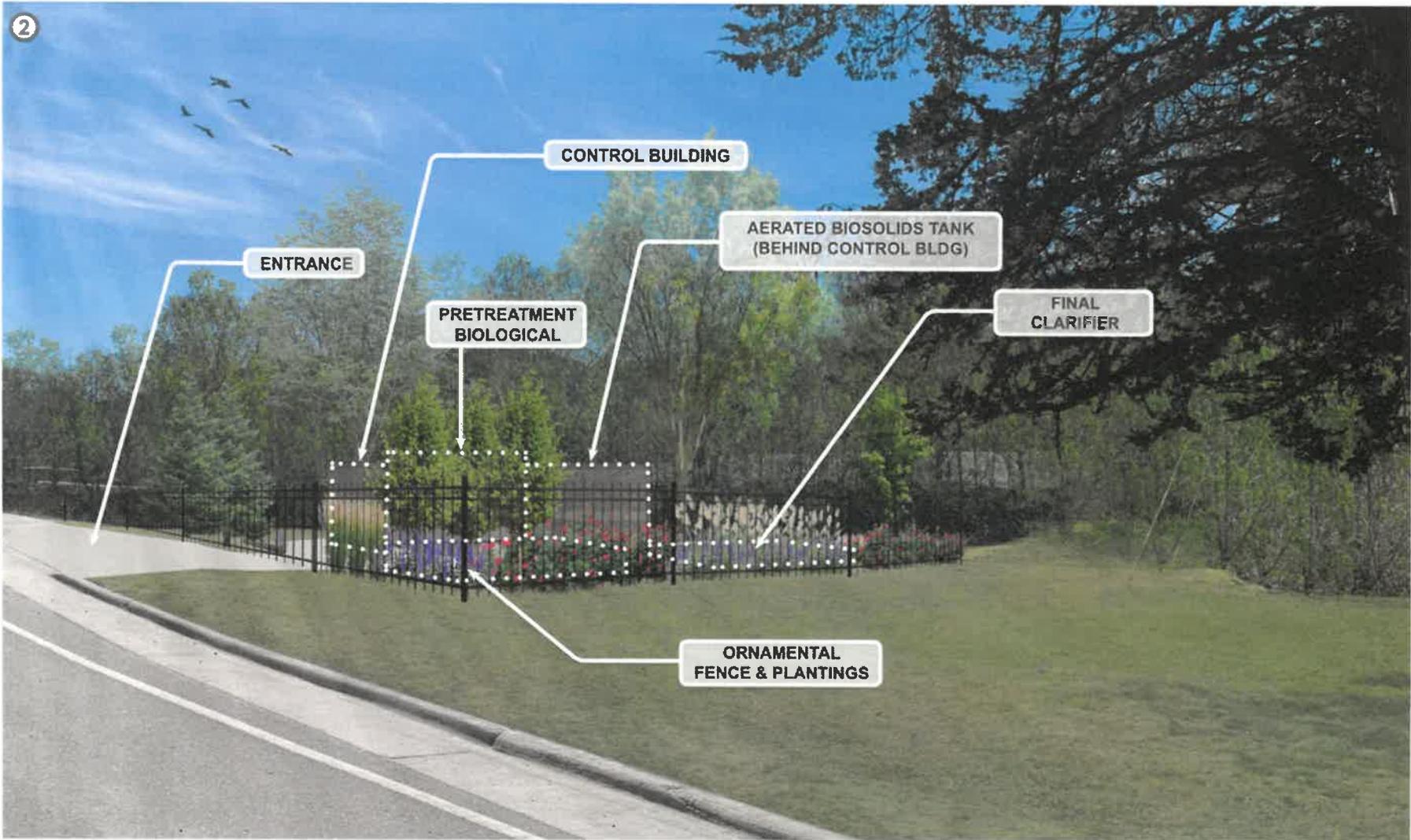


LANESBORO | WASTE WATER TREATMENT FACILITY CONCEPT VIEW FROM STREET

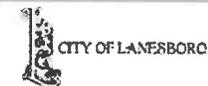


