

Project Overview

Intern: Elizabeth Regier

Major: Civil Engineering

School: University of Nebraska-Lincoln

Hometown: Julesburg, Colorado



Company Background:

The Nebraska Energy Office (NEO) uses federal funding to address the energy needs of the state of Nebraska. Much of their work involves benchmarking and efficiency assessment projects for individual industries, such as the wastewater project. They also offer low-interest loans to organizations and companies for capital necessary to implement energy efficiency projects.

Project Background:

The Partners in Pollution Prevention Wastewater Project is a multi-year project aimed at both understanding and improving the energy efficiency of rural Nebraska wastewater plants. In prior years, interns benchmarked the energy efficiency of rural wastewater plants in Nebraska. The NEO then selected some of the most inefficient plants for additional evaluation. The 2017 wastewater team consisted of three undergraduate students, each of whom assessed five of these inefficient plants.

Energy Improvement Recommendations:

The energy efficiency recommendations reduce energy consumption and overall costs for each wastewater plant. They also reduce overall greenhouse gas emissions.

Town	Annual Energy Savings (kWh)	Annual Cost Savings (\$/year)	Initial Cost (\$)	Payback Period (years)	Annual Reduction in Greenhouse gas emissions (metric tons CO ₂ eq.)
Kimball	2,824	\$188	\$4,075	23	2.06
Valentine	3,000	-	-	-	2.11
Ainsworth	46,696	\$891	\$2,714	3.0	32.8
Bassett	11,814	\$1,010	\$3,445	3.4	8.31
Elgin	11,650	\$788	\$3,562	4.5	8.19
TOTAL	75,484	\$2,877	\$13,796	4.8	53.1