

ENERGY COST REDUCTION MEASURE (ECRM) DESCRIPTIONS

ECRM 1 – Interior Lighting Retrofits

The district has already taken steps to reduce electricity consumption by retrofitting interior lighting systems with updated T8 lamps and electronic ballasts. This ECRM captured the remaining systems not addressed by the previous projects and eliminated all T12 lighting within the District.

ECRM 2 – High Bay Fluorescent Lighting Upgrades

In previous projects, the District eliminated all metal halide fixtures in gyms and high bay spaces. During investigation, two additional warehouses were discovered. The retrofit fixtures are a T5HO fluorescent fixture.

ECRM 3 – Daylighting Controls

This ECRM was the first project that incorporated daylighting control strategies into the District. Seven campuses were selected and daylighting sensors were installed in the main corridor (approximately 40 fixtures each) to disable lighting during occupied hours. Simulations were done to verify that the light levels were still within acceptable limits.

ECRM 4 – LED Exterior Lighting Upgrades

Due to success with a pilot project last year, the District decided to replace existing metal halide fixtures with LED fixtures. These fixtures lit parking lots and building entrances. The one-for-one replacement strategy was cost effective and the new fixtures were installed with only minor alterations to the electrical service and light pole. In addition, the new fixtures have an integral motion sensor that reduces the LED wattage to 35% when no movement is detected. This feature increased the project savings by over 40%.

ECRM 5 – Interior Lighting Controls

For interior lighting, the District decided to install lighting control sensors (occupancy and vacancy). Occupancy sensors were installed in corridors and public areas that disable the lighting when no motion is detected for 10 minutes. Once motion is detected, the lighting is re-energized. In classrooms, the District utilized vacancy sensors. Vacancy sensors are similar to occupancy sensors except they require the occupant to manually enable the light switch once the lights are disabled. This eliminates stray movements from enabling the lights when no occupants are present.

ECRM 6 – Power Factor Correction

In order to avoid power factor penalties from the Utility provider, power factor equipment was installed at each campus. This equipment improves the effectiveness of the electrical system and eliminates the penalty from the Utility provider. While this measure does not reduce electricity usage, it does accomplish the goal of proper stewardship of resources.

ECRM 7 – HVAC System Commissioning/Optimization

The largest portion of the project was retro-commissioning of 12 campuses. The retro-commissioning process included discussions with stakeholders, detailed testing of the HVAC system and Building Automation System. Deficiencies in each system were compiled into a set of construction documents and implemented by the Construction team. The measures included replacement of critical sensors, installation of variable frequency drives, optimization of chilled water plant control, new chilled water pumps, new air handling units and a new chiller. This ECRM was measured and verified and