Project Overview

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Background

Small wastewater treatment plants are responsible for the management and processing of residential, commercial, and industrial waste for smaller communities across Nebraska. These plants are major energy consumers in these communities which, like their larger counterparts, are committed to ensuring the highest possible levels of public health, economic growth, environmental quality, and fiscal responsibility. Therefore, this report should serve these utilities to actively pursue opportunities for reducing their environmental impact while still meeting State and Federal regulations.

Project Description

Initially, five treatment plants were visited and studied to determine the greatest energy saving potential. Three wastewater plants were then selected for a detailed energy audit to determine the greatest energy using processes. Other analyses conducted for the municipalities included budget distribution and electric usage studies.

Benefits and Results

Implementing pollution prevention opportunities identified has the potential of significantly reducing energy consumption and related costs. With these direct benefits also come intangible benefits of reducing greenhouse gas emissions and providing a great marketing tool to improve the public image of the municipality. Below is a table summarizing the cumulative recommended benefits for each site.

Table 1. Summary of potential benefits

Site	Annual Energy Savings (kWh/year)	Annual Cost Savings	Annual Greenhouse Gas Reduction (MT CO_2 equivalents)
Malcolm WWTP	112,900	$10,700	76.8 metric tons
Battle Creek WWTP	142,300	$10,600	96.8 metric tons
Wahoo WWTP	413,500	$27,600	281.4 metric tons
Total	**668,700**	**$48,900**	**455 MT CO2E**