

COUNCIL WORK SESSION MINUTES

**June 21, 2021 – 4:00 p.m.
4th Floor Conference Room – City Hall**

A Council work session was held to discuss Schneider contract and energy costs.

Attending: Mayor Bill McMurray and Councilmembers Brenda Blessing, Russell Moore, Marty Novak, Kent O'Dell and Gary Roach.

Bryan Carter, City Manager; Chris Connally, Police Chief; Debra Bradley, Health Director; Kenny Cordonnier, Interim Fire Chief; Tom Mahoney, Interim Administrative Services Director; Jason Soper, Interim City Attorney; Brady McKinley, Asst. Public Works & Transportation Director; Kendra Bundy, Asst. Health Director; Mary Robertson, Asst. to the City Manager/Communications & Public Relation Manager; and Paula Heyde, City Clerk.

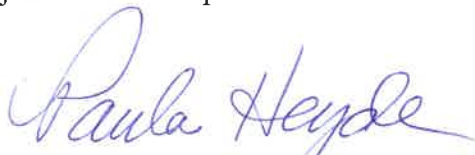
Mayor Bill McMurray called the meeting to order.

Bryan Carter, City Manager, said during the budget review work sessions there was a request to get an update on the status of the existing projects and the new water protection facility project.

Schneider Electric representatives Peter Hinkle, Midwest Team Leader, and Janel Junkersfeld, Wastewater Project Development Manager, gave a power point presentation on “Guarantee Savings Partnership Review of Phase 1 Savings and Update on Wastewater Project Development” (copy attached).

During the presentation, there was discussion on City facilities that are not currently on the list for efficiency improvements, City Hall windows and operation and maintenance (O&M) cost savings.

The meeting adjourned at 4:50 p.m.



Minutes transcribed by Paula Heyde, CMC, City Clerk.



