

27th Annual Road/Bridge Safety Improvement Program

East Vincent emergency generators installed at intersections to operate new led lights

**2009
Award Winner**



PROJECT DESCRIPTION

East Vincent Township has two intersections controlled by traffic signals – both on Route 724 in the northernmost section of town – which control only PennDOT roads at both locations. Over the years, much-needed improvements have been made to these intersections to control the increased traffic in the area. However, there has still been a major glitch in the system when it comes to power outages. The East Vincent Township Police, and Fire Police from both the Ridge Fire Company and the Liberty Fire Company, have spent many long days and nights directing traffic at these locations until power could be restored. Free-standing stop signs were developed to be erected during these times, but they were unable to withstand high winds or drafts from passing tractor trailers. In addition, glare from the early-morning sun also caused issues in this location, as Route 724 runs slightly northwest/southeast. Drivers had a hard time seeing what color the light was in the southeast direction during the morning rush hour.

SAFETY

There is very little interruption of traffic at these locations due to that fact that our 24/7 police department has full access to the generators and signal cabinets to change over to emergency mode within minutes of a power outage. No police officer or fire police officer has to risk their lives standing in the middle of these intersections while trying to keep traffic flowing during storms and other power interruptions that occur during severe weather.

MEASUREABLE IMPROVEMENT

The way the signals are wired, they are able to run on regular traffic mode rather than flash mode, as some signals are designed to do on a back-up system. This keeps traffic flowing on both of these major PennDOT arteries, utilizing detection loops in the roadway as if the signals were running on the main energy source. Even though the intersection lane configurations may change with future development around the area, this system will continue to operate effectively with very little change, if any.

ALTERNATIVES CONSIDERED

Several different ideas were discussed in configuring this traffic signal system. One was using transfer switches to change from the original power source to the emergency source in the event of a power outage. But since these devices are expensive and costly to install, this plan proved to be too expensive a solution. With the quick disconnect plug, the operator is able to quickly transfer power from one mode to the next just as easily without the extra-cost factor. Also considered were emergency battery backup systems used in other locations. They require constant maintenance to be sure they are charged and ready. But it was feared that, during a prolonged power outage, these batteries may fail.

RESOURCE UTILIZATION

Although this project was fully funded by the municipality, it was done with available resources at hand. The township did not have to get into a bidding process for the emergency generator portion of the project. It was determined ahead of time that the Public Works Department and Police Department would trade traffic control duties with the contractor during the installation of the emergency disconnect boxes. Also, the banding of large generator cabinets into the signal poles was incorporated with a service call to repair some lightning-damaged components, therefore eliminating an extra mobilization fee.

TIMELINESS

The township is on a downturn of development. The project could have been done with funding from a developer, but it is impossible to say when that might occur. This became a safety issue and therefore handled accordingly. The township worked with the two local fire companies and the police department to make this happen as cost-effectively and quickly as possible, resulting in a very-dependable system that benefits all of these individual entities, as well as the driving public. The township's traffic signal maintenance contractor, Telco, was instrumental in helping to design and incorporate this work with the scheduled work of the LED changeover. Without this cooperation, the project would have taken thousands more dollars to complete.

