



FAIRFAX COUNTY PARK AUTHORITY



M E M O R A N D U M

TO: Chairman and Members
Park Authority Board

VIA: Kirk W. Kincannon, Director

FROM: Todd Johnson, Director
Park Operations Division

DATE: September 17, 2014

Agenda

Park Operations Committee
Tuesday, September 23, 2014 – 6 p.m.
Boardroom – Herrity Building
Chairman: Edward R. Batten, Sr.
Vice Chair: Anthony J. Vellucci
Members: Linwood Gorham, Faisal Khan

1. Infrastructure Overview – Courts (with presentation) – Information*
2. Energy Management Plans Update (with presentation) – Information*

*Enclosures



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Board Agenda Item
October 8, 2014

INFORMATION

Infrastructure Overview- Athletic Courts (with presentation)

The Park Authority infrastructure continues to age without adequate resources to maintain, replace, renovate properly and address the deferred maintenance. Over the next several Park Operations Committee meetings, staff will update the Board on the condition some of the agency's most popular park amenities and the maintenance and resource challenges moving forward.

The Department of Management and Budget(DMB) and the County Executive continue to work with County agencies to identify evaluate the aging infrastructure of County, School and Park facilities. The review of the Athletic Courts will help the agency better communicate the condition of the facilities and the resource needs for the future.

Staff will share information on the provide an overview of the current condition of the Park Authority tennis and basketball courts to include the Facility Condition Assessment process, examples of the conditions and the variety and cost of maintenance and renovation options. Staff will also share the history of funding and the estimated funding requirements to maintain the courts moving forward.

ENCLOSED DOCUMENTS:

None

STAFF:

Kirk W. Kincannon, Director

Sara Baldwin, Deputy Director/COO

Cindy Messinger, Acting Deputy Director/CFO

Todd Johnson, Director, Park Operations Division

Barbara Nugent, Director, Park Services Division

Cindy Walsh, Director, Resource Management Division

Dave Bowden, Director, Planning and Development Division

Davood Majidian, Engineer III-Energy Manager, Park Operations Division

Infrastructure Overview

Athletic Courts



Court Quick Facts

- Parks with courts: 131
- Parks with basketball courts: 97
- Parks with tennis courts: 80
- Basketball courts: 111 Full; 13 Half Courts
- Tennis courts: 212 Full; 43 Practice; 2 Platform



Facility Condition Assessment Process

Step 1: Assess the Courts

Step 2: Rank the Courts

Step 3: Determine Repair Type

Step 4: Prioritize Repairs

Step 5: Fund Repairs



Assessing the Court

General Court Information										Goals			Pavement Condition				Surface				Comments			
Park Name	Status	Date of Last Repair	Maintenance Area	Supervisory District	Lights	Park Service Use	Usage	Accessible	Backboards ▲	Footers ▲	Posts ▲	Birdbaths	Dents/Divets/Pockmarks	Uneven Pavement ▲	Structural Cracks ▲	Pavement Score	Alligator Cracks	Fading/Wear	Hairline Cracks	Playing Line Condition		Surface Score	Playability	TOTAL SCORE
Brookfield	f	2003	4	l	n	n	l	y	1	1	1	1	1	2	1	5	0	2	1	2	5	1	11	1 crack 21' 1/4", emerging tree root minor depression along 120' up to 1" radial cracks;
Burke Station	p	pre 1997	4	sp	n	n	l	n	3	1	1	0	2	3	3	8	0	3	2	3	8	3	19	volleyball footers; old goals. SDOL
Canterbury Woods	p	2000	4	b	n	n	l	n	1	1	1	0	2	1	2	5	0	3	1	1	5	2	12	130' to 1/2"; rough surface. SDOL?
Chapel Acres	f	2004	4	mv	n	n	l	y	1	1	1	0	1	2	0	3	0	2	1	1	4	2	9	8' hairline; rough surface; uneven in two patches.SDOL.

▲ Safety Consideration

The Assessment Form was created by the FCPA using terminology and information found in the USTA manual to determine what categories to rate. A “Court Condition Ranking Form” is then compiled using the data gathered from the “Assessment Forms” which includes all Areas.



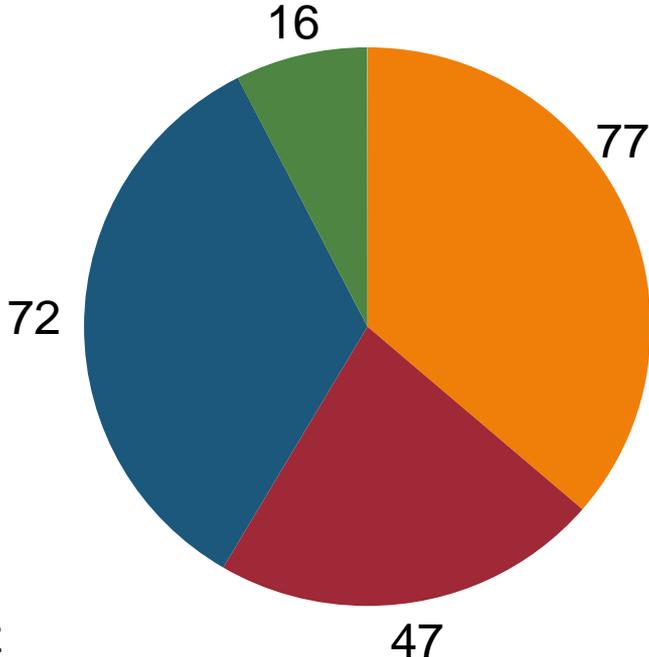
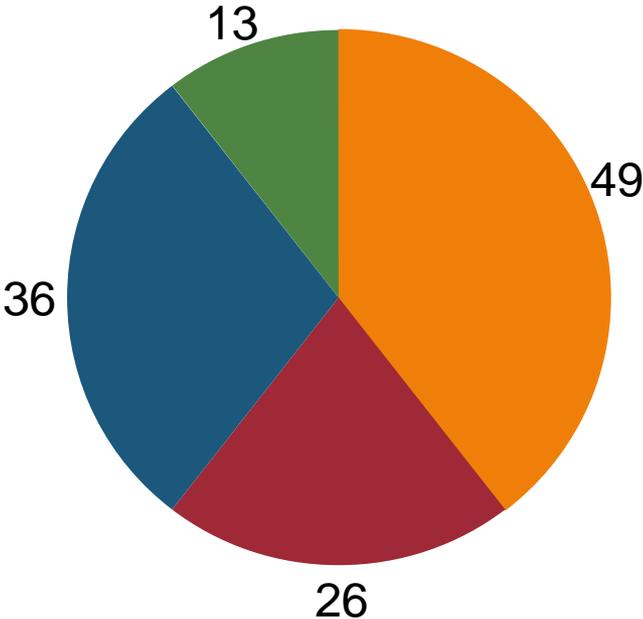
Court Count