Guarantee Savings Partnership

Review of Phase I Savings & Update on Wastewater Project Development

Peter Hinkle, Midwest Team Leader, Schneider Electric

Janel Junkersfeld, Wastewater Project Development Manager

Agenda



Initial Phase Performance



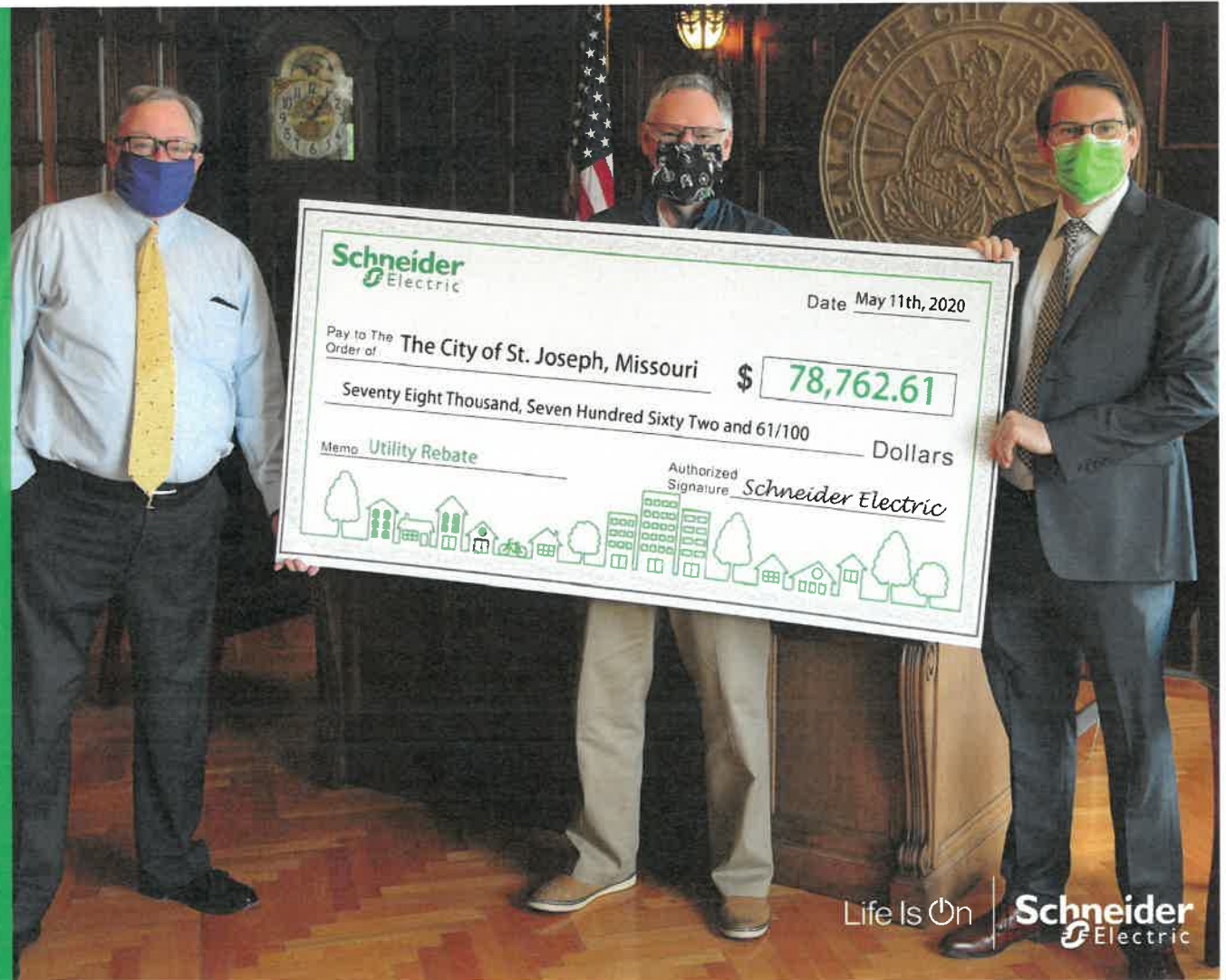
Wastewater Plant Update



SRF Application Update



Phase III Next Steps



Capital Recovery and Reinvestment

What does it mean?



Savings

Identify and capture opportunities for energy and operational savings across the City of St. Joseph



Capital Recovery

Leverage a combination of energy, operational and avoided capital cost savings back into infrastructure priorities. Modernizing your infrastructure through a budgeted and strategic approach.



