Municipal Street Lighting: 10 Tips for Local Governments

Street lighting is often a local government's biggest energy expenditure and the most widespread and visible service that local governments provide.

Many local governments pay too much for street lighting and get bad service because investor-owned utilities control their streetlights. Information is power, however, and knowing what you should expect and how to get it from your utility can greatly improve your outcomes.

We draw on the 5 Lakes Energy team's extensive experience advocating street light issues and intervening in rate cases on behalf of local governments. Contact us for more information or help with these ideas, or anything else streetlight related.

Own your streetlights.

If you own your streetlights, you need to buy only electricity from your utility. Municipalities that own their lights typically:

- Save 50% or more compared to utility tariffs
- Enjoy superior reliability and faster outage restoration
- Can add advanced lighting controls and smart-city functions that multiply benefits of LEDs.

Retain ownership of whatever lights are already municipally owned, and whenever financially feasible buy out utility lights or replace them with new, municipally owned lights. Don't worry about managing them – competitive-market lighting contractors can maintain your streetlights for less than utilities charge. 5 Lakes can help with ownership conversion discussions and sorting out how to manage municipally owned lights.

Stop letting your utility repair and maintain old-technology streetlights. Insist that any HID service visit result in LED conversion.

High-intensity discharge (HID) lights – such as high-pressure sodium and mercury vapor– use too much electricity, require more-frequent, costly service visits than LEDs and provide lower-quality illumination. While it may be counterintuitive to discard an HID luminaire that only needs a new lamp installed, doing so only triggers another very expensive (typically $400) service call in five years to replace the lamp yet again, and excessive electricity use until then. Converting to LEDs saves so much money in reduced maintenance that costs of early retirement of the HID light are quickly recouped.

Don't overpay for LED conversions.

Where regulated utilities commonly spend $700-$1000 per converted fixture, competitive-market lighting providers charge customers $200-$300. Utilities don't have to compete with market pricing when converting lights they own. The customer ultimately pays these costs, whether through up-front fees or bundled into rates.

It may feel like you have no negotiating leverage to reduce conversion costs proposed by your utility, but many times we have seen customers work out a much better deal simply because they know what a reasonable cost looks like. The 5 Lakes team can help analyze and negotiate conversion proposals to ensure your utility uses a cost-effective technical, planning, and operational approach to conversions and to get you a deal closer to competitive-market costs.

LEDs provide superior lighting if properly designed – and they often aren't.

To save time and money, utilities often assume that a new LED should be a simple lumen replacement of an HID fixture. This cookie-cutter approach fails to recognize that:

- LEDs lose fewer lumens inside the fixture and to uplight, backlight and glare;
- LEDs offer more light distribution patterns than HIDs, which should help ensure that that targeted area – and nowhere else – receives illumination.
- LEDs emit a broader spectrum of light that requires fewer lumens than HIDs to support visual tasks of roadway users ("color rendering index" or CRI).

Without proper design and luminaire specification, utilities will often over-illuminate with LEDs that cost too much to buy and energize and may compromise roadway user safety by creating glare and contrast problems. 5 Lakes can help you evaluate LED conversion proposals to help optimize lighting quality and cost savings from your new LEDs.

Ask your utility to install LEDs with networked lighting controls rather than retrofit later.

Networked lighting controls can pay for themselves and deliver higher quality and more reliable lighting – but the payoff is much faster if they are installed at the same time as new LEDs rather than retrofitted later. Return visits for the sole purpose of retrofitting will cost hundreds of dollars per fixture, a very steep cost for a component that generally costs only $10-$20.

The cost of networked lights is justified by improved reliability and reduced O&M costs, even without immediately installing cutting-edge functions many users aren't ready to commit to. By instantly knowing about outages, and generally even knowing their cause, the utility can reduce outage occurrences, durations, and response costs. Networked lights can also implement programmed dimming, which reduces electricity costs and extends fixture service life. Studies show that roadway users do not notice LED dimming up to 20%, and some cities are dimming lights even more than that late at night when fewer people are out and about.

Outages probably last much longer than your utility reports.

Research and data suggest that the average streetlight outage goes unreported for three to four weeks. Adding the time it takes for the utility to restore service after receiving the report suggests actual outage time averaging one month – far more than the three to eight days utilities typically report. Thus, it is imperative for both utilities and customers to use technology and management practices to identify outages faster. For their part, customers should track, report, follow-up and seek bill credits as much as possible to hold the utility accountable for service quality and reliability. 5 Lakes can help you track outage data, hold your utility accountable for effective management and technology practices, and seek bill credits for outages.

Verify outage restorations

Utilities make various errors in their outage tracking and resolution reporting, which in the absence of networked controls can be caught promptly only by visual follow-up inspection. You should request regular outage reports from your utility and drive past lights (after dark) that the utility has reported as fixed. Some municipalities recruit police and public works staff for this task. Tracking outages also gives you data to establish accountability and support requests for bill credits.

Don't pay for streetlights that aren't working.

We raise this point mainly to highlight that many utilities think there is nothing wrong with continuing to charge you when their equipment fails to deliver the light you are paying for. If you don't rigorously track outages and confirm (or dispute) restorations, and if you don't ask for bill credits at every opportunity, your utility will face little incentive to take responsibility for maintaining and monitoring its own equipment and will respond only when you or a community member let them know their equipment is not working.

Other electricity customers don't pay when they receive no service – because their meters stop running. Expecting lighting customers to keep paying merely because there is no meter record of service interruptions prioritizes the utility's convenience over the customer's rights.

You are being overcharged – probably

Because utilities generally don't have precise data about lighting deployments, bills often contain errors. Common errors include billing the wrong customer for lights, billing for non-existent lights, and billing for the wrong luminaire type or wattage. Periodically reconcile your bill to your actual streetlight deployment, using a field inventory built upon whatever data the utility can provide. Some consultants offer lighting audit services compensated only by value of billing errors they find. Alternatively, you can ask the utility to prepare a whole-system LED conversion proposal, which will start with a field inventory of existing lights that you can easily compare to your bill(s).

Utility lighting bills are hard to read, hard to compare to published tariffs, and hard to reconcile to your actual lighting deployments. Furthermore, many municipalities receive multiple street lighting bills from their utility at different times of the month, making it hard to compile and reconcile bills to each other. The 5 Lakes team's experienced eyes can quickly spot potential areas of concern in your bills and figure out where and how to dig deeper.

Fight excessive relocation and removal costs – you probably have already paid for them

Cities have various reasons to move or remove lights. Needed changes are difficult to make when utilities can charge very high fixture removal rates – commonly 10x the annual tariff for a fixture. Keeping unwanted lights creates inefficiency, but removal fees may also be unfair because customers pre-pay substantial removal costs as part of their monthly tariff – though many don't know it. Many utilities, including those in Michigan, don't credit these "net salvage value" payments toward costs when a customer requests relocation or removal, applying the funds only toward routine utility asset replacement costs. Particularly if a light or pole is old and would need to be removed and replaced soon anyways, urge your utility to apply all those years of net salvage payments toward the removal cost.

Use these tips to identify and diagnose potential problems with your streetlight service and costs, and to hold your utility accountable for providing solutions. Because the utility has a lot more technical knowledge and staffing capacity, you may feel that your discussions with them are not on a level playing field. 5 Lakes Energy can provide advice, support you with targeted consulting services or help you find other providers to address your needs.

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