Basketball Courts

Tennis Courts

Total Courts = 124

Full Courts Only = 212



- Poor
- Fair
- Good
- Excellent



Examples of “Good” Court Rankings

Ranking: Franklin Oaks = 3

Ranking: Arrowbrooke = 4



Examples of “Fair” Court Rankings

Ranking: Canterbury Woods Park=12



Ranking: Olney Park=9



Examples of “Poor” Court Rankings

Ranking: Spring Lane Park=26



Ranking: Woodley Hills Park=23



Determining Repair Types

Using the Assessment Form and the USTA standards, a Repair Type is assigned to each court.

There are four Repair Types:

- 1) **PM/ Resurface** (IFC “Operations and Maintenance”)- General Fund
- 2) **Repair/Resurface** (IFC “Operations and Maintenance”)- General Fund
- 3) **Renewal/Overlay** (IFC “Infrastructure Replacement and Upgrades”)- GCC
- 4) **Renovation** (IFC “Renovations”)- Bond

Each Repair Type has a projected lifecycle.

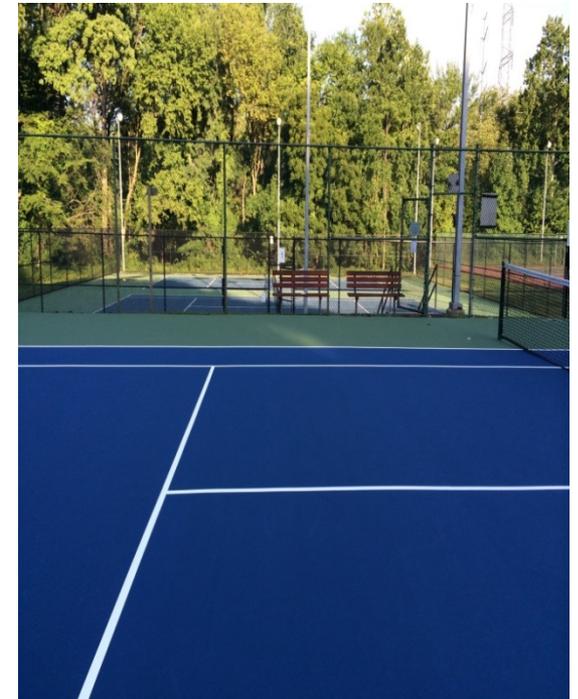


Repair Type: Repair/Resurface

Wakefield Park Courts 7&8, 2014

If the court looks like this then...

Repair/Resurface



This is an example of a
“Fair” court.



Repair Type: Renewal/Overlay

Mt. Vernon Manor, 2012

Numerous cracks and an aging court require a bit more work...

A stone slip sheet is used between old and new asphalt.



This is an example of a “Poor” court.



Repair Type: Renovation

Muddy Hole 2013

A court with multiple issues needs Renovation...

Mill in Place, 6 " stone base, asphalt, sealant, color coat, and playing lines.



This is an example of a "Poor" court.



Prioritizing the Repairs

In addition to the court condition, these factors are also considered:

- Park type/ Proximity to other courts
- Usage/Demand
- Cost of needed repair
- Where the court is in it's repair lifecycle
- Other



Average Cost Per Repair Type- Single Court

Repair Type:

Basketball:

Tennis:

PM Resurface 5-Year Plan

\$4,078.00

\$6,080.00

Repair/Resurface 10-Year Plan

\$12,088.00

\$14,050.00

Renewal/Overlay 15-Year Plan

\$20,629.00

\$45,740.00

Renovation 30-Year Plan

\$37,444.00

\$56,085.00

Fencing and Gates

\$10,345.00



Current Budget Court Repair Plan

Park Name:	Date of Last Repair:	Court Condition Ranking:	Lights:	Supervisor District:	Type of Repair Proposed:	Cost of Proposed Repair:
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Basketball

Loisdale	2000	17		L	MIP/Goals	\$50,000.00
Pohick SV	pre-1997	24		SP	MIP/Goals	\$31,577.50
Spring Lane	pre-1997	26		M	MIP/Goals	\$50,000.00
Total Basketball						\$131,577.50

Tennis

Newington Heights	pre-1997	23	no	MV	SDOL/Fence	\$82,963.30
Total Tennis						\$82,963.30
TOTAL						\$214,540.80