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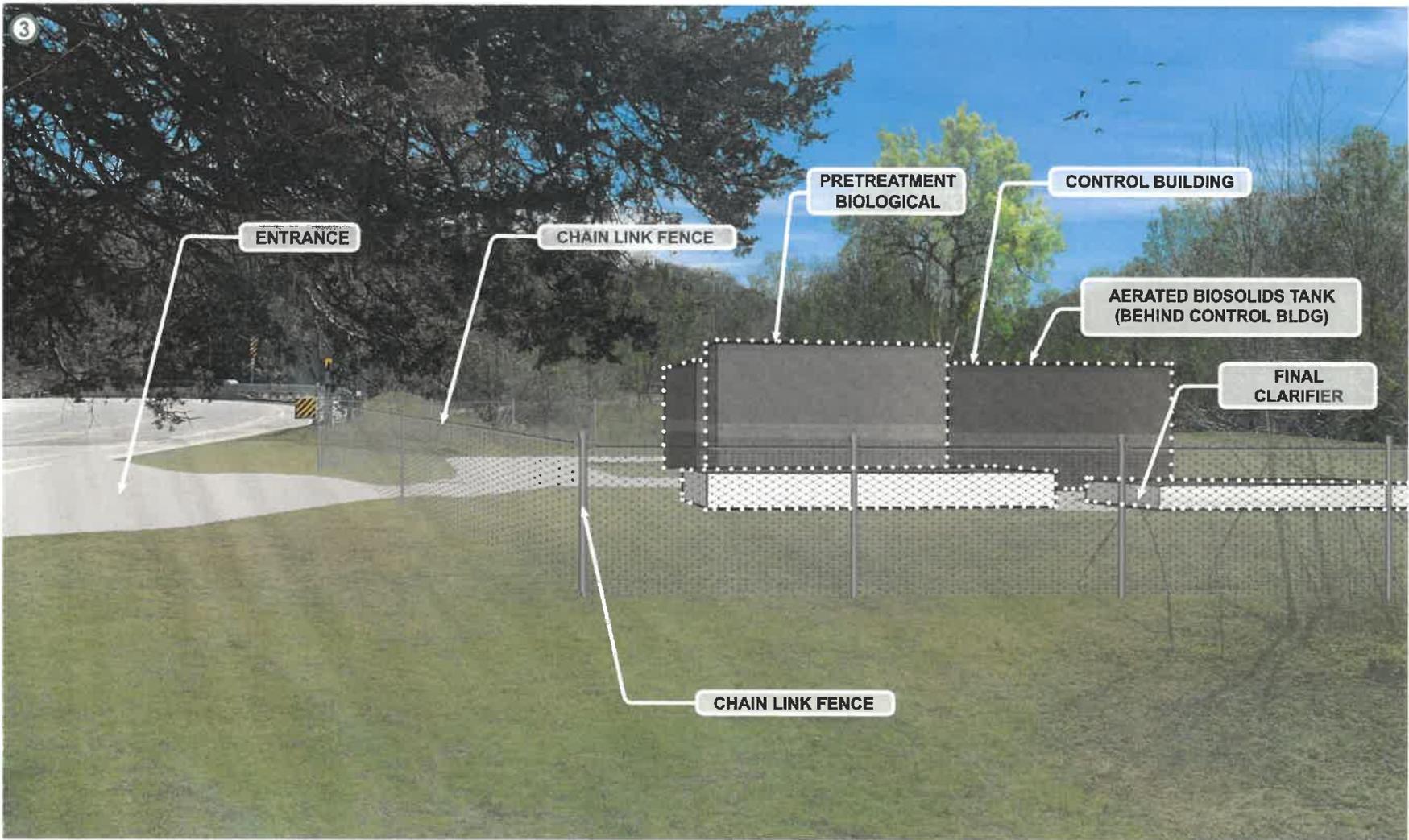
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