



Marblehead Public Schools



“Our new, high-efficiency LED lighting has transformed our cafeteria and gym into well-lit, welcoming recreational spaces for our students – areas where the majority of the student body congregates on a daily basis. Additionally, we’ve enhanced outdoor safety with LED lighting that also requires less frequent maintenance, allowing us to redirect those costs to focus on bigger picture student initiatives. Working with the ENGIE team, we were able to save dramatically on energy costs with no up-front investment required.”

Ken Lord, Executive Director of Technology and Operations

THE OPPORTUNITY

Located in a coastal town on the north shore of Massachusetts, the Marblehead Public School system is focused on providing the best possible educational environment for their students, with special focus on student engagement, social and emotional learning, service learning, and safety and security. With limited capital for facilities improvement, Marblehead High School leaders needed to address operational issues in the gymnasium, where poor light quality was compounded by humming light fixtures and hard-to-reach switches.

THE PARTNERSHIP

The Marblehead school district had been working on a plan to upgrade their lighting for several years, but without funding, they were unable to implement a solution. ENGIE Services U.S. created a plan including lighting design, installation, and project financing, enabling Marblehead to realize their savings goals with no upfront investment.

Program Summary

- Annual Electricity Savings: \$37,264
- Annual Electricity Savings: 230,680 kWh
- Annual Maintenance Savings: \$7,110
- Total Installation Cost: \$109,108
- Upfront Investment: \$0

Technical Scope

- Indoor and outdoor LED lighting upgrades at three locations in Marblehead High School, including advanced lighting controls

ENGIE's lighting solution involved replacing the gymnasium's outdated metal halide fixtures with high bay LED fixtures with sensors. The aging metal halides created a constant, loud humming sound which was a consistent problem for the school when using the gym for anything outside of sporting events. The new LED technology eliminated the humming and drastically improved the experience of using the gymnasium. In addition, the ENGIE team designed a demonstration project to show off LED technology in the cafeteria, making the space brighter and more welcoming for students. Following the success of the lighting upgrades, Marblehead Public Schools worked with ENGIE to retrofit the building's exterior lighting with LED technology.

ENGIE replaced 282 fixtures with LED lighting in the cafeteria and gymnasium. In the cafeteria, advanced sensors and controls use daylight harvesting principles to adjust the lighting levels when natural light is bright, saving energy and improving visibility. The exterior lighting retrofit involved replacing 117 lights in the front patio, the driveway, the parking lot, and pathways, creating a safer environment for students and staff.

The new LED lighting fixtures will significantly reduce the frequency that maintenance staff will need to change out bulbs using an aerial work platform, ultimately saving staff time and costs. All told, the lighting upgrades are saving the Marblehead School District nearly \$45,000 annually in energy and maintenance costs.

Marblehead School District was able to pay for the project using energy and operational savings through ENGIE's in-house financing solution designed to support energy efficiency and sustainability programs, ENGIE Advantage™. This provided immediate cash flow benefits and enabled the district to undertake the project despite budget constraints.

3 DIMENSIONS OF IMPACT

ENGIE is committed to building three dimensions of impact in every customer's future:



Supporting People

- Marblehead High School has created a brightly lit, friendly environment in both the gymnasium and the cafeteria, and has improved the student experience in the gymnasium by removing the humming light fixtures.
- New LED exterior lighting at Marblehead High School ensures the school grounds, including the parking lot, front patio, and sidewalk areas, are now well-lit, boosting campus safety.



Saving Money

- Marblehead Public Schools is expected to achieve nearly \$45,000 in annual energy and maintenance savings.
- Marblehead Public Schools captured more than \$3,000 in utility incentives.
- Monthly savings exceed monthly cost, making the project cash-flow positive.



Protecting the Environment

- Marblehead High School's upgraded energy profile reduces their annual carbon emissions by 163 metric tons, the equivalent to the amount sequestered by 192 acres of U.S. forests in one year.