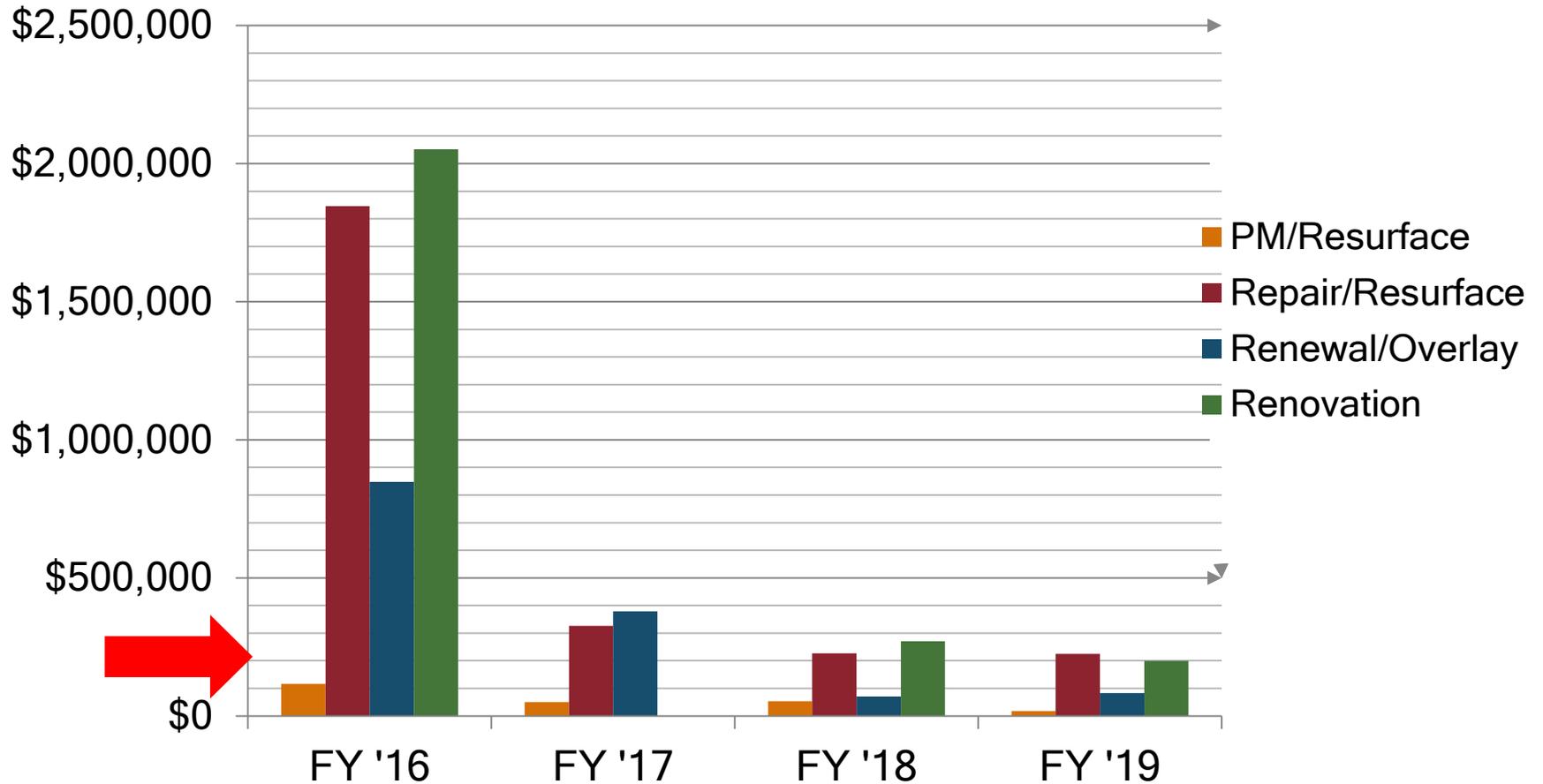
Based on annual appropriations, this represents the amount of repairs possible in a fiscal year.



Funding Needs by Repair Type

FY'16-FY'19

Basketball and Tennis

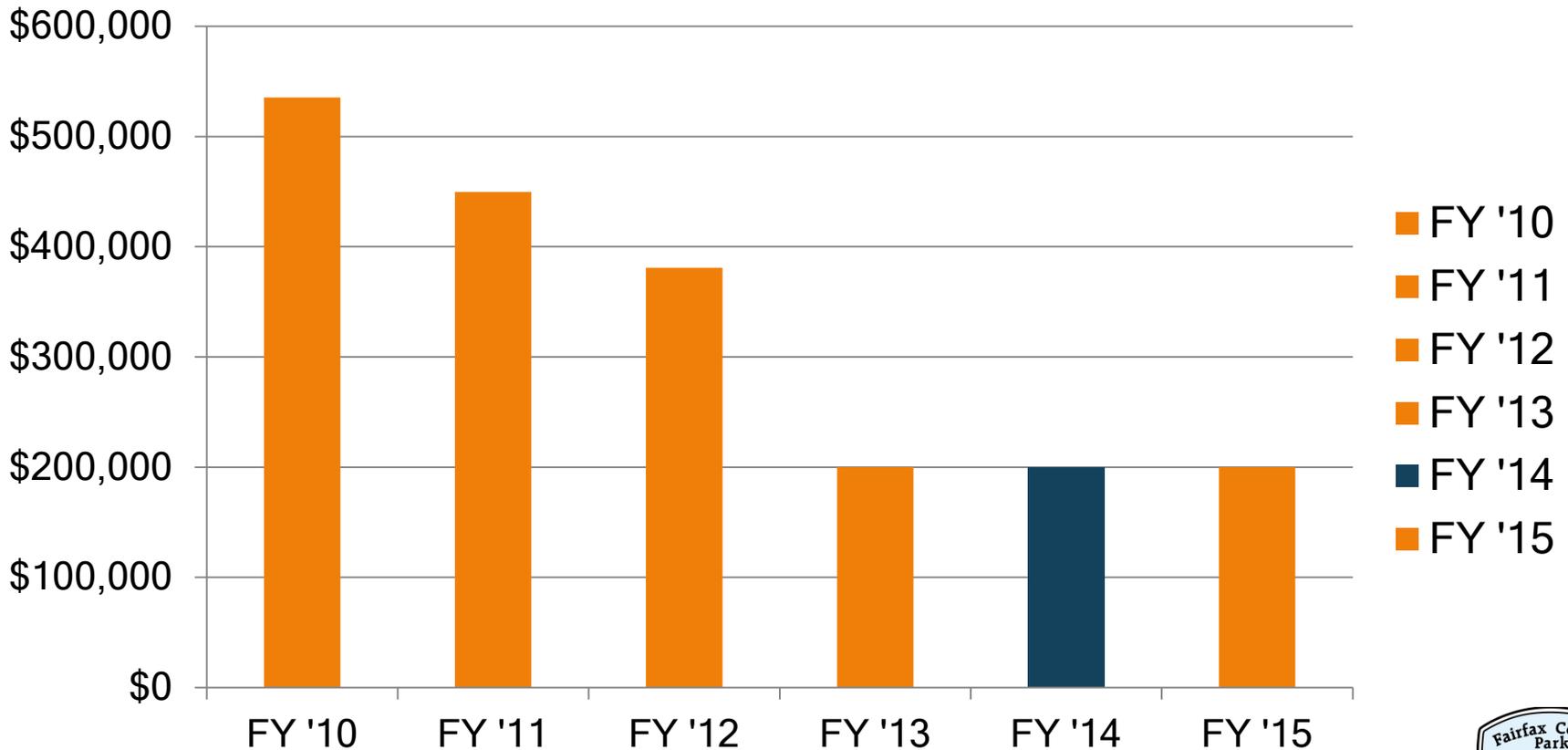


Each court is represented once.



