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Background

As part of the Nebraska Industrial Assessment Center (NIAC) team, the intern assessed three manufactures. These include Horton at Britton, SD, who specializes in producing fan drives to optimize horsepower and engine cooling, CS Precision that makes hydraulic coupling components, and Wastewater Treatment Facility in Scottsbluff, NE.

Project Description

As part of these assessments, examples of the recommendations that were prepared include:

- Upgrading fluorescent fixtures to LED lighting fixtures. By converting to all LED lighting will result in reduced electricity use and demand, as well as lowering maintenance costs due to longer life span.
- Installing high volume low speed fans (HVLS) on the main floor of the plant. By installing high volume low speed fans will results in increasing the air circulation of the room which will make the room temperature cooler and increase the productivity of the workers. The annual cost savings is found using a 0.1% increase in worker productivity as well as comparing the additional electricity usage for the HVLS fans as opposed to the personal fans.
- Upgrading all high-pressure sodium (HPS) bulbs to LED lighting fixtures. By converting to all LED lighting will result in no damage from the strong vibrations caused by the nearby train tracks, as well as reduced electricity use and demand, and lowering maintenance costs due to longer life span.

Pollution Prevention Benefits

The benefits of the recommendations discussed above are summarized below in Table 1:

Table 1: Recommendations Savings and Benefits

Recommendation	Annual Cost Savings	Implementation Cost	Payback Period (years)	Energy Savings (kWh/yr.)	GHG Reduction (MTCO2e /yr.)
LED Lights	\$19,700	\$133,000	6.8	291,000	217
HVLS Fans on Main Floor	\$9,620	\$15,000	1.6	5000	3.7
HPS Lighting to LED lighting	\$1,340	\$5,620	4.2	10,000	7.4
Total	\$30,660	\$153,620	5.0*	306,000	228.1
*The overall payback was calculated based on the total sum of all capital investments divided by the total sum of dollar savings from all the recommendations					