

CASE STUDY

Exterior LED Lighting



Exterior lighting takes many forms today: from commercial and public parking lots (left) to public streetlighting (right) — and in nearly all instances, the technology of choice has become LEDs, for which the DTE Energy Efficiency Program for Business offers as many different incentives as there are practical applications.

One of the primary responsibilities of government and business is to spend money wisely — while providing the best possible services to community residents or retail consumers.

Fortunately, Michigan municipalities and commercial businesses have discovered that using the DTE Energy Efficiency Program for Business is an ideal way to tackle an important area of costs: energy.

Working with DTE energy efficiency advisors, both government officials and business owners have been able to control energy consumption through more efficient exterior lighting in parking structures and lots, on

buildings and on city streets — saving money now and into the future.

And by receiving cash incentives from the DTE program for the installation of energy-efficient LED lighting, both public and private sectors decision makers have been able to reduce the initial investment cost for making those improvements.

Inside is a look at one Michigan city (Warren) and a Michigan business (Roy O'Brien Ford) that have taken advantage of the program — and how the incentives they received for new lighting upgrades helped offset their capital costs.

DTE customers use incentives to help upgrade their exterior lighting

Warren

Lighting upgrades not only saved energy and money; also improved resident safety

Over a three-year period, the city of Warren took one of the most aggressive approaches to energy efficiency in Michigan: two dozen individual projects that range from simple lighting upgrades to LED streetlight conversions.

For those projects, the city received nearly \$65,000 in incentives from the DTE Energy Efficiency Program for Business.

Three projects in particular stand out as prime examples of the city's implementation of energy-efficient lighting retrofits:

- The 2011 installation of CFLs, exterior lighting upgrades, LED exit signs and occupancy sensors took place in the community's two senior citizen housing facilities.
- The 2012 upgrade to lighting in the City Hall parking structure involved converting nearly 180 175-watt HIDs with 80-watt induction lamps and lighting controls.
- The 2014 streetlighting conversion — from mercury vapor and high pressure sodium lamps to LEDs.



Warren's projects have included installing new LED street lights (top right) and lighting upgrades in its senior housing center (above) and City Hall parking structure.

Taken as a whole, DTE incentives offset nearly 18% of Warren's investments in its facilities — a point not lost on Sean Clark, the city's CitiStat coordinator.

"DTE incentives played a large role" in these projects, he said. "(They) helped reduce the project costs and return on investment, to make the projects more attractive and financially viable.

"Along with an Advanced Lighting Technology Demonstration grant

from the state of Michigan, DTE incentives helped lower the investment by the city.

"These added incentives helped reduce the city's return on investment to three years," he said, adding that the city already has experienced savings of more than \$27,000 a year in energy costs — as well as other savings through "reduced maintenance costs."

In addition, the new lighting "provided a more efficient and higher quality light, without the flickering and strobing — and without the noise," he said.

In particular, "the new lighting has improved our senior citizen center with brighter and more reliable lights, providing a safer parking lot for our residents."

Other substantial savings can be found in the city's on-going installation of LED street lights to replace older Mercury vapor and high pressure sodium fixtures.

"Under the leadership of Mayor James Fouts, our city has budgeted about \$2 million over a five-year period to install almost 12,000 new lights in our city," Clark said.

Because of the use of DTE incentives the city expects a payback period of a little more than seven years — and an annual savings of \$500,000 in energy costs.

With that kind of savings what would Warren officials tell other Michigan communities?

Actually, "Mayor Fouts already has urged other municipalities to follow Warren's lead — both in published interviews and in an interview he did on National Public Radio."



And what was that message?

"Work with your DTE representative to analyze potential program incentives and cost reduction projects," Clark said. "Then clearly express what your city's goals are and allow DTE to help tailor a program to meet those goals."

