

Bringing the True Cost of Lighting to Light

Introduction



For as long as we've illuminated our world, lighting has been a disposable commodity. Conventional lamps and ballasts inevitably fail and require replacement, while fluorescent and HID technologies require EPA-mandated hazardous-waste disposal for toxic materials. The tasks needed to maintain conventional lighting systems often involve participation by individuals across many levels of an organization, with each "touch" adding overhead cost to the process. With the advent of long-lasting LED lighting, these hidden maintenance costs should be calculated and considered when evaluating lighting system upgrades.

How Many People Does It Take to Change a Light Bulb?

When large companies go to "change a light bulb," it's no laughing matter. The fact is, lighting maintenance is expensive, and more companies are waking up to the unnecessary and costly waste generated by maintaining conventional lighting systems in lieu of today's alternatives with LED solutions. But even companies that think they have a handle on their lighting maintenance costs often overlook some considerable direct and indirect overhead costs for what has always been "business as usual."

A Convenient Example

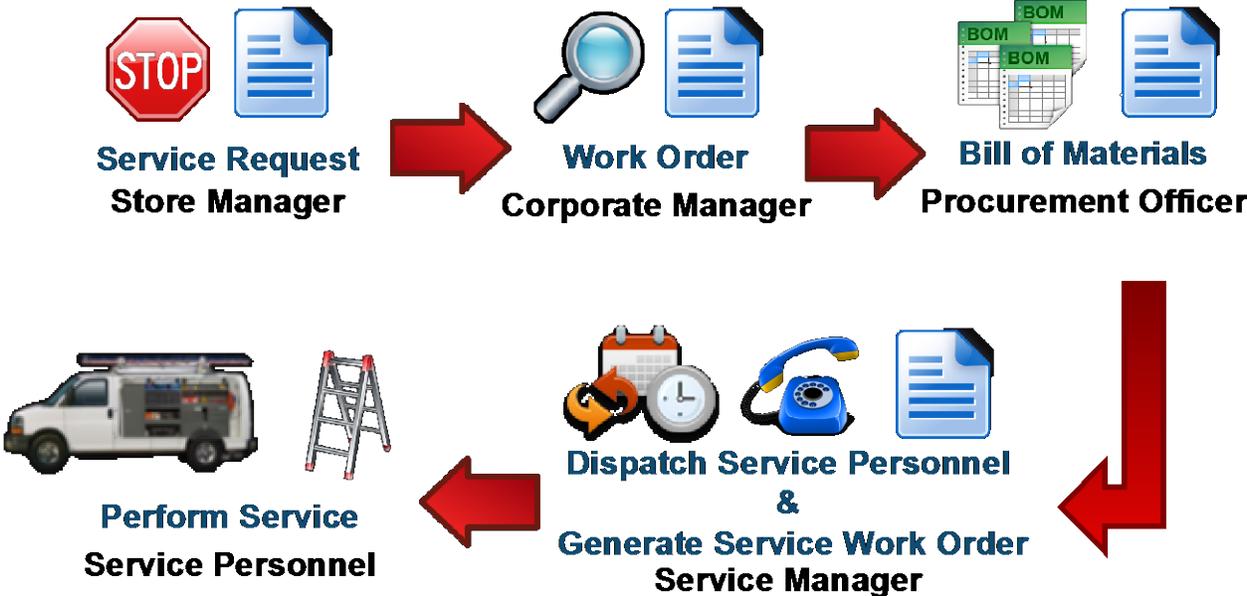
A convenience store chain offers a simple example of the direct and indirect costs of maintaining conventional lighting systems. There are several chains across the country that manage and maintain thousands of stores. Some companies may have hourly onsite employees performing simple maintenance tasks such as changing a light bulb at low elevation, but the majority of large companies will either have in-house traveling maintenance crews or will contract out lighting maintenance altogether to a third party for the majority of lighting maintenance. For companies that do their own lighting maintenance, there will be many "layers" of work behind the scenes in order to facilitate the process. Multiple managers are required to coordinate work and materials, and service teams will typically be equipped with inventory, trucks, and specialized equipment and personnel to keep stores lit.

Third-party lighting maintenance contractors typically cost the company a premium for the service compared to in-house teams, but this also allows the company to completely shift the maintenance burden to another entity.