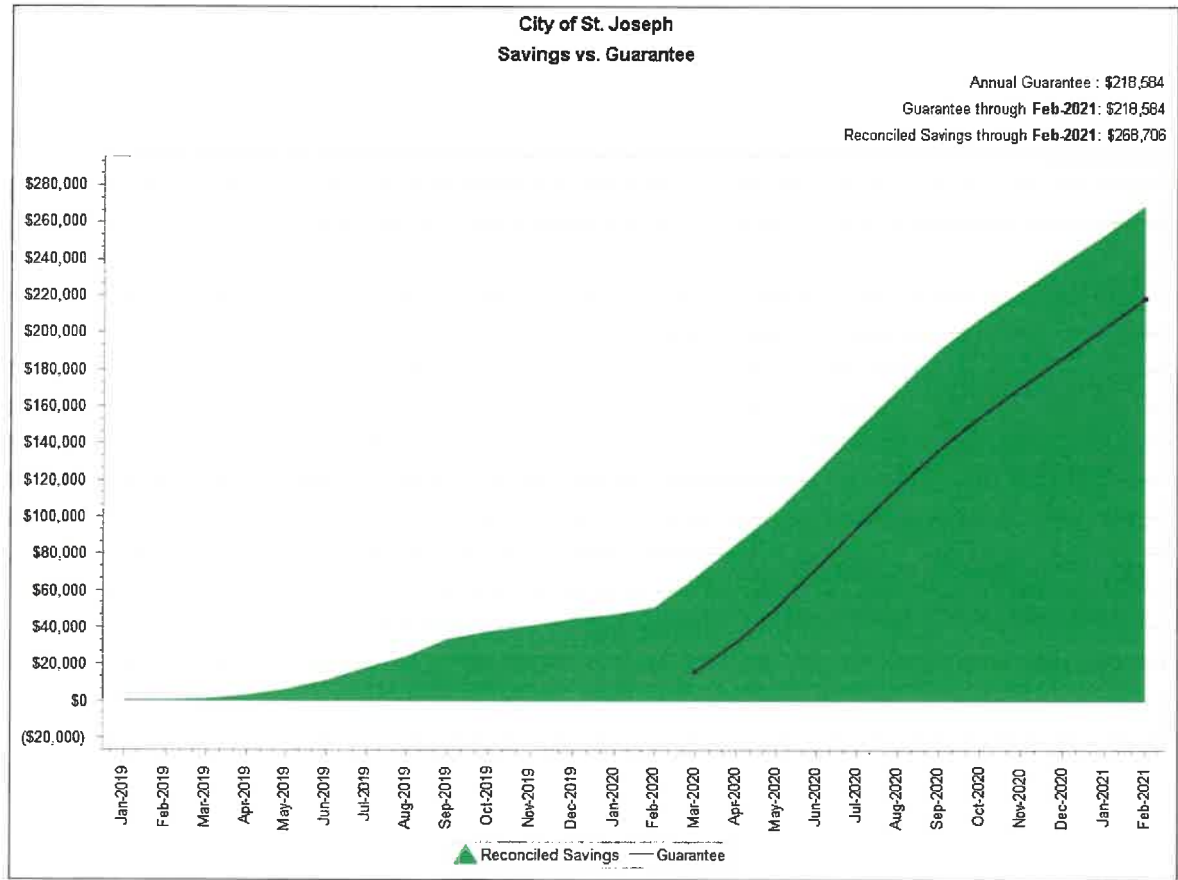
Guarantee

Guaranteed savings and a turnkey solution make it simple and provide peace of mind with regards to ongoing plant performance.

Summary of Efficiency Improvements

City of St. Joseph	Building Automation Upgrades	Mechanical Renovations	Lighting Retrofit	Envelope Improvements	Plumbing Fixture Replacements
City Hall	X	X	X	X	X
Patee Health Department	X	X	X	X	X
Airport Administration Building	X		X		
Airport Maintenance Shop	X		X		
Fire Department Headquarters	X		X	X	
Missouri Theatre	X	X	X	X	
Transit Administration Building, Bus Maintenance, & Storage Building	X	X		X	X
Bus Maintenance & Storage Building	X			X	
Transit Bus Stop	X	X	X	X	
Parks Administration Building	X			X	X
Bode Ice Arena	X	X	X	X	
WPF Administration and Lab Building	X	X			
WPF New Maintenance Building	X				
WPF Old Lab Building	X				
Animal Shelter			X		
Fairview Golf Course			X		
REC Center			X	X	X
Remington Nature Center			X	X	X
Senior Center			X	X	
Park Exteriors			X		
Phil Welch Stadium			X		
Streets Floyd Building			X		

Annual Reconciliation of Performance



Total Savings:
\$268,706

Guaranteed Savings:
\$218,584



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Carbon Footprint Impact

To date, City of St. Joseph has saved 1,621,925 kWh and MCF which is a 1,147 ton reduction in CO2 emissions



