The background image shows a large industrial facility, likely a wastewater treatment plant. It features several large, cylindrical tanks or blenders arranged in a row. The tanks are connected by a complex network of pipes, some of which are painted yellow. The overall scene is dimly lit, with a blue color overlay. The text is centered over the image.

Review of Proposals and Award of Contract: Heat and Power Improvements

Commission Meeting
April 25, 2024

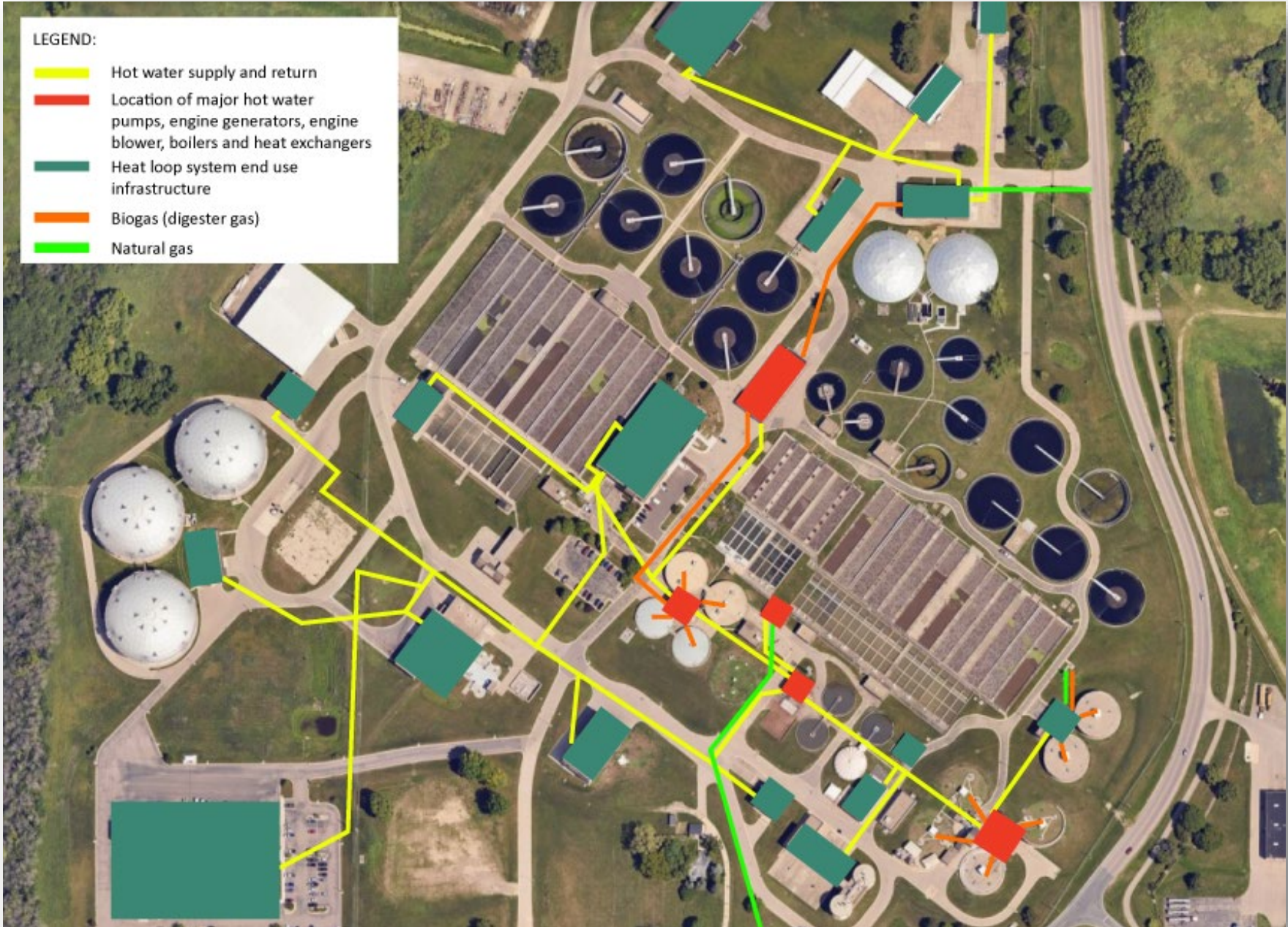
Madison Metropolitan Sewerage District

A white, stylized wave graphic that tapers at both ends, positioned at the bottom of the slide.

