City of Charlottesville, VA

Performance Indicator

- **Electricity expenditures per square foot for administrative/office facilities**

For FY 2006, the city of Charlottesville, Virginia, reported spending $1.58 per square foot for electricity in administrative/office facilities. The mean and median values reported for all jurisdictions were $0.32 and $0.07 respectively.

Reviewing data prompts meaningful questions

While reviewing performance data from the city's participation in the ICMA Center for Performance Measurement™ (CPM), Charlottesville's facilities maintenance manager noticed that the city was paying significantly more for electricity than other local governments in the state. With the hope that their techniques might be applicable to his operation, he decided to contact some of these in-state peers to find out how they were keeping their costs lower than Charlottesville's.

> *As [the facilities maintenance manager] recounts, he picked up the phone and reached out: "My question was, 'Okay, how did you do it?' Then, I shut up and listened and learned."*

Charlottesville's facilities maintenance manager, using the participant contact search feature on CPM's private Web site, found contact information for his counterparts in neighboring communities. As he recounts, he then picked up the phone and reached out: "My question was, 'Okay, how did you do it?' Then, I shut up and listened and learned."

Questions lead to money-saving solutions

From his phone calls, Charlottesville's facilities maintenance manager found out that some of his lower-paying peers were using a technique called load shedding to reduce the cost per kilowatt hour that they were being charged by the local electric utility.

The local utility company bases the rate that a customer pays for each kilowatt hour throughout the year on the amount of energy consumed in the customer's highest-demand half hour during the June–September time frame. The more energy that is consumed during this highest-demand half hour, the higher the rate that the customer is charged throughout the year. The utility company explained that this rate structure allows it to maintain the capacity necessary to meet the customer's highest demand for electricity.

Electricity load-shedding solution is projected to save $350,000 per year

With load shedding, customers reduce electricity consumption strategically throughout the day to avoid the peaks that result in the application of higher

Case Profile

Population:
40,745

Square miles:
10

Median household income:
$31,007

Form of government:
Council-manager

For additional information about the practices described in this case study, please contact Lance Stewart, facilities maintenance manager, at 434/970-3665 or STEWARTL@charlottesville.org.

rates by the electricity provider. To gauge whether load shedding would save money in Charlottesville, the facilities maintenance manager identified two large, almost identical buildings (both schools) for a load-shedding trial.

Charlottesville had the advantage of already having climate automation systems in these buildings that permitted detailed tracking of energy consumption. The systems also included the programming necessary to shed electricity load based on consumption patterns. Staff determined the peak consumption hours for the two buildings and instituted load-shedding strategies at those peak times. These strategies, which were set up to not exceed the prescribed maximum indoor summer temperatures for these buildings, included

- Raising the cooling temperature set point on individual air handlers in sequence throughout the peak demand period
- Allowing walk-in freezers to sit without cooling power for a few minutes periodically during the peak demand periods.

This trial resulted in a 12 percent rate reduction, which translates to an impressive $16,321 annual savings to the city for these two buildings alone.

After the city of Charlottesville realized such robust cost savings from its two-building trial, the facilities maintenance staff decided to apply the load-shedding system to all of the buildings for which it is responsible. When all buildings are finally included, the city projects an annual savings of 10 percent—approximately $350,000.