



Project Summary

The City of Battle Creek traffic signal and decorative streetscape upgrade represents the largest LED conversion project per capita to date in the State of Michigan and one of the largest per capita in North America.

End User: City of Battle Creek, Michigan

Application: Street lighting, traffic and way-finding signage.

Product:

- 536 Relume decorative post top luminaries
- 82 Relume street name sign retrofit panels
- 60 Relume traffic case sign panel inserts
- 4 Relume four-sided information kiosk LED integral circuit board inserts

Benefits:

- 81% savings on annual electric costs vs. traditional metal halide fixtures
- Annual energy use savings of 430,780 kWh
- 10-15 year lifespan of new LED light engines vs. 2 year lifespan of traditional fixtures
- Reduced carbon emissions
- Increased light levels for enhanced business district safety
- \$60,628 annual material and labor and maintenance savings
- \$82,372 total annual savings

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Project Overview

Pedestrian-Scale Decorative Streetscape Fixtures

The conversion of 536 existing metal halide and high-pressure sodium decorative luminaires located in the Downtown Battle Creek Central Business District, Riverwalk and Lakeview Shopping district with LED light engines represents the most significant portion of the project.

A Relume 56-watt LED light engine was developed to retrofit 338 existing 100-watt (125 system watts) metal halide Lumec "New Westminster" fixtures located in the downtown Battle Creek Central Business District. In addition, Relume retrofitted 198 100-watt high pressure sodium "Acorn" and "Shepherd's Crook" style fixtures located along the downtown Battle Creek Riverwalk, on Capital Avenue and in the Lakeview neighborhood shopping district.

These upgrades provided increased light levels, superior color rendition, and heightened visibility; the LED retrofit resulted in savings of 237,842 kiloWatt hours with annual electric cost savings of \$13,795 and annual material and labor maintenance savings of \$54,506.



Illuminated Street Name Signs, Left Turn Signs and Information Kiosks

This portion of the project retrofitted 82 existing overhead fluorescent street name signs, 60 existing overhead incandescent left turn case signs, and 4 four-sided fluorescent, illuminated information Kiosks with new custom-engineered Relume LED light engines.



The conversion reduced the energy consumption of the street name signs from 106 to 46.5 watts, the left turn cases signs from 250 to 156 watts, and the information kiosks from 675 watts to 400 watts, for a total kilowatt hour reduction of 192,938 producing annual electric cost savings of \$7,949 with annual material and labor maintenance savings of \$6,122.

The illuminated street sign and decorative streetscape lights utilize Relume Technologies' patented LED integral Silver Circuit™ boards, which employ the Cree XRE 7,000-degree Kelvin color temperature LEDs, and an advance transformer power supply. With a projected life of 70,000 hours, the new lights are expected to have a useful lifespan of at least 15 years, versus two years for the existing lighting systems.

"The decision to convert lighting to LED will help Battle Creek reduce its carbon footprint and overall costs."

Michelle Reen

City of Battle Creek, Assistant to the City Manager