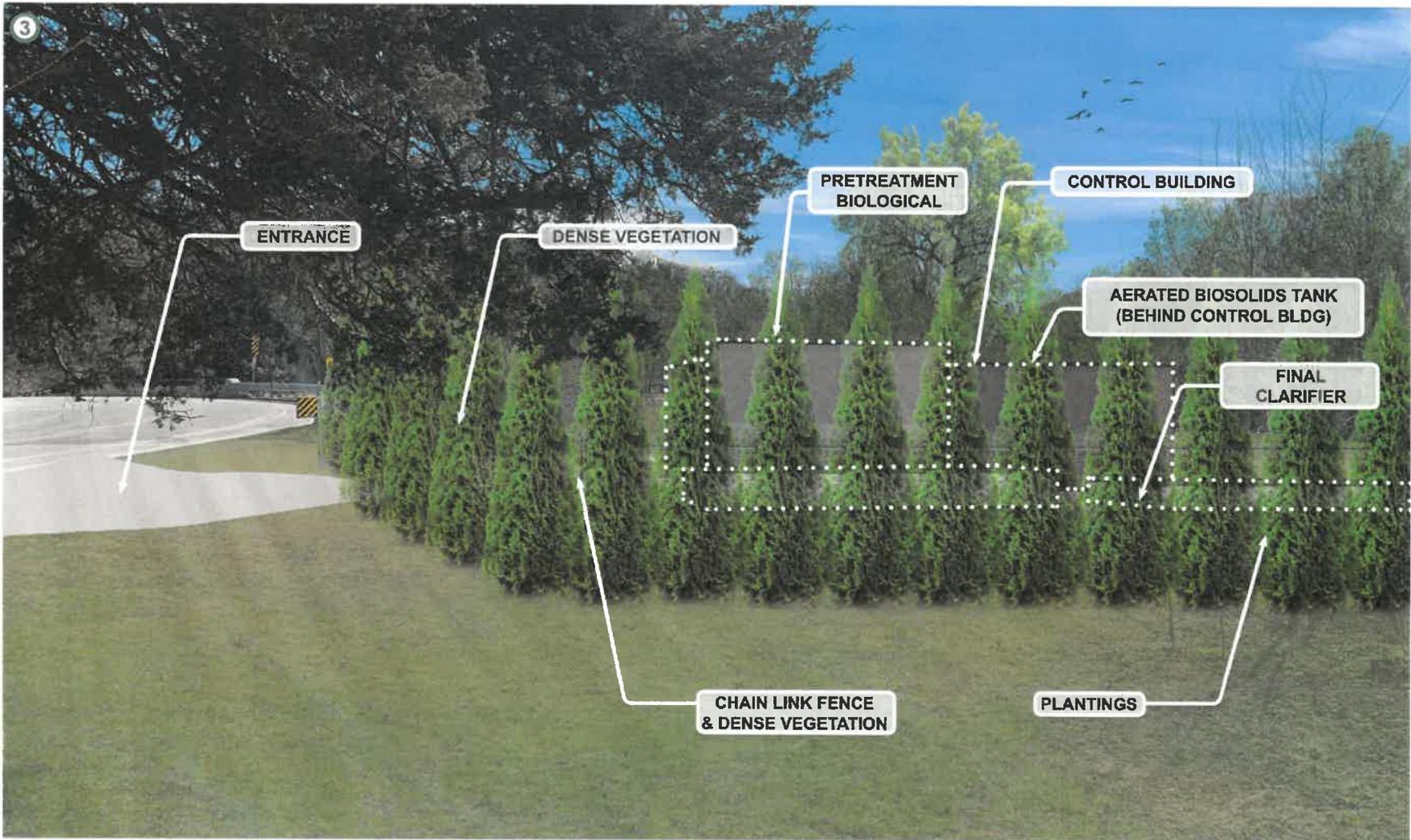
LANESBORO | WASTE WATER TREATMENT FACILITY EXISTING VIEW FROM RESIDENCE