Funding History FY '10 - FY '15

GCC Fund



Result of Delaying Repair

Wilton Woods May 2012



PM/Resurface Fix

Wilton Woods May 2014

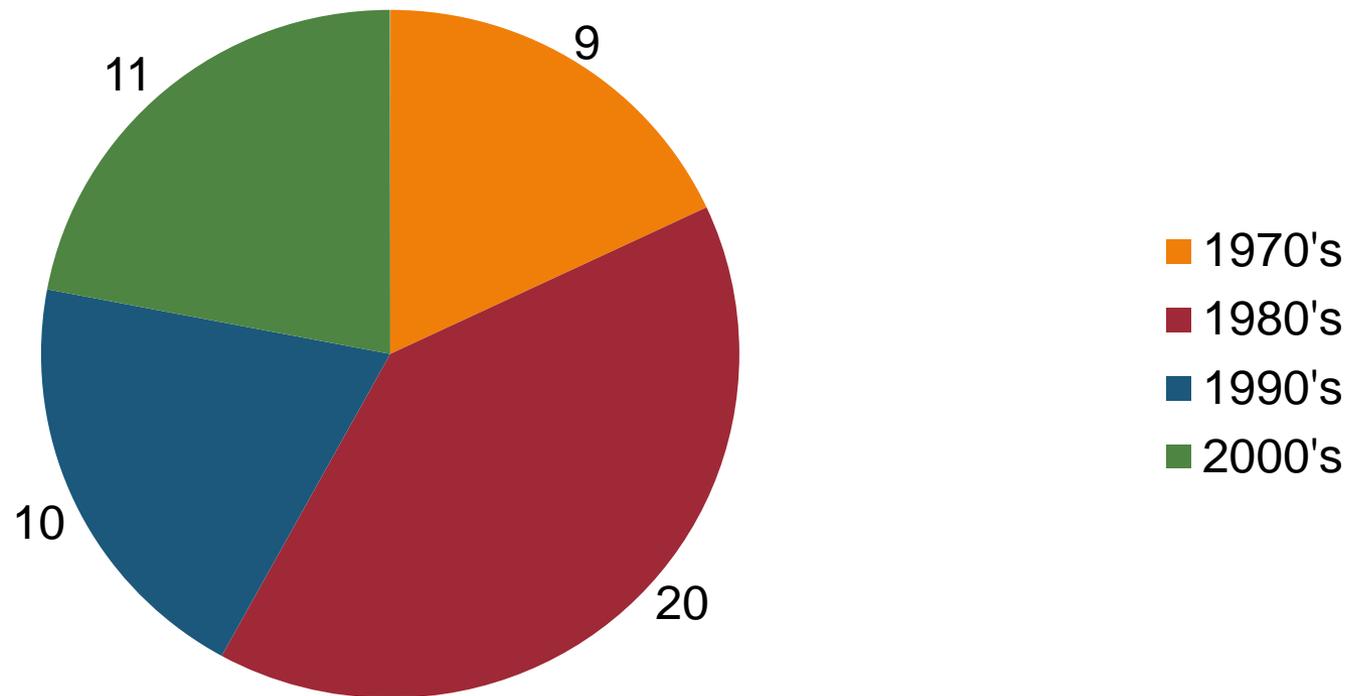


Repair/Resurface Fix



Athletic Court Facility Lighting

Number of Lit Facilities Installed



Some of the courts installed in the 70's and 80's have failed structurally; they have either come down on their own or were removed. Also, as lighting standards change, we will need to upgrade the lamps to meet new candlepower requirements.



