

Ann Arbor Streetlight Policy and Establishment of a Streetlight Offset Program (SOP)

1. Purpose

This policy is intended to provide guidance in the decision-making of streetlighting in the City of Ann Arbor under the streetlight moratorium effective as of the City's FY2006 fiscal year. The current inventory of over 7,400 streetlights in Ann Arbor consists of approximately 2,200 City-owned lights for which the City pays a monthly rate for energy only, and approximately 5,200 utility-owned lights, for which the City pays a monthly rate for energy, operation & maintenance and depreciation. These streetlight expenses are funded by the City's General Fund, and the rates charged by DTE are subject to change, normally escalation. Therefore, it is desirable to have a policy document in place to guide any furthering of streetlighting in the City while managing the costs of the system and the resulting budget impacts.

2. Background

The Michigan Public Service Commission (MPSC) approves streetlight rates for the utility (Detroit Edison - DTE) serving Ann Arbor. The expenses charged to the City to power each streetlight are determined through a monthly rate system that varies based on the wattage, type, and wiring of the circuit powering the streetlight. As with electricity rates in general, the costs for streetlighting regularly increase. Underground wired streetlight rates are often nearly double the rates for overhead wired streetlights.

Adding new streetlights is a cost to the City's General Fund. These costs are on top of regular, concurrent increases in electricity costs. The regular increase in the expenses associated with DTE streetlighting led to a moratorium on new streetlights in the spring of 2005 to control those costs. Due to the energy savings consistent with City sustainability goals, and reduced costs of maintenance and energy, the City has converted nearly all City-owned streetlights to high-efficiency light emitting diode (LED) as a further means to contain costs. For additional background see *Ann Arbor Streetlights Whitepaper, Prepared by Systems Planning Unit, September 2013*.

3. Streetlight Offset Program (SOP)

The Public Services Area's Field Services and Systems Planning Units will pursue, on an ongoing basis, opportunities to accommodate areas found to be suitable for additional streetlights through a process hereafter called the Streetlight Offset Program ("SOP").

To sufficiently contain the costs of adding streetlights, a system of offsetting costs will be used. Offsetting in the SOP means that any new streetlight brought into service must have a net-neutral effect on costs, relative to a baseline set as *the totals in place during the start of fiscal year 2015, excluding inflationary rate increases*. This can potentially be achieved with lower wattage LEDs replacing older, high intensity discharge (HID) streetlights (e.g., high pressure sodium and mercury vapor technology) but not in every instance. Therefore, offsetting may mean that to accommodate any additions to the system while controlling new costs, streetlights

elsewhere in the system will be removed. Removed fixtures would be in areas determined to be over lit, relying on guidance from recommended practices in the ANSI Approved RP-8-00 from the Illuminating Engineering Society of North America (IESNA) and the City's Public Services Department Standard Specifications specifying streetlight placement.

As stated, streetlights removed as a result of the SOP will be accounted for and the cost-savings recorded in relation to the total cost and energy baseline set at the start of FY2015. To add any additional streetlights, a savings "reserve" must accumulate in relation to the baseline. Various activities described in the Appendix have the potential to expand the savings reserve.

If accumulated savings from removals and other activities in comparison to the FY2015 baseline creates a reserve, a request can be made for additional streetlights. Due to the varied rates charged for individual streetlights based on wattages and type, in the initial phase of the SOP Public Services staff will review and determine removals and additions on a project-by-project basis. Adding streetlights will cease at such times when the accumulated SOP reserve has been depleted. The ability to add streetlights and carry out the SOP may be constrained, or require modification, if there are changes to tariff rules governing DTE's billing to the City; the policy or the accounting system developed may require modification at such times.

Whenever possible, new streetlights added within the constraints of the FY2006 moratorium and the newly established Streetlight Offset Program will be owned and maintained by the City.

New streetlights shall be IDA Dark Sky Compliant.

