



Massachusetts Municipal Association

MMA BEST PRACTICES SERIES

Recommendations for Effective Local Government Administration and Management from MMA Policy Committees

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MMA Policy Committee on Energy and the Environment Best Practice Recommendation: Municipal Exterior Lighting Conversions

BEST PRACTICE: Municipalities can promote energy-efficient lighting practices, decrease environmental impacts, and reduce costs in their communities by adopting the International Dark-Sky Association's recommendations related to municipal streetlight and area-lighting conversions.

Municipalities are converting exterior lighting to LEDs at increasing rates, whether by first purchasing their streetlights from investor-owned utilities and then converting to LEDs, by working with utilities to convert to LEDs while the utility maintains ownership of the infrastructure, or as a municipal light plant. During the conversion process, municipalities can make choices that further promote energy efficiency and reduce costs, decrease negative environmental impacts, and benefit public health.

The following best practices associated with LED conversion are recommended by the International Dark-Sky Association:

- Use fully shielded exterior lighting in new or replacement installations. Fully shielded light fixtures emit all of their light downward. This helps protect drivers and cyclists from potentially-dangerous glare, directs light to where it is needed most, and reduces the impact of light pollution on the natural environment.
- Use lighting with a correlated color temperature (CCT) of no greater than 3,000 kelvins. LEDs contain high levels of blue light in their spectrum, which can have negative impacts on environmental and public health, particularly circadian rhythms in human and animal populations. Municipalities converting external lighting to LEDs are advised to select a color temperature no greater than 3,000 kelvins to lessen the negative impacts of harsh blue light.
- When possible, install dimming features that allow municipalities to better control the brightness of external lighting during different times and in different locations. Dimming enables municipalities to be more energy-efficient with external lighting while reducing costs and protecting environmental and public health.

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Dozens of Massachusetts municipalities have taken steps to convert their street- and area lights to LEDs and have made choices that align with these recommendations. For example, the city of Pittsfield last year completed an LED conversion process on 5,372 streetlights. The city selected fully shielded fixtures approved by the International Dark-Sky Association and bulbs with a color temperature of 2,700 kelvins. The city shared the costs of the conversion process between its own capital budget and incentives from its electric utility and a regional planning agency. The city estimates that its annual streetlight operating costs will be cut in half.

Municipalities and other government entities in Massachusetts have access to the MMA's MunEnergy program. Through Constellation, the MMA-endorsed supplier for the MunEnergy program, cities and towns can manage their energy costs and spread out the cost of energy-saving programs, such as LED conversions. Through Efficiency Made Easy, communities can work with approved suppliers to fund the cost of LED conversion across the life of their MunEnergy contract. This option allows communities to avoid the bid process and go directly through a trusted partner, avoiding upfront capital costs and quickly recognizing energy savings.

Resources:

- International Dark-Sky Association: www.darksky.org
- Constellation's Efficiency Made Easy program through MunEnergy helps Essex: tinyurl.com/ConstellationEssex
- City of Pittsfield Streetlight LED Conversion Project: tinyurl.com/PittsfieldLED
- MMA's MunEnergy Program: www.mma.org/munenergy
- Metropolitan Area Planning Council LED Streetlight Retrofit Program: www.mapc.org/our-work/expertise/clean-energy/led-streetlight-retrofits