



FROM



TO

ONE TOWNSHIP'S EXPERIENCES CONVERTING TO LED STREETLIGHTS

North Coventry Township, Chester County, PA, recently completed the process of replacing all of its street lights, some mercury vapor and some high pressure sodium, with new LED fixtures, with the aim of providing enhanced roadway safety while at the same time providing more comfortable, efficient and reliable street lighting, at considerably reduced energy and maintenance costs.

The township's street lighting had evolved over many years, with the earliest lights being bare-bulb mercury vapor fixtures. They were very inefficient in directing their light onto the pavement where it was supposed to be. They were very also very inefficient at converting the electricity they consumed into light. The bulbs seldom if ever burned out but rather just kept getting dimmer and dimmer over time, to the point where the lamps just glowed, putting little or no light on the pavement. As the years progressed from the earlier installations, the mercury vapor technology was replaced by high pressure sodium, a much more efficient source with superior lamp life, but one which gave off a light whose color made objects, especially vehicles, to be a washed out color and therefore harder to recognize. Energy costs and maintenance costs to replace lamp burnouts was hard on the municipality's budget and presented potential safety hazards with bulbs burning out at busy intersections. In 2015, the Township was presented with an opportunity to consider conversion of the street lights to LED when a grant was offered by the Commonwealth of Pennsylvania by Department of Community and Economic Development. The township installed a few LED fixtures to assess their merit and it soon became evident that the cold bluish glare-producing LEDs were going to be a step in the wrong direction for this predominantly residential community. To add to that, although LED technology had taken the lighting industry by storm, some of the claims being made about service life and reliability were not being achieved. About a year later, after continuing to monitor the progress in LED technology and the availability of lamps that emitted a warmer-colored, less glary light, more suitable for residential settings and drivers, the township leaders decided to take the plunge and proceed with the conversion to LED.

To get the ball rolling, an inventory was made of all installed street lighting and note was made of all street lights located in residential settings. While LED street lights do a wonderful job of distributing their light onto the pavement, where it belongs, they also present the problem of transmitting their light forward, and if care is not exercised, they can project their output into the windows of homes, something the township wanted to avoid to the extent possible. At those locations where streetlights were directly across from residences, they were designated to be tilted down an appropriate amount to minimize the possibility of glare and light trespass into adjacent homes. In addition, while in many cases the street lights they replaced had done a very poor job of putting the light on the pavement in accordance with pavement width and pole spacing, the LED replacements were selected to have light distributions tailored to specific sites, with light-beam categories such as long and narrow, wide, or round patterns. 2700K lamps that emit light having a rather warm appearance were selected for the residential areas and 3000K lamps having a somewhat cooler appearance were selected for the busier roads and intersections, where residences were not involved. Street lights were selected that satisfied all of the township's stipulations for color temperature, shielding, efficiency and reliability. Bids were solicited, received and evaluated

and a contract awarded. A meeting was held with the successful installer to assure that what the township expected would be what it got.

After waiting somewhat nervously for several months after the conversion was completed, and not receiving a single complaint of "light in my bedroom window," or "there's not enough light at this intersection," the township leaders breathed a sigh of relief with the knowledge that because of the new lighting, their roads are now safer, their electricity bill is lower, their maintenance costs and outages are diminished, all without citizen disruption.