Alternative Uses, Expand Services: Repurpose Under-Utilized Courts

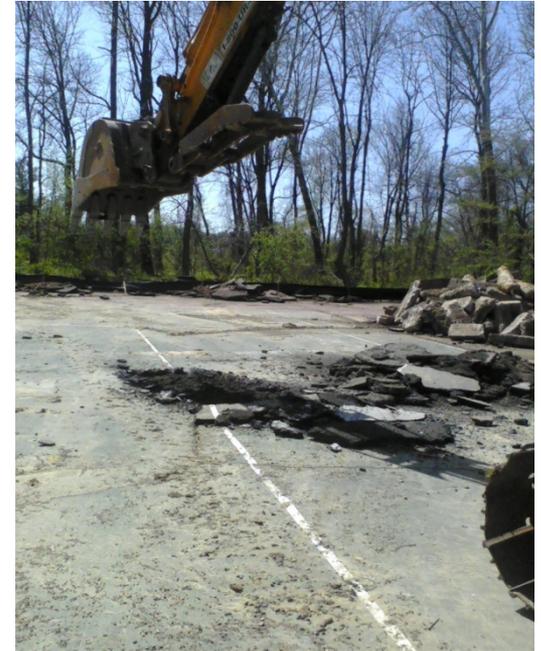
Adult Playgrounds



Raised Garden Plots



Removal



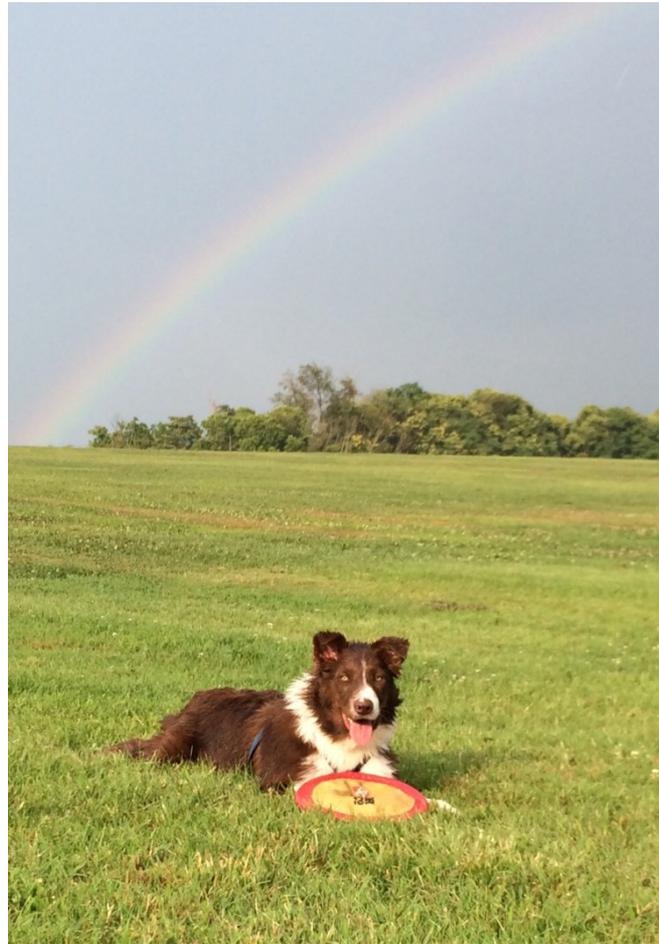
Pickleball



Futsal



Or return to a natural state...



Stay Tuned:

- Playgrounds
- Roadways/ Parking Lots
- Amusements
- Outdoor Lighting Systems
- Trails



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Board Agenda Item
October 8, 2014

INFORMATION

Energy Management Plans Update (with presentation)

The Park Authority adopted the agency wide FY 2012-FY 2014 Energy Management Plan on October 12, 2011. The goals of the Energy Management Plan include reducing energy costs while maximizing services, minimizing the impacts of energy use on the environment, preserving our local and global natural resources, and using renewable resources when feasible.

Staff will share information regarding the implementation progress of the FY 2012- FY 2014 Energy Management Plan elements, outline current energy management projects and accomplishments.

Staff will share an overview of the updated FY 2015- FY 2017 Energy Management Plan including the update to the plan's elements and the agency's energy management priorities for the next three(3) years.

ENCLOSED DOCUMENTS:

None

STAFF:

Kirk W. Kincannon, Director

Sara Baldwin, Deputy Director/COO

Cindy Messinger, Acting Deputy Director/CFO

Todd Johnson, Director, Park Operations Division

Barbara Nugent, Director, Park Services Division

Cindy Walsh, Director, Resource Management Division

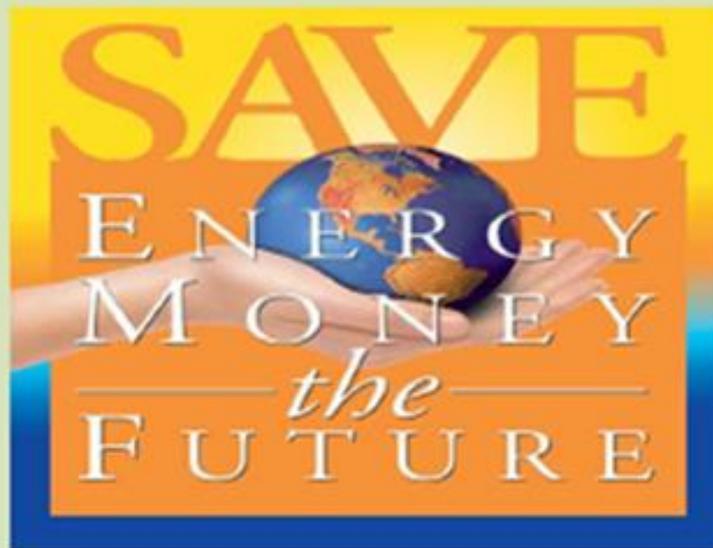
Dave Bowden, Director, Planning and Development Division

Davood Majidian, Engineer III-Energy Manager, Park Operations Division

Fairfax County Park Authority



**ENERGY MANAGEMENT PLAN
FY 2015 - 2017**



Park Authority Board

William G. Bouie, Chairman	Hunter Mill District
Mary D. Cortina	At-Large
Ken Quincy, Secretary	Providence District
Frank S. Vajda, Treasurer	Mason District
Edward R. Batten	Lee District
Richard C Sullivan	Dranesville District
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Michael W. Thompson	Springfield District
Kala Quintana	At-Large
Faisal Khan	At-Large
Anthony J. Vellucci	Braddock District
Harold L. Strickland	Sully District

Park Authority Management Team

Kirk Kincannon	Director
Cindy Messinger	Acting Deputy Director / Chief Financial Officer
Sara Baldwin	Deputy Director/Chief Operating Officer
Todd Johnson	Director, Park Operations Division
Dave Bowden	Director, Planning & Development Division
Barbara Nugent	Director, Park Services Division
Cindy Walsh	Director, Resource Management Division

Park Authority Energy Management Core Team

Todd Johnson	Park Operations Division, POD
Davood Majidian	Energy Management, POD
Ron Pearson	Facility & Equipment Support, POD
Dale Willingham	Preventive Maintenance, POD
Dan Sutherland	Park Management, POD
Alan Crofford	Grounds Services Management, POD
John Lehman	Project Management, P&D
Brian Laws	Operations Management, PSD
Peter Furey	Operations Management, Golf Enterprise
Todd Brown	Operations Management, RMD
John Stokely	Natural Resource Management, RMD
Janet.Burns	Fiscal Management, FMB
Mike Baird	Operations Management, FMB
Donna Walker	Utility Accounts, FMB

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Introduction

I. Objective

To provide a plan for developing and implementing the Energy Management Program for the Fairfax County Park Authority (FCPA) and to coordinate agency-wide efforts to improve energy efficiency and conservation in the park facilities, achieving optimum energy efficiency and promoting conservation.

II. Background

Local governments are taking a new look at how to provide support with fewer resources and with respect to energy resources. They are interested in:

- Reducing energy costs while maximizing services
- Minimizing the impacts of energy use on the environment
- Preserving local and global natural resources

Balancing the gains of development against its negative effects on the natural environment is an ongoing challenge, and one of the main elements of this challenge is managing energy. Because of this, the concept of sustainability has gained acceptance and support as awareness of climate change has grown.

III. Purpose

The purpose of energy management is to increase energy efficiency and decrease energy waste. Energy management starts from an understanding of how a facility uses energy and continues with identifying inefficiencies and defining actions to improve efficiency. These actions need associated targets and ongoing monitoring to measure their performance.