Environmental Impact



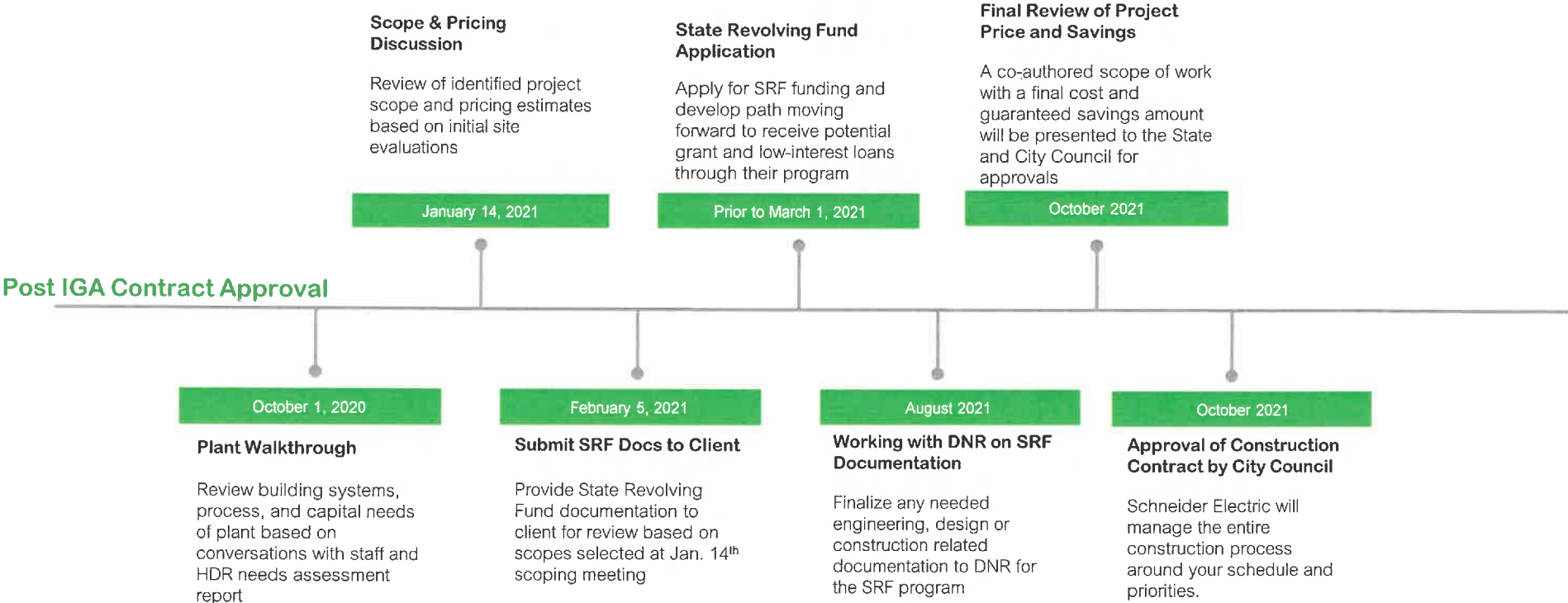
Cars for a Year 243



Acres of Trees 330

Wastewater Development Update

Phase II: Project Roadmap



Phase II: Mechanical, BAS & Metering Scopes

- Replacement of HVAC equipment due to age or operational issues
- Expansion & integration of existing BAS for improved temperature monitoring across multiple facilities
- **Being Installed:** Currently installing submeters in several areas of the facility for ongoing performance



