Solar-Powered Flashers: Engineered to deliver and meet budget demands

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Dinosaurs belong in museums. So do traditional flashing beacon systems when you compare their costs with solar-powered flasher systems. For tight budgets, solar flashers are an affordable option to digging and installing hardwired systems.

The majority of solar flashers installed in the U.S. are in urban rather than rural areas due to the costs of getting power to the site. Even though power lines run overhead, many locations have been termed “over urbanized” or “isolated from power.” The obstacles to power access are (1) right-of-way and zoning restrictions; (2) location of the nearest power drop; (3) time required to obtain a hook up; (4) the cost of obtaining service; (5) site remediation costs; and (6) soil conditions.

Right-of-way and zoning restrictions
Right-of-way access to utilities is often restricted by roadway expansion making it difficult to use power machinery to trench for conduit. Hand-digging may be the last resort, not only increasing costs but creating delays depending on the excavating conditions and personnel availability. Due to the density of services in some areas, there is no choice but to manually dig for new installations or risk damaging existing services.

Zoning issues factor into the inability to obtain power. Approximately 30 years ago, most areas of the country began shifting from overhead power lines to underground lines for power distribution, thus mandating flashers be connected with underground hook-ups.

After installing an optically-activated, solar-powered flasher at Fire Station #5 in Tucson, Traffic Engineering personnel estimated the city saved more than $30,000 by avoiding the use of commercial power and underground lines.

Location of the nearest power drop
Very often, there will be easy access to power on one side of a roadway and limited, or no access on the other. Sometimes this is caused by a complete lack of power or to access issues regarding power to roadway lighting poles which may not be controlled by the installing agency.

In some areas of the country, roadway lighting power is controlled by the local utility company which, due to liability issues, limits or denies other agencies a connection. This problem was solved with solar power on a pedestrian crosswalk flasher and detector station in Arlington County, VA.

Lead-time for a power hook up
As urban areas expand, the lead-time to obtain a power hook up has increased. It can take several weeks or months to get a hook up. After a fatal accident in front of Independence High School in Glendale, AZ, a solar flasher was specified, bid and installed within 45 days.

Site remediation
Flashing beacon systems are not customarily part of the original roadway plan. They are added to a location to remedy a condition which warrants their use, such as installation of a pedestrian crosswalk or school zone speed compliance. This usually means installation in a previously landscaped area with pavement or sidewalks, requiring site remediation work at the project's end. The work may be as minimal as replacing ground cover or as extensive as relaying paving stones.

Soil conditions
Rocky soil presents a major expense factor especially in the desert areas of Arizona. Special trenching machinery may be needed to lay conduit. In addition to delaying a project, the cost of custom equipment can easily double or triple installation costs. Similar problems arise if the installing agency has to bore under the roadway.

Costs: traditional versus solar
Considering all the obstacles to power access, when you compare the costs, solar flashers are the system of choice. Both types have basic expenses: the pole and/or base; anchor bolts; the foundation work; and the signs and beacon assembly.

With a solar flasher there is the added cost of the solar power system with its controls which can run as low as $1,800 or as high as $5,000 per power system. Generally, there is one power system per pole in a project. There may also be a small premium for the DC beacon kit over an AC beacon kit but the cost is insignificant relative to the overall savings.

However, with a solar installation, most of the problems previously discussed, and their possible financial ramifications, are avoided. The solar flasher installation only requires pouring a foundation for the assembly, approximately 2 feet in diameter by 3 to 5 feet deep (actual foundations may vary with your soil conditions). With such a small footprint for the solar flasher and no conduit, it's easier to find a suitable location. Long-term operating system costs are usually limited to replacing the batteries every 3 to 6 years; less than the cost of monthly power from a utility company.

Considering the high potential for complications when installing traditional flashing beacon systems in an urban environment, solar flashers are an attractive alternative. Installation time is minimized and projects can be kept on schedule by reducing the infrastructure required to support the flasher system. Delays in obtaining power and the associated costs are eliminated. Overall, solar flasher systems offer a better choice for your client's next flashing beacon project.

Finally, you don't have to dig deeply to meet your clients' budget demands; you don't even have to dig. Suddenly, everything else out there is looking positively prehistoric—like the dinosaur.

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