The mission of the FCPA is to set aside public spaces for, and assist citizens in the protection and enhancement of environmental values, diversity of natural habitats and cultural heritage to guarantee that these resources will be available to both present and future generations. To provide better services to the community, agency actions should be conducted in the most cost-effective manner possible. To assist in achieving these goals, the FCPA energy management program is intended to improve energy efficiency and conserve energy in the park facilities including parks, athletic fields, recreation centers, golf courses, nature centers, historical places, visitor centers, and rental

properties. Besides the existing facilities, FCPA is developing and executing plans to construct new facilities or renovate existing facilities and these will involve the energy management program to insure optimum energy efficiency.

The purpose of this Energy Management Plan (EMP) is to provide a guideline for developing and implementing the energy management program in the agency and coordinate agency-wide efforts to make all its facilities as energy efficient as possible and reduce total operating costs where the FCPA pays utility costs. In this regard, energy management opportunities will be identified and energy projects will be defined and executed to continuously improve energy conservation and reduce greenhouse gases produced or caused by the facilities.

IV. Definitions

AEE: the Association of Energy Engineers, a source for information and networking in the dynamic fields of energy engineering and energy management, renewable and alternative energy, power generation, energy services, sustainability, and other related areas

ANSI: American National Standards Institute

ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers, focusing on building systems, energy efficiency, indoor air quality, refrigeration and sustainability within the industry

Building Envelope: the separation between the interior and the exterior environments of a building, which controls the flow of air and energy between the interior and exterior of the building through the roof, walls, windows, and doors to protect the indoor environment as well as to facilitate its climate control

CEM: Certified Energy Manager, a professional certification issued by the Association of Energy Engineers (AEE). Professionals become eligible for this certification after demonstrating expertise in several areas ranging from standards, air quality, energy audits, lighting, procurement and even financing

Dominion Virginia Power: a power and energy company that supplies electricity in parts of Virginia and North Carolina and supplies natural gas to parts of West Virginia, Ohio, Pennsylvania, and eastern North Carolina

ECC: Environmental Coordinating Committee

EECCC: Energy Efficiency and Conservation Coordinating Committee

EIP: Environmental Improvement Program

Electric Rate Schedule: service agreement designation, which is a chart that explains how to calculate monthly electricity cost

Energy Audit: the process of assessing energy conservation needs for a building, facility, or system including safety and efficiency reviews and measures and energy flow analyses

Energy Awareness: overall awareness about how the everyday actions and activities at work affect energy use and impact the environment. Increasing overall awareness can be an effective way to gain greater support for energy initiatives

Energy Conservation: refers to reducing energy consumption through using less of an energy service and differs from energy efficiency, which refers to using less energy for a constant service

Energy Efficiency: the ratio of work released by a system or process to quantity of work or energy used as input to run the process

Energy Management: a continuous planning process which is used to accomplish the efficient use of energy in buildings, facilities, and systems

Energy Management Opportunities (EMO): opportunities that have been identified for energy savings by improving energy efficiency, and reduction of unnecessary energy use

Energy Measures: measures that have been implemented for energy conservation or improved efficiency

Energy Monitoring: the regular collection and analysis of information on energy use to establish a basis of management control and to determine when and why energy consumption is deviating from an established pattern

Energy Planning: the process of developing long-range policies to help guide the future of an energy system which is conducted using integrated approaches that consider both the provision of energy supplies and the role of energy efficiency in reducing demands

Energy Policy: the manner in which an entity has decided to address issues of energy development including energy production, distribution and consumption and might be adopted to meet goals for energy production, supply, and consumption and also for protection of the environment

EnergyCAP: an energy accounting software, used for tracking, managing, processing, reporting and analyzing utility bills and energy and sustainability information

EQAC: Environmental Quality Advisory Council, an advisory group that has been appointed by the Fairfax County Board of Supervisors to advise the Board on environmental matters

ESCO: an energy service company specializing in carrying out improvements in energy efficiency for public and private companies

Energy Management System: a system of computer-aided tools used by commercial entities to monitor, measure, and control their building energy loads and can be used to centrally control devices like HVAC units and lighting systems across multiple locations and also can provide metering, submetering, and monitoring functions that allow facility and building managers to gather data and insight that allows them to make more informed decisions about energy activities across their sites

Energy Use Pattern: the variation in the amount of energy a customer/account uses over time, which affects on-peak and off-peak usage

Facility Energy Coordinator: a manager or employee in facility who has the additional responsibility to coordinate and communicate the energy management plan and items in the facility

FCPA: Fairfax County Park Authority

Internal Rate of Return (IRR): a method for analyzing investments which considers the time value of money. IRR is the average annual compound rate of return received by an investor over the economic life of the investment

ISO: The International Organization for Standardization

ISO 50001: a specification created by the International Organization for Standardization for an energy management system

LEED: Leadership in Energy and Environmental Design, a system to categorize the level of environmentally sustainable construction in sustainable buildings

Mechanical System: the all mechanical components and operations of a building or facility such as plumbing, heating, ventilation, air conditioning and heat recovery

NOVEC: Northern Virginia Electric Cooperative, a consulting and Energy Services Company to provide services related to its power supply operation

Payback Period: refers to the period of time required for the return on an investment to repay the sum of the original investment

Performance Contract: contracts under which a contractor designs, constructs, and obtains the necessary financing for an energy saving project and payments will be made over time to the contractor from the savings

Preventive Maintenance: maintenance performed on a regular schedule to prevent deterioration or sudden failure of systems including energy user systems/components

Return On Investment (ROI): the ratio of the resulting profits or payoff benefits versus the initial costs of investment, which is measured in terms of internal rate of return and/or payback period

Risk Assessment: the overall process of identifying all the risks to and from an activity and assessing the potential impact of each risk

VEPGA: Virginia Energy Purchasing Governmental Association, an association that helps local governments to negotiate their energy rates

Washington Gas: a public utility holding company (WGL) that distributes natural gas to customers in the District of Columbia, Maryland, and Virginia

WGES: Washington Gas Energy Services, a subsidiary of WGL (Washington Gas holding company) that supplies electricity, natural gas and green energy options to commercial and residential customers in Delaware, the District of Columbia, Maryland, Pennsylvania and Virginia

V. Energy Management Program Support

V.1. Management Review and Support

The energy management program along with the energy policy, goals, processes, teams, efforts, and projects will be reviewed by agency management annually to provide feedback and financial supports.

