CARBON REDUCTION PROGRAM
DTE STEETLIGHT LED CONVERSION

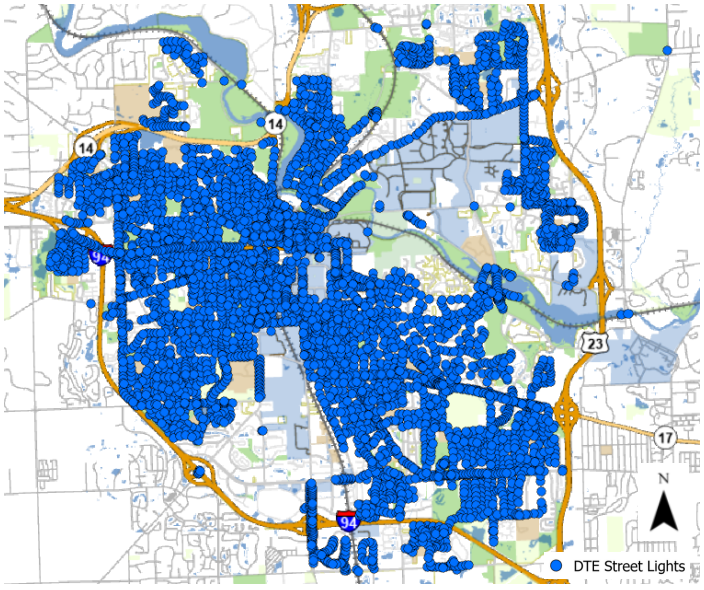
GOALS

- More than double the energy efficiency of streetlights by converting to LED
- Improve streetlight reliability for safety and quality of citywide pedestrian environment
- Eliminate the burden of inefficient lighting on city operational resources

YEAR	CRP Request	CO2 Saved
FY 2024	$980,000 ($245,000, 20% local match)	3,417.44 kg/day

PROJECT DESCRIPTION:

The DTE Streetlight LED Conversion project will replace over 4,000 low efficiency HID Mercury Vapor and High Pressure Sodium streetlight fixtures with high-efficiency LED streetlight fixtures. The replacement LED fixtures will be 1.2 to 3 times more efficient than their predecessors. For the project to proceed the City of Ann Arbor will participate in a portion of the construction cost for new fixtures installation. The installation is simple, requiring no design or electrical reconfiguration. All fixtures will be converted in a single year.



CARBON REDUCED:

DTE has partnered with the City of Ann Arbor to develop a cost estimate for converting all remaining 4,087 low-efficiency streetlights to high-efficiency LED fixtures. To perform these conversions, DTE requires the City of Ann Arbor share in the construction cost.

A breakdown of each conversion type is displayed below, listing the quantity of the type of conversion, the current lighting type, the proposed LED conversion, and the kWh saved each year. The complete cost estimate is included in the application package.

ANN ARBOR MOVING TOGETHER TOWARDS VISION ZERO

A2ZERO EQUITABLE • SUSTAINABLE • TRANSFORMATIVE

SEMCOG

Overhead Fed Streetlights on Wood Poles:
4-175w Mercury Vapor to 58w LED (2,469.6 kWh saved)
1 - 250w Mercury Vapor to 136w LED (646.8 kWh saved)
1 – 70w High Pressure Sodium to 58w LED (155.4 kWh saved)
2065 – 100w High Pressure Sodium to 58w LED (693,840 kWh saved)
1 – 150w High Pressure Sodium to 58w LED (546 kWh saved)
201 – 250w High Pressure Sodium to 136w LED (134,227.8 kWh saved)
7 – 400w High Pressure Sodium to 206w LED (7,614.6 kWh saved)
1 – 70w Metal Halide to 58w LED (155.4 kWh saved)
Underground Fed Streetlights on Fiberglass or Metal Posts:
124 – 100w High Pressure Sodium to 64w LED (38,539.2 kWh saved)
2 - 100w High Pressure Sodium to 39w LED (831.6 kWh saved)
96 - 100w High Pressure Sodium to 54w LED (Lumecon-Ball of Fire) (33,868.8 kWh saved)
684 – 100w High Pressure Sodium to 58w LED (229,824 kWh saved)
861 – 250w High Pressure Sodium to 136w LED (574,975.8 kWh saved)
39 – 400w High Pressure Sodium to 206w LED (42,424.2 kWh saved)

Totaling the annual kWh saved by these conversions adds up to 1,760,119 kWh of energy saved. Using the EPA Greenhouse Gas Equivalencies Calculator, this is equal to 1,247,366 kg/year of CO2 saved or *3,417.44 kg/day* of CO2 saved.

BENEFIT TO CITY AND REGION:

One of the specific goals of A²Zero, Ann Arbor's Carbon Neutrality Plan, is to improve energy efficiency across the city by transitioning all of Ann Arbor's public streetlights and traffic signals to LED lights by 2030. Energy efficiency is an under-recognized but very effective method of reducing ongoing energy waste. Energy waste distorts the dedication of city resources towards the operation of inefficient equipment rather than other city and regional priorities.

This project also aligns with the Ann Arbor's Moving Together Towards Vision Zero transportation plan's goal to increase safety and security for all people walking and biking in the city. The DTE-owned streetlights, with older, less-efficient bulbs are less reliable than the City's other streetlights. They are the subject of a disproportionate number of complaints and service calls. Unreliable lighting contributes to a darker, less inviting evening public environment across the city.

Once these lights are replaced, they will bank the efficiency in perpetuity. Until a superior, more efficient lighting technology is available to make further efficiency gains, these bulbs will continue to use less energy, night after night, taking a significant and measurable slice of emissions and needless energy demand off the region's air quality budget. Furthermore, this may serve as a demonstration project for other governments throughout Southeast Michigan with DTE streetlight assets to make the same efficiency gains without extensive design and construction phases.

ANN ARBOR MOVING TOGETHER TOWARDS VISION ZERO A²ZERO EQUITABLE · SUSTAINABLE · TRANSFORMATIVE SEMCOG