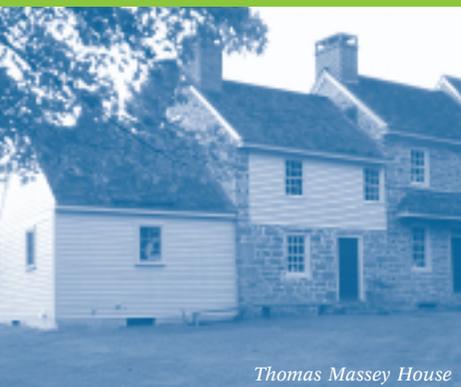




Rebuild America Success Stories highlight partnerships working to improve communities by practicing energy awareness and investing in energy-saving measures.

- New Building Design
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- Operation and Maintenance
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Thomas Massey House



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Marple Township

Small Town Lights Its Way to Energy Savings

Marple Township is located about 10 miles outside Philadelphia. Although the township's population of around 24,000 makes it a fraction of the size of its neighbor, this small town has achieved major energy savings, thanks in large part to efficient lighting technologies.

The Challenge

Many small communities struggle to provide adequate services to their citizens while staying within their budgets. Capital improvement projects may be put aside, or delayed, to ensure funds are available for more pressing needs. For many communities in the Northeast, high energy costs place an additional strain on the budgets of local governments, as well as citizens and businesses.

The Solution

Since teaming up with Rebuild America in 2000, Marple Township has reduced its electricity expenses by implementing energy-smart improvements and upgrades, including energy-efficient lighting.

Although the incandescent light bulb has been the workhorse of the lighting industry since its introduction, Edison's invention is inefficient at producing light. Most of the electricity used to illuminate an incandescent bulb is wasted as heat.

To reduce municipal electricity bills, the township retrofitted incandescent traffic lights in 33 intersections with high-efficiency LED (light-emitting diode) traffic lights. An LED is a simple semiconductor that lights up when electricity is passed through a diode. The technology illuminates a wide array of devices, from alarm clocks and cell phone displays to flash lights and exit signs.

Replacement LED traffic lights use up to 90 percent less energy and last around five times longer than incandescent lights, which reduces maintenance costs and time. An additional benefit is that LED traffic lights do not suddenly burn-out like an incandescent bulb does at the ends its life. LEDs slowly fade, giving ample notice that it is time to replace the light, making for a safer intersection. And since LED traffic signals are composed of individual lights bundled together, if ones fails it does not compromise the utility of the signal.

The LED traffic lights require no special tools to install. "The retrofit is easy," says John Butler, commissioner with Marple Township. "It is a sealed light that fits into the traffic light." He also notes that the sealed lights are easier to clean, which reduces maintenance time.

Continued on back

Partnership Facts:

Name of partnership:

Marple Township, PA

Targeted projects:

Traffic signals, residential lighting
and congregational lighting

Annual energy savings:

\$32,268 (LED traffic signals)
\$14,000 (CFLs)

**Amount invested in energy-
saving project or initiative:**

\$54,101* (LED traffic signals)
\$1,000 (CFLs)

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*Figure does not include federal funds under second phase

For more information about energy-saving technologies, visit the Business Partners section of the Rebuild America Web site: www.rebuild.gov or contact Rebuild America at: 252-459-4664.

Marple Township also replaced its incandescent walk signals, which used 135 to 165 watt light bulbs, with LED signals that use just 14 watts. The payback period was only one year and four months. "It's a missed opportunity for many towns," says Butler.

The retrofit cost \$50,000 for the first phase (23 of 33 intersections), but the cost of LED traffic signals dropped considerably since the project started, making the final phase less expensive per unit. The township also received funds for the second phase under a federal program to alleviate traffic congestion by timing traffic signals.

Beyond Traffic Signals

To further advance energy-efficient lighting, the township gave hundreds of compact fluorescent light bulbs (CFLs) to lower-income senior citizens in recognition of Energy Awareness Month.

Although CFLs cost more than incandescent light bulbs, the prices are dropping. They can last up to 10 times longer and use about two-thirds less energy to produce the same amount of light. With electric rates in the township higher than the national average, the township's senior citizens will save approximately \$14,000 in energy costs over the life of the CFLs.

St. Mark's United Methodist Church helped distribute the CFLs and was even inspired to retrofit its own lighting. The church replaced incandescent light bulbs in its Sunday school, church and hallways with CFLs. Energy use for lighting dropped from 15,000 watts to 4,500 watts, says Rev. John Nesbitt.

The long-lasting CFLs also reduce maintenance work. "This is especially important in the sanctuary where two people are needed to change bulbs in the ceiling," says Nesbitt.

Additionally, the church helped the Central Delaware County Food Bank and a mass disaster care facility retrofit their fixtures with CFLs, reducing energy costs for these community service providers.

What the Future Holds

After the traffic signal retrofit was complete, the Marple Township commissioners voted to use 5 percent of the energy cost savings to purchase electricity generated from renewable sources. The traffic and walk signals will soon run on 100 percent green power, joining the township's 1696 Thomas Massey House (pictured on front) which currently is powered by 100 percent wind energy.

Marple Township is also working on indoor lighting retrofits. In township buildings, T-12 fluorescent lights with magnetic ballasts are being replaced with more efficient T-8s and electronic ballasts, which will further reduce energy costs.

To learn more visit: www.eere.energy.gov

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Rebuild America is a U.S. Department of Energy program that focuses on improving communities through energy-saving solutions.



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