V.2. Energy Management Network

Fairfax County has established an Energy Efficiency and Conservation Coordinating Committee (EECCC) to advance the County's fiscal, social, and environmental stewardship goals. It advances these goals by coordinating energy efficiency and conservation planning across the county agencies, schools, and authorities and by disseminating information regarding energy efficiency and conservation to the county employees, employers, and residents. FCPA is a member of this committee. EECCC has created a charter to promote a common understanding of the committee's purpose,

objectives, scope, membership, and process. A copy of this charter is attached in Appendix B1.

FCPA energy manager identifies, expands, and maintains relation and connection with energy related organizations and teams to share experience regarding energy subjects, such as opportunities, concerns, regulations, technologies, and lessons learned. Also, the FCPA energy manager participates regularly in appropriate energy related conferences, seminars, and expositions for latest updates.

FCPA energy manager accomplishes and maintains the Certified Energy Management (CEM) certificate and keeps membership for significant energy management associations such as the Association of Energy Engineers (AEE).

V.3. Facility Energy Survey

Energy-related surveys in the FCPA facilities will be conducted for different purposes. One purpose of the facility energy survey is to keep facilities and employees involved in energy management practices and also to gather the park facilities energy related data and information to be used for facilities energy audits and energy efficiency improvements. The survey results could be used as input for other related elements of EMP such as facilities energy monitoring, energy audit, and energy projects management.

The facility energy surveys will be conducted per need or request and involves related park facilities. A survey may re-conducted periodically based on changes in the facilities data and information.

FCPA surveys for energy management are as follows.

V.3.a. Facility Energy Suggestions/Feedback Survey

This survey is conducted in all or selected park facilities to gather feedback and suggestions for facility Energy Management Opportunities (EMO). Related facility managers and employees are involved in this practice to provide input for different areas of improvement, including:

- Lighting and control system
- HVAC (Heating, Ventilation, and Air Conditioning) and control system
- Building envelop including replacement, insulation, striper and caulking
- Painting where it could reduce light usage
- Cleaning where it could reduce light or HVAC usage
- Service equipment and tools that could impact energy usage
- Service operation hours where it could reduce energy usage without impacting service quality
- Equipment layout and activity spaces where it could impact energy usage
- Raising of awareness for energy management

- Water usage control system
- Renewable energy

The format designed for this purpose is attached in Appendix S1.

The first EMO survey was conducted in 2008 and second in 2014 in all FCPA facilities and results were reviewed and are being used as an input for energy audit.

V.3.b. Indoor Lighting Survey

This survey gathers data and information related to existing indoor lighting and control systems in the park facilities. For more accurate results, and based on information needed at different times, the survey could be conducted separately for different groups of indoor lights or facilities such as recreation centers, golf courses, nature centers and historical places, area management buildings, and rental properties.

Indoor lighting survey is performed in selective park facilities based on opportunities for improving energy efficiency for lighting and control system in the facilities. The result of the surveys will be used to identify and define energy and retrofit projects.

V.3.c. Outdoor Lighting Survey

This survey gathers data and information related to existing outdoor lighting and control systems in the park facilities. For more accurate results and based on information needed over the time, the survey could be conducted separately for different groups of outdoor lights such as athletic field and court lighting, parking lot lighting, trail lighting, and security lighting. A format for outdoor lighting and control systems survey is attached in Appendix S2.

The first outdoor lighting survey was conducted in FY 2010 for all FCPA outdoor facilities excluding athletic fields. This survey covered lighting and control systems in parking lots, tennis courts, basketball and volleyball courts, multipurpose courts, trails, roadways and walkways, and outdoor security lights and results are being used for energy audits to identify energy projects. The survey results will be updated upon request and based on changes and future needs.

Additional survey will be planned for athletic fields lighting to gather data and information for existing athletic fields' lights and controls. This survey will help in athletic fields' energy usage measurement and monitoring along with identifying improvement opportunities.

V.3.d. Park Facilities Temperature Set Point Survey

The County adopted a procedural energy policy to determine temperature set points and other energy related actions for buildings and facilities, which is attached in Appendix

A3. However, other surveys are conducted in park facilities to help in identifying temperature set points for the facilities which are not covered by the County procedural energy policy. These surveys consider industry standards or recommendations, customer satisfaction factors, equipment capabilities, maintenance aspects, and energy conservation considerations to identify most efficient temperature set points for park facilities and activities. A format for this survey is attached in Appendix S3.

In this regard, a survey was conducted in FY 2011 with cooperation of operating divisions and planning and development. The results of this survey are reviewed with regard to the County procedural energy policy. The chart for Park facilities' temperature set points is attached in Appendix A4. The temperature set points will be reviewed and updated for all park facilities every three years; however specific reviews and updates will be performed by request or per need.

V.3.e. Park Facilities Utility Account Inventory Survey

To update and complete FCPA utility accounts information, a survey will be conducted in FY12 for all electricity, natural gas, water, and propane accounts. This survey will update existing information for utility accounts and gather additional information for these accounts to create a complete and accurate database for FCPA utility meters in all Park facilities. The result of this survey will be used for energy monitoring, reviewing cost center assigned to each account, and updating/completing utility information in EnergyCap, SourceNet, and Tririga. The items to be surveyed for each account are: meter code, facility name, initial for each facility, account number, meter number(s), index code/cost center, service address on bill, actual FCPA address, areas served/primary use, type of utility, utility company, type of customer, meter size meter(s) picture, rate formula, account start date, and account termination date (if applicable). A format for this survey is attached in Appendix S4.

V.3.f. Park Facilities Mechanical System Survey

To improve energy efficiency in the park facilities mechanical system, assessments and reviews are conducted especially in major facilities such as RECenters and golf clubhouses to identify improvement opportunities for mechanical system components and controls. Implementing automation systems for larger facilities will be reviewed in this survey. The main purpose is to facilitate and to ensure that the County procedural energy policy (appendix A2) and the Park facilities temperature set points (appendix A3) will be followed and to evaluate feasibility and cost effectiveness for upgrading these systems/components.

