

# Fairfax County Park Authority

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LOB #329:

## **ENERGY MANAGEMENT**

### **Purpose**

Energy management increases energy efficiency by focusing on the efficiency of utility usage, utility cost savings, and providing a better environment for the Fairfax County residents.

### **Description**

The Park Authority's energy management LOB focuses on reducing the consumption of water and electricity at all facilities. This LOB manages, analyzes, monitors, implements, and reports on the results of best practices efforts for energy and utility management initiatives. This LOB researches and locks in utility price contracts for water, gas, and electricity.

Specific initiatives include monitoring existing programs and implementing capital initiatives to decrease energy consumption at Park Authority facilities, including RECenters, Maintenance Shops, Nature Centers, Historic Houses, Horticulture Center, Golf Club Houses, Athletic Fields and Courts, Parking Lot lighting.

The Energy Management LOB was created in 2006 in an effort to provide utilities cost avoidance, reduce energy consumption, and follow in the footsteps of the County and the EPA in providing a better environmental living space for the citizens of Fairfax County. This LOB supports the County's Vision on Practicing Environmental Stewardship.

### **Benefits**

This LOB reduces energy usage and utility costs which in turn reduce emissions and result in a positive impact on climate, air quality, and light pollution. Fairfax County Park Authority energy management initiatives align with local, state, and federal government agencies goals and initiatives to ensure a coordinated effort.

### **Mandates**

This LOB is responsible for carrying out the Fairfax County Energy Policy and Fairfax County Comprehensive Plan. It also follows guidance from the U.S. Department of Energy related to energy efficiency and renewable energy and from the U.S. Environmental Protection Agency related to the Clean Air Act and Energy Star buildings.

### **Trends and Challenges**

The trend is to increase energy efficiency, contain and control energy usage and costs, develop energy efficient systems and utilize the newest technology.

The challenges include limited availability of funding and resources to achieve the greatest possible energy efficiency. The General Construction and Contributions Fund, the Revenue Sinking Fund, and the Park Bond Fund are funding sources for this LOB. If energy projects are identified as capital projects, they require planned costs and justifications prior to being approved for funding. These projects are time consuming, require very detailed complexities, and are costly. The initial capital outlay can be large and may take several years to recover. As an example, the typical cost for a natatorium lighting project is \$100,000 and the investment payback for natatorium lighting can take 3-5 years to be achieved while utility savings are immediate.

# Fairfax County Park Authority

## Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
<b>LOB #329: Energy Management</b>			
<b>FUNDING</b>			
<u>Expenditures:</u>			
Compensation	\$80,117	\$83,149	\$89,665
Operating Expenses	21,265	23,341	20,678
<b>Total Expenditures</b>	<b>\$101,382</b>	<b>\$106,490</b>	<b>\$110,343</b>
General Fund Expenditures	\$101,382	\$106,490	\$110,343
Total Revenue	\$0	\$0	\$0
<b>POSITIONS</b>			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	1/1	1/1	1/1
<b>Total Positions</b>	<b>1/1</b>	<b>1/1</b>	<b>1/1</b>

## Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
The annual Cost Avoidance from Energy Projects implemented since 2009	\$110,000	\$134,000	\$144,000	\$170,000	\$200,000
The annual CO <sub>2</sub> emission reduction from Energy Projects implemented since 2009	1,600,000	2,050,000	2,140,000	2,550,000	3,000,000

This LOB manages energy consumption throughout all sites as one of the top goals. Cost avoidance is a calculated/estimated utility cost. Carbon reduction is a result of energy usage reduction and other efforts/initiatives. The calculated results for cost avoidance and carbon reduction are based on projects implemented since 2009 and currently being completed; the year that FCPA energy program started and its results became tangible. Sample energy projects include upgrading lighting and control systems throughout RECenter buildings, athletic fields courts, parking lots and also upgrading mechanical systems and controls such as installing variable frequency drives (VFDs) on pool pumps. Installing smart irrigation control systems is another example of those efforts. Cost avoidance also includes the person-hours saved in replacing light bulbs, checking to see if the lights come on or go off, and if the pumps are working efficiently. Switching to sensors, timers, and LED lighting reduce the person-hours in maintenance as well as use less energy.

Utility cost avoidance is calculated based on reduced kwh of electricity and therms of natural gas, as well as other energy sources. Carbon emission reduction is calculated in pounds (lbs.). The energy projects help reduce the overall energy costs and aid in the carbon dioxide emissions that contribute to climate change. The overall five-year goal of increasing cost avoidance to meet an annual objective of \$200,000 while reducing 3,000,000 pounds of CO<sub>2</sub> emissions provides savings in utility costs and a reduction greenhouse gasses. The numbers provided are based on completed projects/initiatives since 2009.