Internal

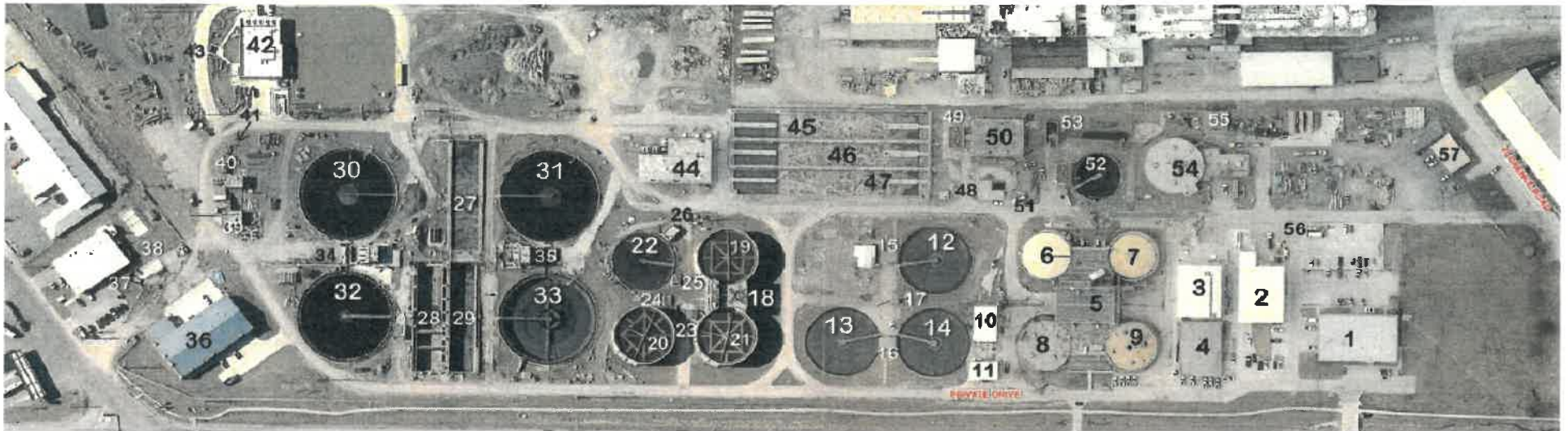
Phase II: Treatment Process Scopes

Energy Savings Scope

- Replace digester mixing equipment
- Connect biogas piping to thermal dryer and boilers
- Replace existing biogas conditioning equipment
- Install activated sludge control system (N, DN, and SRT)
- Install new HST blowers for Domestic Aeration Basins

