MN Department of Corrections, Shakopee

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Organization Background

Minnesota Department of Corrections oversees 11 facilities comprising 7.5 million square feet and an annual energy footprint of 6.83 metric million therms. Minnesota Corrections Facility-Shakopee (MCF-Shakopee) is Minnesota's only facility for housing incarcerated women and has a maximum capacity of 676 incarcerated individuals at all security levels. At 255,872 square feet of buildings with 32.2 acres of open land, the facility operates with an annual budget of approximately twenty million dollars. MCF-Shakopee averages 562 incarcerated people and covers all security, nutritional, educational, medical, recreational, spiritual, therapeutic, and transitional needs of those serving out their sentences.

"It's been a remarkable experience interning for MnTAP this summer, I've gained greater understanding and appreciation for sustainability work being done within Minnesota's state departments, and greater clarity around my career aspirations for the future. Helping the Department of Corrections work toward their sustainability goals has been immensely rewarding. This internship offered me the opportunity to see that sustainability solutions can be directly advantageous to realizing the DOC's vision of restorative justice, racial equity, and community connectedness." ~ DJ

Project Background

This project identified and optimized systems that use large quantities of water and energy in the facility. This project was focused on residential water use, including on-site laundry operations, lighting systems, and kitchen equipment and procedures.

Incentives to Change

The Department of Correction prioritizes security and safety while transforming lives for a safer Minnesota. The facility's leadership is looking to reduce operations costs associated with water and electricity use so that more funds can go towards therapeutic services and educational opportunities and programming. Additionally, the State of Minnesota prioritizes optimizing energy and water use to mitigate climate change.

SOLUTIONS

This project identified more recommendations than could be covered in this executive summary. Please see the table for the full list of recommendations.

Install Low Flow Showerheads

MCF-Shakopee has 56 showers on site with varying fixtures and several different flow rates. This recommendation aligns with the Americans with Disabilities Act (ADA) as well as the needs of incarcerated people. Wherever possible, fixtures labeled by the Environmental Protection Agency as WaterSense should be used. Installing fixtures flowing at 1.5 gallons per minute would save the facility 2,800,000 gallons of water, 21,000 therms of natural gas, and $26,000 annually.

Commingle IP Laundry

MCF-Shakopee currently uses 2,063,000 gallons of water each year for laundering incarcerated people's clothing whereas bed linens are laundered off site. All incarcerated people receive 43 items of state-issued clothing and a large mesh bag upon intake to the facility, and they are

Solutions

responsible for laundering their own clothes. On average, each person does 2.5 loads of laundry per week, which equates to over 73,000 loads of laundry per year for the current population. Using individual mesh laundry bags when washing clothes would keep each person's laundry separate and allow for comingled loads. Implementing a commingle laundry system would save 1,030,000 gallons of water, 260,000 kilowatt-hours (kWh), 1,400 pounds of detergent, 1,600 pounds of scrap metal, and $49,000 annually.

Retrofit Lighting System with LEDs

With eleven buildings and substantial outdoor lighting needed to adequately protect incarcerated people and employees, lighting accounts for 35% of the facility's electricity use, and the total annual electricity bill costs over $470,000. A lighting audit was conducted to inventory the many fixtures and bulb types; 96% of the facility is lit by fluorescent bulbs, which contributes to 1,480,500 kWh demand for lighting each year. Retrofitting the facility to light-emitting diode (LED) lighting would save the facility 600,000 kWh and $80,000 annually.

"Our partnership with MnTap served as a valuable turning point for achieving our future sustainability requirements. Intern Dannielle did an exceptional job of modeling her findings to meet our unique operational requirements. Her analysis revealed significant water and energy use reduction strategies that are achievable with a short-term ROI. The MnTap program is very professional, well organized, and provided significant value to our operation going forward."

~ Eric Thomforde
Physical Plant Director, MCF-Shakopee

Recommendation	Annual Reduction	Annual Savings	Status
Low Flow Showerheads	2,800,000 gal water 21,000 therms	$26,000	Implementing
Commingle Laundry	1,030,000 gal water 260,000 kWh 1,400 lbs. detergent 1,600 lbs. scrap metal	$49,000	Recommended
Retrofit Facility with LEDs	600,000 kWh	$80,000	Implementing
Install Ozone	2,900 lbs. detergent	$28,000	Recommended
Replace Dishwasher	19,000 gal of water 120,000 kWh	$11,000	Recommended
Turn off IP Coffee Machines When Not in Use	67,000 kWh	$6,200	Recommended
Replace Gaskets on Freezers and Coolers	1,500 kWh	$150	Implemented

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