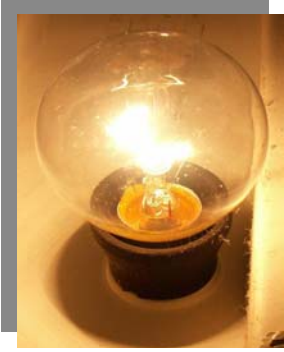
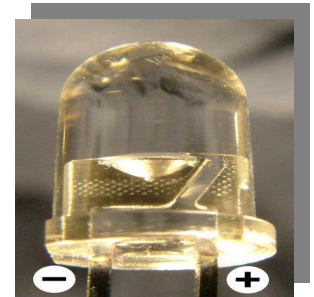


## Traffic Signal Conversion to LED



SPC and PennDOT have established a regional traffic signal program that includes education, outreach, funding, and technical assistance to municipalities in Southwestern Pennsylvania to encourage conversion from incandescent light bulbs to light-emitting diodes (LED) in their traffic signal installations. The primary reasons for converting to LED are reduced energy consumption (typically 80-90% less electricity used) and lower energy and maintenance costs; however there are other safety and congestion benefits that accrue as a result of these projects.

LEDs typically last 5-10 years, whereas incandescent bulbs often have to be replaced on an annual basis. This means fewer temporary lane closures and traffic interruptions due to equipment and personnel needing to be in the intersection doing bulb replacements. LEDs have the added advantage that when they burn out, they usually do so one LED (or a few) at a time. This gives maintenance personnel some advance warning that a module needs to be replaced, which allows for the work to be scheduled during off-peak times when it will cause the least disruption to traffic. With incandescent bulbs there is often no advance warning of a burnout, which forces maintenance personnel into a more reactionary response mode whenever a failure occurs.



Another benefit of LEDs is that they use such a small amount of electricity that battery back-up systems can be installed to operate the intersection in the event of a power failure. This helps to prevent the non-recurring congestion that can be caused when a signal is out of service, in which case the intersection reverts to a four-way stop condition. It can also alleviate the need for maintenance personnel to haul generators out to each intersection to operate the signals during power failures or for police forces to direct traffic. In addition to providing congestion relief, this can also be very important in the event of a storm or other incident where maintenance and police forces are often needed for other tasks.