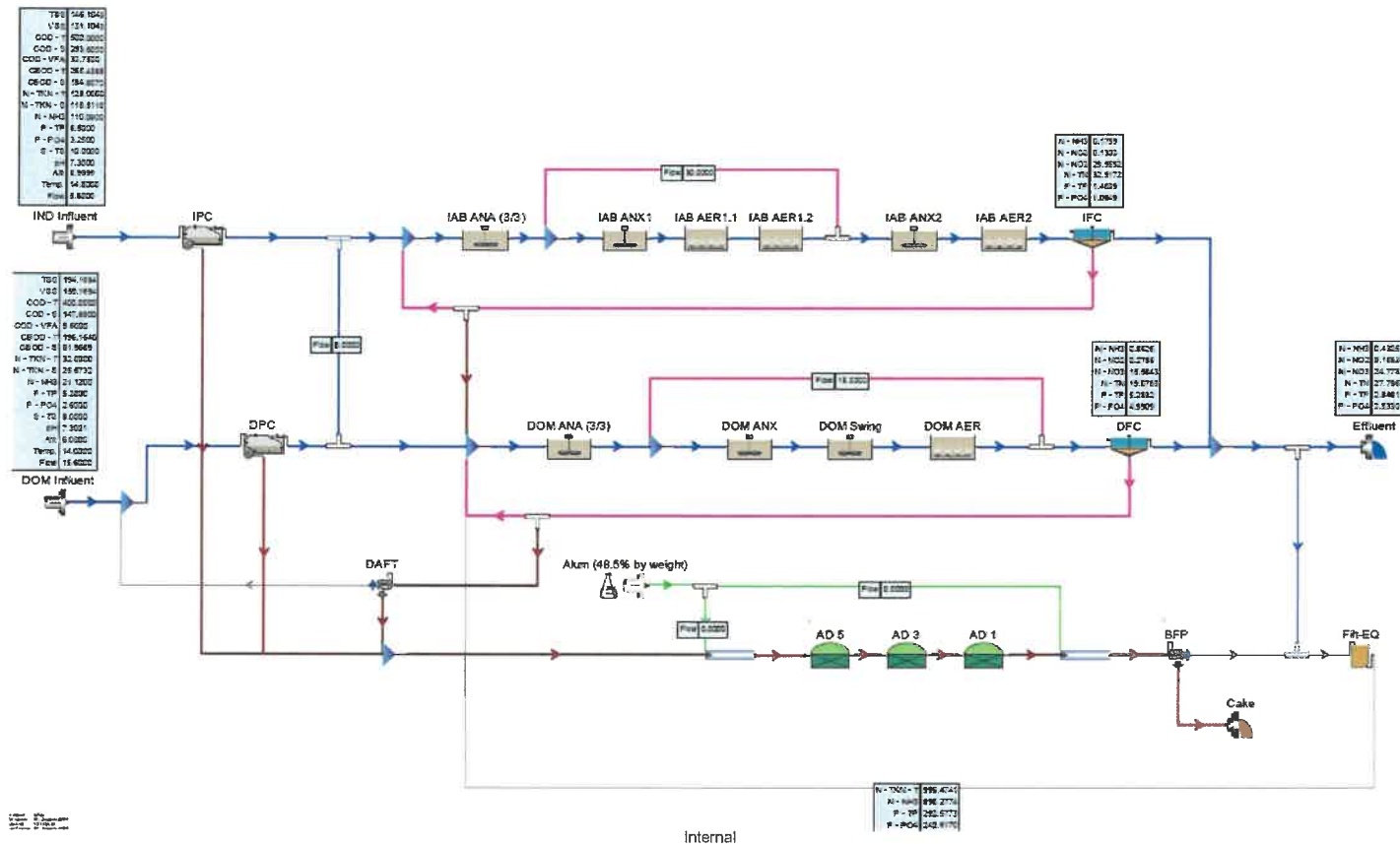
Capital Improvement Scope

- Replace and relocate biogas flare
- Install new biogas conditioning system
- Replace isolation valves, gaskets, relief valves, regulators, flame arrestors, and level sensors on operational digesters
- Replace existing DO probes and airflow meters on Industrial and Domestic Basins



Development Process: BioWin Model

Creating a model of plant processes to understand the impact of various solutions to operations



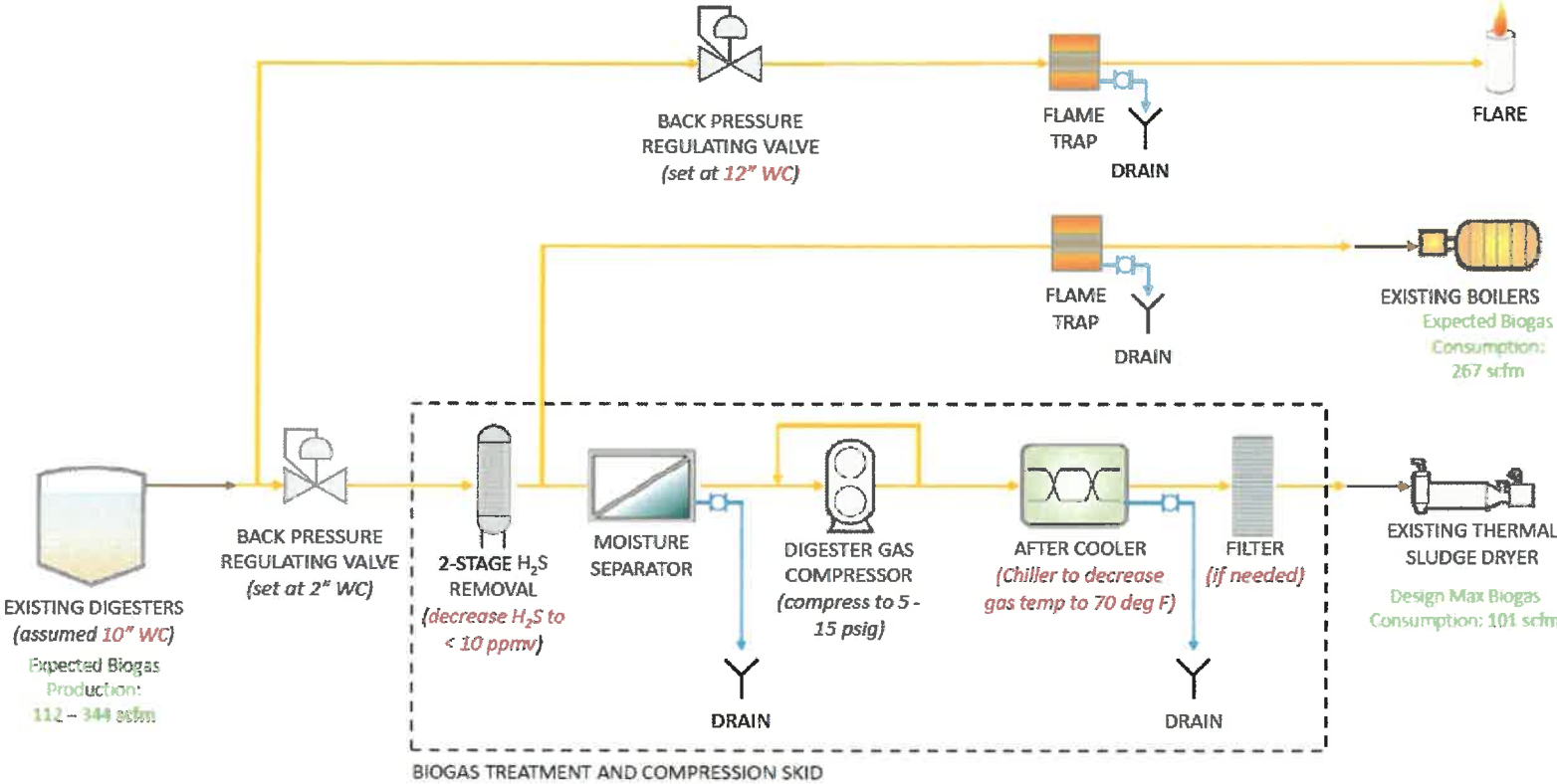
Development Process: Installation of Submeters