4. Requests for Streetlights

Citizens or entities believing an area to be under lit can submit a request to the Public Services Area (streetlights@a2gov.org) for new streetlighting. If there is an available reserve from the Streetlight Offset Program that has yet to be absorbed, Public Services staff will consider the appropriateness of additional lighting. If at the time there is not an accumulation in the reserve, the request will not be considered until a surplus in the reserve re-accumulates. If multiple requests are under consideration, they will be compared and prioritized using a prioritization model tool, similar to that used for prioritizing needs in the Capital Improvements Plan (CIP) process. Any new light added will be owned and maintained by the City at the lowest cost rate. Presently this rate is the "Option III/Energy Only," within the MPSC approved DTE Electric Company Rate Book. Public Services will determine the appropriate measures to address and prioritize requests.

Residents may, at any time, request a privately-owned light through DTE's Outdoor Protective Lighting (OPL) program. Costs vary by year and all arrangements are through DTE. At the time of this writing, requests should be made to DTE by calling: 1-800-477-4747.

5. Requests to Remove Streetlights

Perceptions of streetlighting vary widely, from those who find that streetlights contribute to real or perceived safety of an area, to others who find streetlights intrusive or even disruptive to quality of life. Since the SOP is designed as a net offset mechanism, individuals or entities may

request the removal of a streetlight if an area is determined through evaluation by Public Services to be over lit. In order to implement streetlight removal(s), a process similar to the Traffic Calming Program to achieve neighborhood consensus on the removal will be performed and completed. Savings resulting from removals will be added to the SOP reserve.

6. Cost Ratios of City (LEDs) to DTE (HIDs) Streetlights

The following represents non-depreciated, annual labor and energy cost estimates of City LEDs compared with DTE-owned HID (Mercury Vapor, High Pressure Sodium) streetlights. Actual ratios relating to the SOP (such as removal of HID lights to accommodate additional LEDs) may differ on a project-by-project basis. The ratios illustrate how adding new (LED) streetlights at a higher proportion to the system can be accomplished with the appropriate displacement of existing streetlights remaining in the DTE-owned inventory. Presently, streetlights on underground circuits are more costly on a rate basis than rates for streetlights on overhead circuits.

- Overhead circuit fixtures:
2.7 City LEDs annual labor and energy cost = 1 DTE Fixture
Based on the on the following:
 - 2.9 LEDs per 175 watt Mercury Vapor cobrahead
 - 2.4 LEDs per 100 watt High Pressure Sodium
 - 2.7 LEDs per 250 watt High Pressure Sodium
- Underground circuit fixtures:
4.6 City LEDs annual labor and energy cost = 1 DTE Fixture
Based on the on the following:
 - 4.4 LEDs per 100 watt High Pressure Sodium
 - 4.8 LEDs per 250 watt High Pressure Sodium
- Underground circuit Decorative/Globe fixtures:
6.5 City LEDs annual labor and energy cost = 1 DTE Fixture

NOTE: there are other wattage fixtures in the streetlight inventory, but the above capture the bulk of DTE streetlight types.

The ratios remove upfront capital and do not factor costs for purchase and installation (see Section 7). Due to changing rates and other cost factors, ratios will be reevaluated on a regular basis by Public Services staff.

7. Funding Mechanisms

7a. *Special Assessment.*

As with any new City improvement, including streetlights, in areas without streetlights where property owners wish to add them under the constraints of the SOP, the costs associated with the streetlight installations should be borne by the property owners, and those costs may be financed through special assessment. Due to administrative costs, only areas of a significant scope will be special assessed for the capital expense of erecting new streetlighting. The City Assessor and Public Services staff will determine

whether or not a project is considered significant for the purposes of special assessing, following typical cost thresholds used by the Assessor.

7b. Road Reconstruction and Resurfacing Projects

When a road is scheduled for reconstruction or resurfacing, or work is to be performed within the right-of-way, Public Services will explore the replacement of existing streetlights with efficient replacements as a cost to the project or through federal STP-U funds administered through the Michigan Department of Transportation (MDOT). Funding streams vary on a project-by-project basis, but when funds allow for the addition of replacements to the City inventory to replace utility-owned streetlights, cost savings will be applied to the SOP reserve.

For road projects impacting existing DTE streetlights (such as temporary streetlight relocation during construction), if circumstances do not permit the transfer of streetlights from DTE-owned to City-owned, the project will explore the potential of funding the conversion of DTE lights.

8. Emerging Non-Grid Technologies

Public Services will explore emerging off-the-grid opportunities such as solar streetlights that may enable increased lighting while adding minimal maintenance costs to the General Fund within the constraints of the SOP.