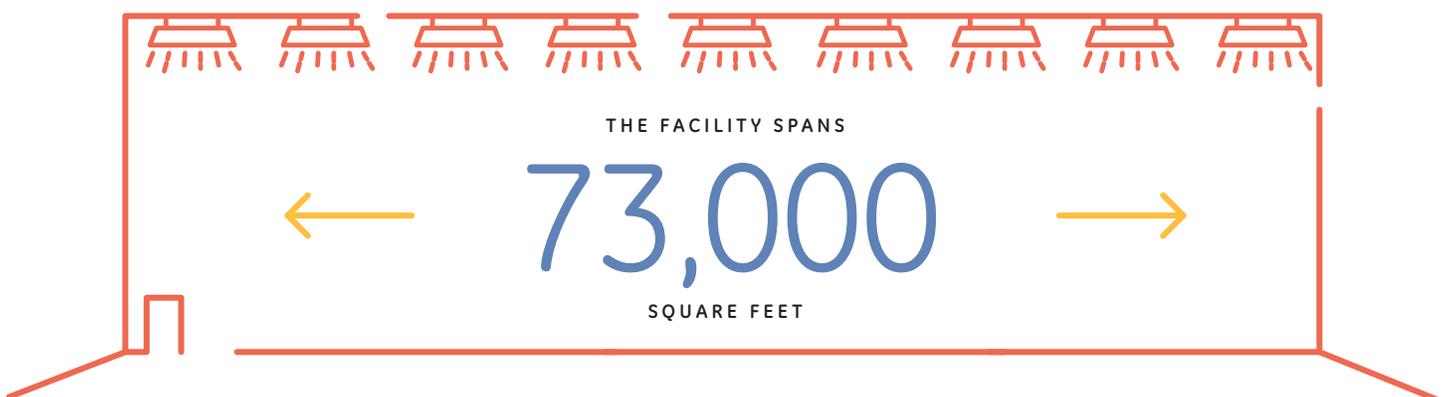


# Stop & Shop Drives Energy Savings with LED Technology & Commercial Lighting Controls



## The Opportunity

The Stop & Shop store in New Bedford, Massachusetts is a 73,000 square foot, full-service grocery store with offices and a smaller mezzanine area upstairs. Originally, the building had fluorescent lighting, and the building owners were interested in the savings potential offered by new LED technology and advanced controls. The task tuning ability was particularly of interest as it ensures quality lighting for the various products, consumers, employees, and tasks in each section.



## The Solution

The Current, powered by GE, Daintree ControlScope® Manager (CSM) is a commercial lighting control software solution using Zigbee mesh networking. This networking system can set up fixture groups within the CSM to facilitate localized control.

LED luminaires such as the Cooper Corelite™, Cooper Encounter™, and Precision Paragon™ were shipped with preinstalled Zigbee-enabled controls compatible with the Daintree Control System. All luminaires were set up with built-in occupancy and daylight harvesting sensors and can be task tuned with Daintree software.

The Stop & Shop store departments operate on varied schedules ranging from 6 AM to 12 AM, Monday through Saturday, and 7 AM to 9 PM on Sunday. The new advanced commercial light controls applied differing task tuning levels to accommodate the needs of each department.

## The Results

Pacific Northwest National Laboratory managed the measurement and verification component of the demonstration and the Cadmus Company completed field energy measurements of the lighting system before and after the upgrade to capture the energy savings of the new LED system. The results show that initial replacement of older fluorescents with LEDs saved 30% of the estimated annual lighting energy use.

Energy savings increased by an additional 36% with task tuning and with occupancy and daylight sensing controls. Task tuning was used to set operating light levels according to store management requirements for optimum retail sales conditions. This resulted in post-upgrade light levels that were visually brighter to management but measured lower than pre-upgrade levels. Occupancy sensing was used to set reduced light levels rather than full off in most spaces when the space was not occupied which resulted in an estimated savings of 18,000 kWh/yr.

# Energy Efficiency Strategy

## Total Lighting System Savings\*



30%

NEW LED  
FIXTURE ONLY



66%

NEW LED FIXTURE  
WITH CONTROLS

## Potential Controls Savings for Typical Lighting Systems\*\*



4%

OCCUPANCY  
SENSOR SHUTOFF



(~)

DAYLIGHT  
HARVESTING



47%

HIGH-END TRIM/  
TASK TUNING\*\*\*

Total annual energy savings is estimated to be 439,300 kWh, which is a 66% savings over the baseline energy use at this site. The corresponding reduction in facility energy cost is approximately \$65,895 annually, and the total project cost, as installed, was \$583,061. The payback for the project is calculated to be 7.5 years after the \$92,253 EverSource utility rebates are applied.



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