Submetering provides data needed for baseline and ongoing guarantees of performance

#	Item	Description	Location
1	TD-MXR-01	Thermo Digester Mixer	Thermo Bldg
2	TD-MXR-02	Thermo Digester Mixer	Thermo Bldg
3	TD-MXR-03	Thermo Digester Mixer	Thermo Bldg
4	TD-MXR-04	Thermo Digester Mixer	Thermo Bldg
5	Digester 1 MXR-01	Meso Digester Mixer	Control Bldg
6	Digester 1 MXR-02	Meso Digester Mixer	Control Bldg
7	Digester 1 MXR-03	Meso Digester Mixer	Control Bldg
8	Digester 1 MXR-04	Meso Digester Mixer	Control Bldg
9	Digester 3 MXR-01	Meso Digester Mixer	Control Bldg
10	Digester 3 MXR-02	Meso Digester Mixer	Control Bldg
11	Digester 3 MXR-03	Meso Digester Mixer	Control Bldg
12	Digester 3 MXR-04	Meso Digester Mixer	Control Bldg
13	DB - 02	Domestic Blower - 02	Blower Bldg
14	DB - 12	Domestic Blower - 12	Blower Bldg
15	DB - 09	Domestic Blower - 13	Blower Bldg

Development Process: Biogas Optimization

Process Flow Diagram: Preliminary biogas use plan



Development Process: Optimize Activated Sludge Process

Scope

Install a real-time nitrification control system on aeration basins

Install a real-time denitrification control system on aeration basins and VFDs on MLR pumps

Install a real-time solids retention time control system for activated sludge process

Install two new HST blowers for Domestic Aeration Basin

Benefits

Reduce oxygen demand and energy consumption; improve total nitrogen and phosphorus removal

Improve total nitrogen removal and phosphorus removal; increase oxygen recovery; reduce blower and pump energy

Automatically adjusts SRT based on temperature; avoid aerating excess solids; reduce energy usage

Improve efficiency at partial loading; replace aging equipment; reduce operating expenses