Introduction



- LEGEND:
- Hot water supply and return
 - Location of major hot water pumps, engine generators, engine blower, boilers and heat exchangers
 - Heat loop system end use infrastructure
 - Biogas (digester gas)
 - Natural gas

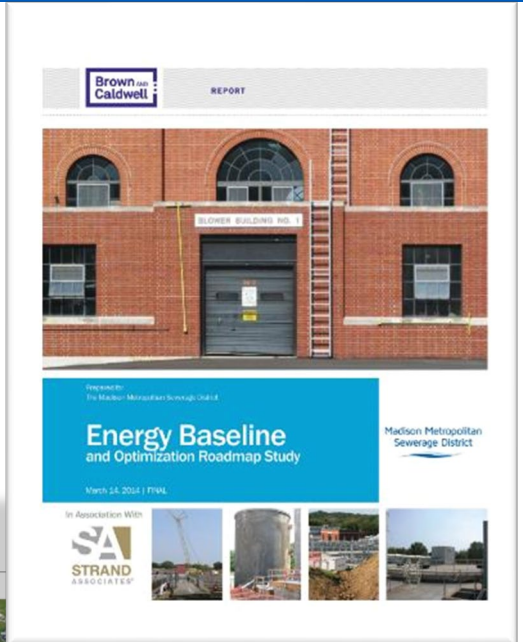


Simplified schematic of the existing heat loop system at the Nine Springs Wastewater Treatment Plant

Project background

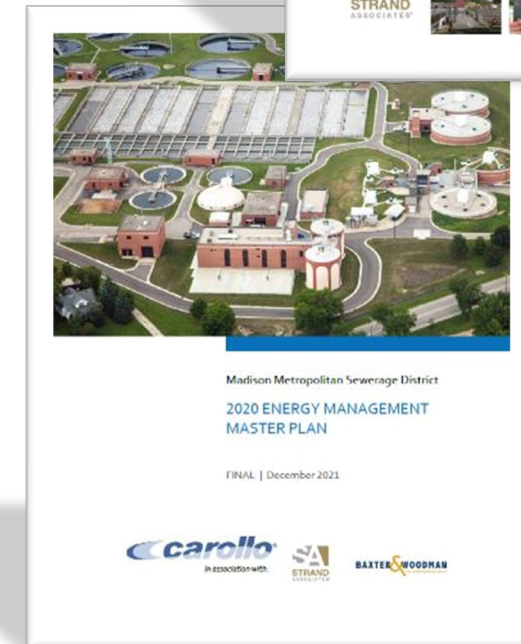
✓ **The 2014 Energy Baseline and Optimization Roadmap study:**

- Focused on how to reduce energy usage
- Focused on how to improve utilization of digester gas
- Focused on how to generate more energy
- **Did not focus on assessing the age and condition of existing infrastructure**



✓ **The 2020 Energy Management Master Plan:**

- Identified critical aging infrastructure related to energy utilization
- Identified multiple pathways for infrastructure replacement
- Recommended rehabilitation, replacement, or upgrade of the aging assets while reducing energy usage, operational cost and energy-related environmental footprint



- ✓ The **Facility Plan** is a statutory requirement and must be submitted to the Wisconsin Department of Natural Resources (WDNR) for approval before project implementation.
- ✓ All projects seeking a state Clear Water Fund (CWF) loan must be submitted for WDNR review and approval.

The basic purpose of **facility planning** is:

- condition assessment
- establish a need for improvement
- evaluate options to address system needs
- identify the cost-effective alternative

The focus of the **Heat and Power Improvements Facilities Plan** is the need for aging infrastructure improvements related to the distribution and utilization of biogas, and generation and distribution of thermal energy at the plant.



Project direction



Use biogas to generate electricity at greater efficiency

Process biogas to renewable natural gas (RNG) to pipeline quality that can be sold to others



Received Proposals and Consultant Selection

Consultant Firms	Consultant Fees for Facilities Plan	Final Scores	Rank (1 to 2), 1 is best
Carollo Engineers / Strand Associates	\$685,100	517	1
Jacobs Engineering Group / Mead & Hunt	\$636,158	507	2

Key takeaways for selecting Carollo Engineers / Strand Associates:

- *2020 Energy Management Master Plan*
- *Proper balance of technical and management level of expertise*
- *Able to meet District's intended schedule*
- *Reasonable fee compared to allocated amount in the 2024 CIP*



Requested Action

- **Approval of Resolution #2024-04-25-R5, awarding the engineering professional services for development of a Facilities Plan for the Heat and Power Improvements Project to Carollo Engineers, Inc. at a cost of \$685,100.**





Thank you