Application Note

The “In-House” Process

1. A store manager notices a fixture is no longer working. He stops his work to write a service request and then submits the service request to corporate.
2. An individual at the corporate office receives the request and determines that this needs to be resolved quickly to satisfy corporate aesthetic standards. This person then either writes a work order or submits the manager’s request to the maintenance department.
3. The maintenance department manager sends the request to a scheduler who enters the request into a schedule and writes a work order for a field service employee to complete the work.
4. The service employee obtains the required materials from inventory, places them into his vehicle, and drives to the store to complete the repair.
5. If the problem is unresolved, the service employee must travel back to the shop for additional supplies or materials and return to complete the corrective work.



Lighting Maintenance Flowchart

The Many Layers of Maintenance

For the aforementioned process, corporate procurement officers are charged with maintaining sufficient inventory from electrical distributors, often with regular pricing negotiations. Materials purchased for inventory are typically reviewed and approved by a manager prior to order placement.

A field manager writes a material order request to allow the required materials to be requisitioned for install from inventory, or purchased for install by field personnel.

Application Note

A dispatcher selects service personnel and deploys teams in a company-owned vehicle after loading or purchasing the required materials.

Service personnel perform the in-store labor and gather old lamps and ballasts for proper disposal as hazardous waste, per EPA mandates.

The hazardous waste is either packaged for local pick up by a certified waste hauler or returned to the central warehouse for legal disposal onsite.

Whether picked up at the storefront or at a centralized location, a certified hazardous waste hauler picks up the waste and provides the company with EPA-mandated documentation of proper disposal.

CAUTION: *In retail spaces, a broken fluorescent lamp can have great cost repercussions. Beyond shutting down the area for a lengthy cleanup process per EPA guidelines, products can be contaminated with glass and toxins, thus requiring their disposal.*

Group Re-Lamping Costs

Most national retailers have group re-lamping programs with budget monies set aside annually to pay for complete system lamp and ballast replacement on a regularly scheduled basis—typically every two or three years. In grocery store chains, an average budget can be \$0.25 cents per square foot per year. With a typical three-year group re-lamp schedule and a 30,000 sq. ft. facility, that is \$22,500, or \$7,500 budgeted each year.

Exterior Re-Lamping

Auto dealerships and other facilities desiring consistent color temperature and luminance also practice group re-lamping schedules. Exterior lighting of these types require expensive equipment and, for safety, multiple-man crews. Products may require temporary relocation or, in the case of street lighting, barricading of traffic and multiple safety vehicles to protect both workers and the public. These are commonly scheduled at a two-year re-lamp, because even if the HID lamps normally used are not burned out, the color shift in these lamps is below acceptable levels for many exterior environments.

Other Types of Facilities

Although we've specifically explored retail lighting applications here, any facility currently using fluorescent or HID technologies experiences most of these costs at some level. In educational, institutional, or public-sector properties, overhead costs may be greater due to facility size and the need to source or warehouse large varieties of lamp types. Clean-up costs related to broken fluorescent lamps can also be magnified when large air handling systems must be shut down to avoid spreading of hazardous materials, such as in a healthcare setting.

Indirect Overhead

Aside from the personnel costs examined above, there are various risk factors attributable to lighting maintenance as well, and real costs for related insurance. Liability insurance and workers compensation insurance should be considered, especially for field technicians performing maintenance at elevation or when working with dangerous voltages. The use of company-owned vehicles gives rise to vehicle insurance, and related costs for fuel. Finally, as previously mentioned, lawful disposal of hazardous substances found in fluorescent and HID lighting adds additional real maintenance costs, and the burden of record-keeping for such disposal should be considered as well.

Application Note

Conclusion

Until LED lighting, companies had no other option than to regularly and continually replace old burned-out lamps and ballasts. And with no other option at hand, these “hidden” costs stayed hidden. However, with the dawn of LED lighting, companies are bringing to light the true cost of their lighting maintenance programs and finding out that there is a better alternative. Ask your RVLТ representative how you can eliminate the lighting maintenance pains of your facility today.

About RVLТ

Revolution Lighting Technologies, Inc. manufactures an extensive line of high-quality interior and exterior LED lamps and fixtures that produce immediate energy savings and a rapid return on investment. We offer an extensive lighting product line backed by warranties of up to 10 years to meet most commercial, industrial or residential installation and retrofit needs.

For more information, please visit <http://www.rvlti.com/>.