Domestic Aeration Basin

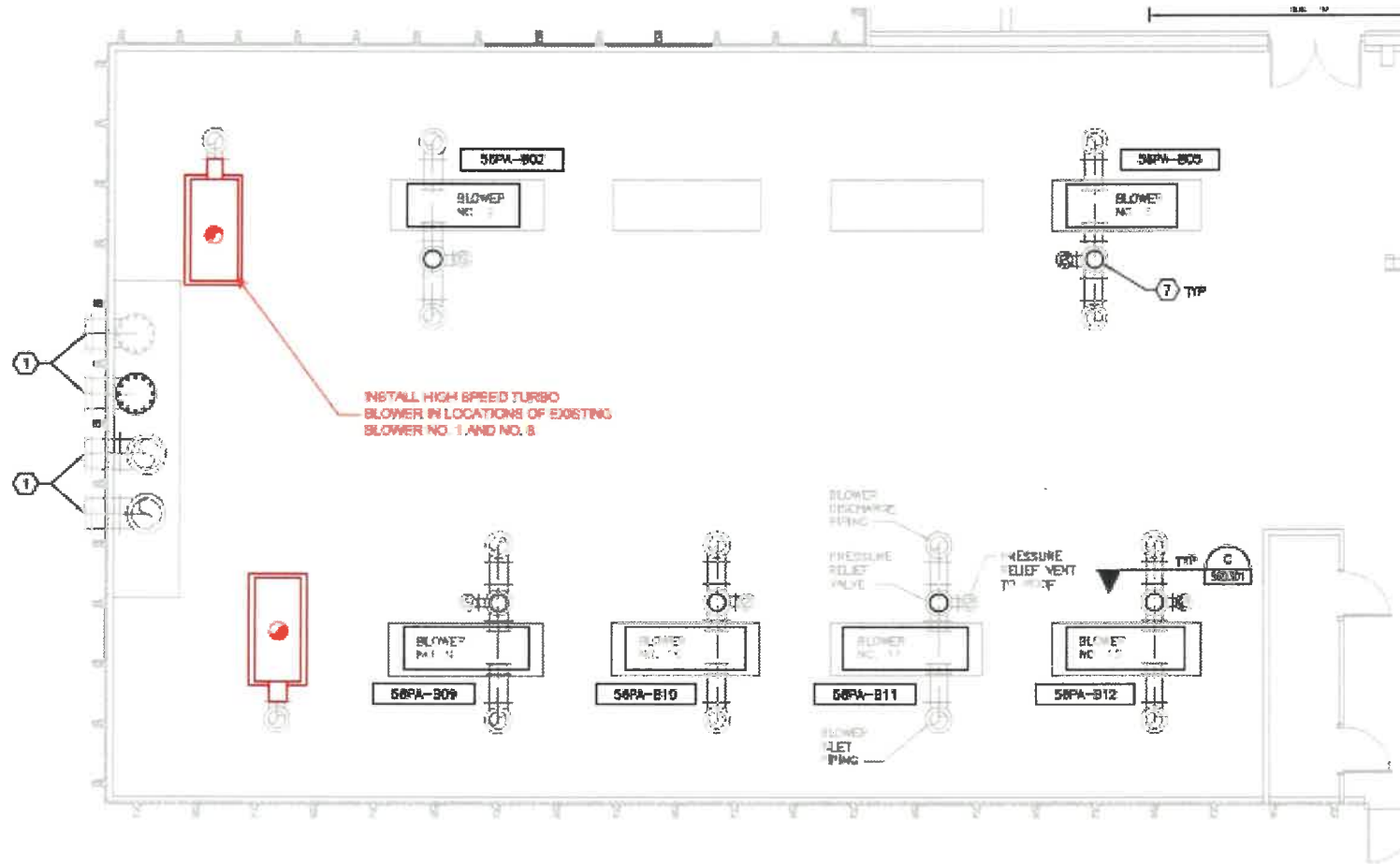


Aging Domestic Aeration Basin blower



Industrial Aeration Basin

Development Process: Optimize Activated Sludge Process



SRF Funding Application

Submitted in March and continue to work through the application process with DNR

Scope of Work	Cost	Annual Energy Savings	Annual O&M / Capital Cost Avoidance	Savings Over 20-yrs: SRF Term
Mechanical, Building Automation, Submetering	\$2,057,576	\$1,372	\$110,016	\$2,993,036
Process Scopes Subtotal	\$23,144,000	\$410,000	\$676,000	\$29,174,000
ALL ECMs	\$25,201,576	\$411,372	\$786,016	\$32,167,036

- Continue to develop and design the scopes of work, while at the same time work with the Missouri Department of Natural Resources to ensure all application documentation are being provided in anticipation of a potential State Revolving Fund loan in early fall of 2021.
- Design team will work with City staff to provide an update to pricing and various scopes for a September timeframe share out to City Council.

Internal



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Next Steps



SRF Approvals and
Loan Documentation



Finalize Design and
Construction Plan



Approve Final
Scopes of Work



Start Construction
Process



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Schneider
Electric