WARREN LIGHTING PROJECTS SUMMARY

PROJECT	ELECTRIC SAVINGS*	INCENTIVES
Senior Citizen Center	103,020 kWh	\$12,438
City Hall Pkg. Structure	285,419 kWh	\$22,816
Streetlighting upgrade	902,110 kWh	\$29,099
Total	1,290,549 kWh	\$64,353

*First-year estimated kWh savings

Roy O'Brien Ford

Upgrading to LEDs was the perfect solution for showcasing dealer's vehicles in the best light

Always on the cutting edge of technology, Roy O'Brien Ford took advantage of incentives available from the DTE Energy Efficiency Program for Business to add state-of-the-art LED lighting to several exterior applications.

One project involved the installation of 80 lights and fixtures throughout the dealership's parking lots and outside its service bays, providing an average of 84% in annual energy savings.

In addition to the energy savings, the dealership now enjoys improved lighting quality and a fuller light spectrum — which illuminates the dealer's vehicles at their most appealing.

Thanks to the program's incentives and the energy savings, Roy O'Brien Ford will recoup its project expenses in about two years.

For any car dealer, showcasing vehicles is paramount — especially at night, but it wasn't simply about illuminating the cars; it was to ensure that their color and luster were consistently shown in the best possible light — day or night.



The exterior LEDs in the dealer lot (left) and along the building (above) provide both greater visibility and security.

To achieve this result, the existing 1,000W HID lights were replaced with an equal number of 200W LED units, which provided an 81.5% reduction in energy consumption.

That same approach — mixing efficient lighting with the right color balance — was applied to the dealership's service bay area.

Along this wall (right), 400W wallpack units were replaced with an equal number of 50W LED units — providing an 89% reduction in energy consumption, while making the area safer at night.

ROY O'BRIEN FORD LIGHTING PROJECT SUMMARY

PROJECT	ELECTRIC SAVINGS*	INCENTIVES
LED replacing HID	279,444 kWh	\$22,356

*First-year estimated kWh savings

About our Program

The DTE **Energy Efficiency Program for Business** offers a comprehensive set of incentives for both electric and natural gas users designed to help you invest in energy efficient technologies.

Here are three ways to save:



PRESCRIPTIVE

Are you replacing light fixtures with newer energy-efficient models?

Upgrading your refrigeration and food service equipment?

Check out the **Prescriptive Incentives** section of our Catalog and Application.

Prescriptive Incentives cover a wide variety of energy-efficient improvements, including: lighting, controls, HVAC, refrigeration and more. Incentives are based on quantity, size and efficiency of the equipment.

- Prescriptive incentives are available for many common energy efficiency measures.
- Incentives are based on predetermined energy savings.
- Prescriptive incentives typically average 20% to 50% of the incremental cost of the equipment or services provided.

CUSTOM

Can't find your project in the Prescriptive Incentive section?

Then consider applying for **Custom Incentives**, which are for projects that involve less common or more complex technologies than our list of prescriptive equipment.

Custom Incentives are based on the first year of energy savings (kWh and/or Mcf).

- Custom incentives are offered for capital investment projects that are NOT eligible for a Prescriptive incentive.
- Incentives are determined on a case-by-case basis and are paid per unit energy saved.
- Custom incentives are capped at 50% of project costs.

NEW CONSTRUCTION

Are you building a new facility, changing the usage of space or adding load? Then our **New Construction and Major Renovation Incentives** are available to assist you:

- **Systems Approach** incentives are predetermined to optimize the energy efficiency of individual systems.
- **LEED Whole Building Approach** incentives are based on energy savings validated by LEED.
- **LEED Design Review Assistance** incentive is designed to encourage LEED certification.

- **New Construction/Major Renovation** incentives are available for new facilities, the renovation of existing facilities or a change of use project, such as converting a warehouse into an office complex.
- Incentives also are available for adding load.

Contact Us

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*Funds will be awarded on a first-come, first-served basis; program based on availability of funding and may end at any time; certain other conditions apply