CASE STUDY

State Buildings Energy Conservation Program (SBECP)

Eastern Montana Veteran's Home

Location
Glendive

Project Completion
July 2019

Project Budget
$189,556

Budget Breakdown
Utility: $12,000
Agency: $20,000
SBECP: $157,556

Annual Estimated Savings
$16,293
205,551 kWh

Project Summary

Campus lighting upgrade. LED lamps and fixtures were installed both inside and outside of campus buildings.

Background

The Eastern Montana Veteran's Home (EMVH) is a State-owned facility that is privately operated by the Glendive Medical Center (GMC). Due to multiple entity involvement , the project required a unique partnership between SBECP, DPHHS, and GMC. The partnership was structured on an agreement between DPHHS and GMC, where GMC agreed to pay DPHHS the energy savings resulting from the project, through the financing term; therefore allowing the project to move forward with savings paid to DPHHS to cover project construction costs. The project permanently removed and replaced over 1,000 florescent ballasts, a source of ongoing maintenance cost incurred by GMC. This upgrade allowed GMC to capitalize not only on energy savings but also on reduced subcontracted maintenance for ballast replacement.

IN NEED OF IMMEDIATE REPLACEMENT

In addition to being an energy hog, the lighting at EMVH was in poor condition. A significant number of the florescent lamp ballasts were failing, resulting in flickering lights throughout the facility. Staff often turned the lights on before using office space to allow the ballasts to "warm up" to reduce flickering and visitors complained of suffering from headaches caused by the flickering lights. The campus did not have a standardized lamp color temperature and many of the plastic lenses on lighting fixtures had deteriorated. The lack of variable color illumination created spaces with poor visual contrast.

This upgrade project replaced all florescent and sodium vapor lamps/ballasts with LED lamps and fixtures. The Department of Energy's National Research Lab assisted with dimming systems designed and installed in facility hallways. These systems were designed to improve circadian rhythms of the residents. Both nursing staff and residents appreciate the dimmable lighting as it eliminates high intensity light resulting from room entry and is less disruptive to sleep patterns. Not only does dimmable lighting provide substantial energy savings, but the uniform illumination provides high contrast zones lessening risk for slips, trips and falls. In addition, lamps with the highest possible color rendering index were used in medicine dispensing rooms. High color rendering light makes colors sharper and easier to see, potentially reducing medicine dosing errors. Finally, upgrading to LED lights in the parking lot and along egress sidewalks improved safety for night work shifts.

Upgrading to LED lighting across the campus reduced the baseline electrical load by ~40%. New fixtures have 2-5 times the operating life of those replaced.