

## Project Overview



Intern: Madison Burger

Major: Biological Systems Engineering

School: University of Nebraska-Lincoln



### Company Background

Nebraska extension offices with the University of Nebraska-Lincoln help their communities by delivering support in several areas. Staff at the extension offices known as extension officers are given faculty standing and use their areas of focus to offer outreach education to their communities. Madison County and Colfax County Extensions' goals include providing for their community in the areas of Food, Community Vitality, Beef Systems, Cropping Systems, Nutrition and Health, 4-H Youth, and Water and the Environment.

### Project Description

Individual projects for this summer were compiled by the Pollution Prevention interns. The Ag and Water Management interns assisted with the installation and use of watermark moisture sensors, interviewed producers on their use and ease of use of the sensors, and provided full irrigation assessments for two agricultural producers aiming to reduce water and fuel use and improved efficiency for irrigation systems.

### Pollution Prevention Benefits

Improvements from the projects this summer directly include source reductions in energy use, fuel use, and water use. Producers also may gain improved crop yields, decreased nitrogen pollution, and decreased runoff. Intangible and indirect benefits include prevention of contaminated water, decreased future maintenance costs, and reduced greenhouse gas emissions.

### Results

Table 1. Summary of Pollution Prevention Benefits

Method	Water Savings (gallons/year)	Energy Savings per year	Cost Savings (\$/year)	GHG Reductions per year
Assisted 6 producers with sensor installations	74 million	260 gallons propane, 4,700 gallons diesel, 14,600 kWh electricity	\$12,000	296 MT-CO <sub>2</sub> Equivalent
Provided 3 full irrigation assessments	30 million	5,000 kWh electricity, 260 gallons propane, 2,500 therms natural gas, 500 gallons diesel	\$21,000	26 MT-CO <sub>2</sub> Equivalent