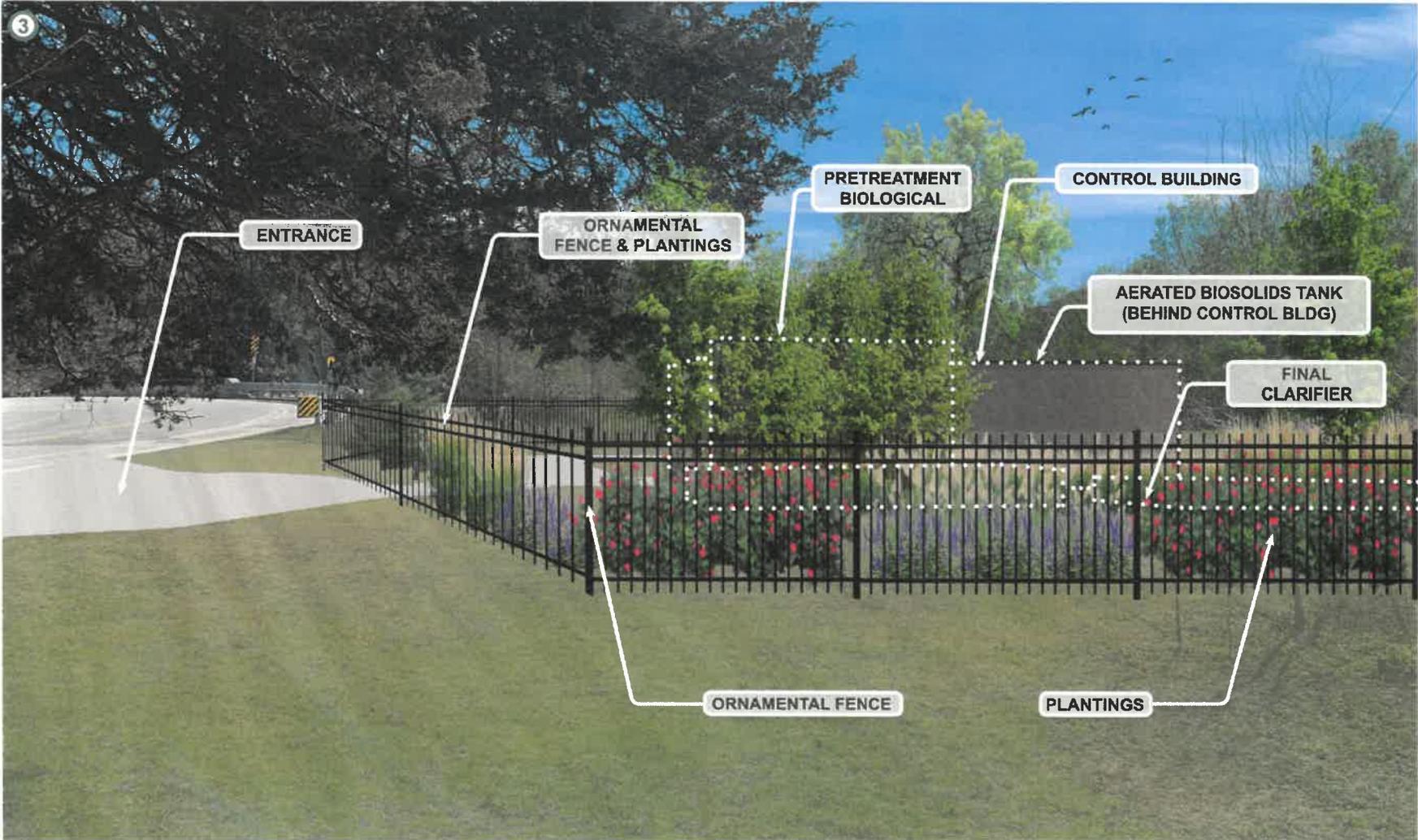
LANESBORO | WASTE WATER TREATMENT FACILITY CONCEPT VIEW FROM RESIDENCE





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Environmental Review

- Environmental Information Worksheet (EIW)
 - Submitted to MPCA (public notice pending)
 - EAW and EIS not required as determined by MPCA
 - No impacts
 - Wetlands / Floodway
 - Historic properties or archaeology
 - Endangered Species in Area
 - Northern long-eared bat (US Fish & Wildlife Services to review tree removal requirements & permitting)
 - Leedy's roseroot (not impacted by project)
 - Storm Water Pollution Prevention Plan (SWPPP)



User Rates & Funding

- Existing user rates = \$39.05 / month (3,000 gal usage)
- New user rates based on affordability
 - Affordability = 1.4% x Median Household Income (MHI)
 - New User Rates = ~\$60 / month
- City pays low-interest loans up to affordability threshold
- Grant-eligible above affordability threshold



Funding

- MN Public Facilities Authority (PFA)
 - Clean Water Revolving Fund (CWRF)
 - Low-interest loans, 20-30 years, 1-3% interest
 - Proposed project in fundable range
 - Water Infrastructure Fund (WIF)
 - Income-based program (>1.4% MHI), up to \$5 million grant
 - Proposed project is likely eligible
 - Point Source Implementation Grant (PSIG)
 - Treatment-based program, up to \$7 million grant
 - Disadvantages (regulatory certainty, Class B facility, higher O&M costs for nutrient removal, only portion of costs eligible)
- USDA Rural Development (RD)
 - Long-term 40-year loans, higher interest rates
 - Affordability = 1.5% of MHI (i.e. higher user costs)



Schedule

Project Schedule City of Lanesboro, Minnesota	
Item	Date
Submitted Plans & Specifications to MPCA	March 28, 2019
MPCA Certification of Project	June 2019
PFA Funding Lists Published	September 2019
Project Bidding (<i>Based on Funding Availability</i>)	Early as Fall 2019
Construction Phase (<i>Based on Funding Availability</i>)	Early as Spring 2019

*****Bidding & construction based on funding availability*****





Questions?

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