



“Wireless” Traffic Control Solutions

APPLICATION: *Fire Station Flashers with Optical Detection*

LOCATION: *Maricopa County Fire Station 131, Sun City, AZ, U.S.A.*

Description

The fire station driveway, located about 250 feet from a nearby intersection, had no warning signals and an inoperable optical detection system tied to the nearby intersection control cabinet.

Solar Traffic Controls worked with Maricopa County (MCDOT) to provide a total of three flashing beacon systems on the approach to the station. The application site had a large median and two lanes in each direction. Two flashing beacons were placed at one approach, on the median and one on the curb, to account for various visible obstacles in advance of the curb unit. The other approach required one flasher in advance of the driveway.

Each flashing beacon unit was based on the STC XSR product family and included a radio receiver, control logic with an LCD screen and a DPC2000 integrated charge/flasher control with built-in night dimming. Each unit included an omni-directional confirmation beacon strobe and a solar powered system designed to meet the location, load and duty cycle of the project. Additionally, each system included a self-test function to allow county personnel to verify operation of each unit.

Originally, the station had an optical detector system on a pole at the end of the driveway with a pre-emption emitter on the pole aimed at the detector at the nearby intersection. However, the equipment was originally tied to the controller at a nearby intersection. The conduit connecting the equipment to the intersection had been cut several years ago and was never repaired.

The original design was to use an AC system powered from the controller. Once the conduit problem became apparent, an all-solar solution made sense to meet the project timeline. The master unit consists of an optical detector transmitter unit with a solar-powered system. The detector head is a Tomar Strobe Switch with an additional

amber LED detect confirmation lamp. Once an exiting vehicle with pre-emption lamp on is detected, the control logic transmits out an ON command to the flashing beacons. The signal is repeated for redundancy thus ensuring success in transmission in noisy environments.



Detector/transmitter station



Close-up detector assembly



Since the fire station is located near the intersection, but not all calls require using the intersection, a secondary radio system to control the pre-emption emitter function on the pole was included. When exiting, trucks must head through the nearby intersection and the system is activated, the driver may use a short range radio on the truck visor to activate the pre-emption emitter on the detector pole thus giving an early pre-emption signal to the intersection. Since the intersection has a 40 second "Don't Walk" cycle the early activation helps get the intersection into pre-emption earlier thereby speeding the fire station's response time when heading in through the intersection.

Take these steps to insure the success of your solar-powered project:

1. Location - identify the site of the application; for example, the nearest town, village or city and state.
2. Load - specify the number and size of lamps, timers or other controls (anything which draws power).
3. Duty Cycle - determine how many hours per day and which days per week the load will be drawing power.

Go to "Send us your requirements" at www.SolarTrafficControls.com/support/requirements.php for more details.

Solar Power: a free source of energy

STC's solar-powered systems are designed for quick and easy installation in the field. Our careful front-end engineering minimizes your installation costs and provides years of trouble-free operation. The standard solar power system includes the solar array, system enclosure with all the necessary electronics, color-coded wiring harnesses, sealed batteries and full documentation. DC LED lamp kits can also be purchased. These include the LED beacon, lamp housing and mounting hardware.

STC Systems are Cost Effective

Our solar flasher systems allow you to stretch your budget to obtain the traffic safety devices you need at affordable prices. Most systems are equivalent to the cost of obtaining an AC power drop. Battery life is typically three to six years; less expensive than grid electricity for the same period of time.

Solar Traffic Controls (STC) provides solar-powered traffic control systems for city, state and federal DOTs; police, firefighting and public works departments; facility maintenance and plant safety industries. Our primary products are solar-powered flashing beacon systems used for school zones and 24-hour applications. We also supply specialized flasher systems using environmental sensors and custom communications packages to control the flashing beacon systems. Our product spectrum also includes wireless power systems for ITS, EMS and HAR. STC's products and services are sold through a network of regional distributors who offer technical support for your project.

For more information: Solar Traffic Controls, LLC • 1930 East Third Street, Suite 21 • Tempe, AZ 85281-2929 USA
Tel: 480.449.0222 • Fax: 480.449.9367 • info@solar-traffic-controls.com • www.solar-traffic-controls.com