V.4. Energy Management Program Funding

The Energy Management Program may be funded through:

V.4.a. Operating Funding

A annual operational funding to be allocated for agency energy management program to be used for small energy projects, small corrective and preventive actions, energy awareness, energy monitoring and measurements, external energy audits, and energy awards.

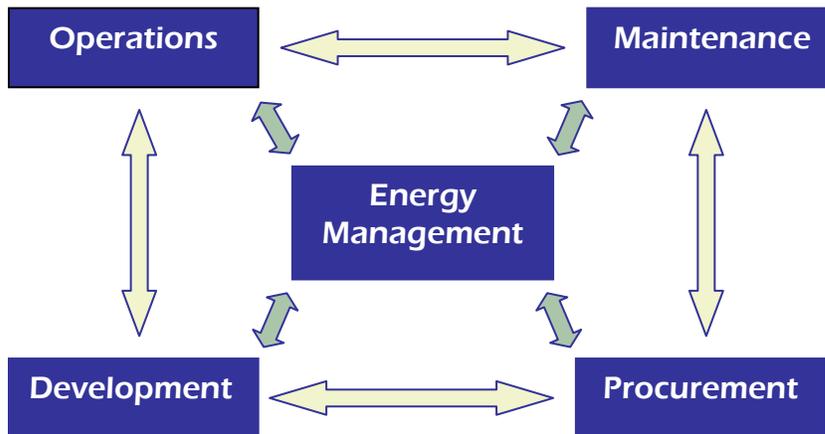
V.4.b. Projects Funding

The funding for energy projects which will be provided from following sources:

- FCPA Park Bond
- FCPA Revenue Operating Fund (ROF)
- Other internal sources such as Telecommunications and Proffer
- Fairfax County Environmental Improvement Program (EIP)
- External Grants

V.5. Energy Management Core Interactions

The FCPA energy management program’s main interactions are with development, maintenance, operations, and procurement entities, as follows:



V.5.a. Facility Development

There will be cooperation between energy management and facility development to ensure new developed or major renovated facilities meet energy management criteria. A plan review from an energy efficiency and conservation perspective will provide an

analysis of design criteria, new equipment, and future operations to help project management team in decision making.

V.5.b. Facility Operations

There will be cooperation between energy management and facility operations to ensure energy efficient operations in the park facilities. The facilities may provide energy conservation feedback and suggestions, and also request energy audits in cooperation with energy management for improvement actions.

V.5.c. Facility Procurements

There will be cooperation between facilities development, maintenance, and operation to consider energy efficiency in purchases of operational, support, and control equipment to ensure optimum energy efficiency in the park system.

V.5.d. Facility Maintenance

There will be cooperation between maintenance management and energy management to ensure energy conservation preventive and corrective actions in the park facilities related to equipment and electrical and mechanical systems.

FCCA Facility maintenance groups including facility support, preventive maintenance, and Tririga system are working to set plans and instructions. This effort will improve energy efficiency and increase energy conservation in the park facilities.

VI. Energy Management Process

The energy management plan is based on a process consisting of elements and supports to ensure the energy management program performance and effectiveness. The energy management process and plan will be reviewed every three years to consider changes and updates based on results, outcomes, and required improvements.

The elements of the energy management program support each other to facilitate the energy management process.

- Energy Policy provides a guide for tackling issues related to energy and is a reference for energy goal setting, energy projects and actions
- Energy awareness facilitates coordination and cooperation in the process
- Energy survey, energy feedback, and energy monitoring provide input for energy audits

- Energy audit provides input for energy projects and also for maintenance support

Two main reference documents that were reviewed for development of the FCPA Energy Management Plan are:

- **ANSI/MSE 2000:2008**

The Management System for Energy (ANSI/MSE 2000:2008) is based on the continual improvement Plan Do Check Act (PDCA) process. This cyclic process ensures that the management and technical elements are sustained and that improvements are verified. The process diagram for ANSI/MSE 2000-2008 is attached in appendix P1.

- **ISO 50001:2011**

This international Standard specifies requirements of an Energy Management System (EnMS) for an organization to develop and implement an energy policy, establish objectives, targets, and action plans, which take into account legal requirements and information pertaining to significant energy use. An energy management system enables an organization to achieve its policy commitments, take action as needed to improve its energy performance and demonstrate the conformity of the system to the requirements of this international Standard. Application of this Standard can be tailored to fit the requirements of an organization, including the complexity of the system, degree of documentation, and resources, and applies to the activities under the control of the organization. This international Standard is based on continual improvement framework and incorporates energy management into everyday organization practices. The basis of this approach is shown in a diagram which is attached in appendix P2. ISO 50001:2011.

EMP Elements

The EMP elements are the core activities of the program for meeting goals.

The FCPA EMP elements should establish proposed energy reduction goals and strategies, list key responsibilities, define budget requirements, establish support processes and procedures, and identify training and auditing requirements. The elements of the EMP are reviewed and updated annually. This review should include an evaluation of past energy management practices and obstacles encountered.

The EMP elements presented in this document include energy policy and goal setting, energy awareness, facility energy monitoring, energy feedback and suggestion, facility energy audit, energy project management, capital project review, and energy sources and supply as described below.

1. Energy Policy and Goals

1.1. Energy Policy

Fairfax County has adopted a Countywide Energy Policy. This policy is attached in Appendix A1.

1.2. Goal Setting

Performance goals drive energy management activities and promote continuous improvement. Setting clear and measurable goals is critical for understanding intended results, developing effective strategies, and obtaining financial gains. Well-stated goals guide decision-making and are the basis for tracking and measuring progress. Communicating and posting goals can motivate staff to support energy management efforts throughout the agency.

The scope of performance goals includes multiple levels of the agency as well as various time periods for completion of specific goals. Agency-wide goals provide a framework for communicating the success of energy management to both internal and external audiences. Facility-wide goals may vary to take into account the performance of specific facilities based on benchmarking results and energy audits. Establishing appropriate and realistic target dates for goals ensures that they are meaningful and promote change. A combination of short-term and long-term goals can be effective to prioritize and conduct efforts.

To set goals, it is important to have an informed idea of what level of performance is achievable and the amount of resources needed. Once the potential for improvement has been estimated, goals can be established at the appropriate levels. Estimating potential for improvement should provide a starting point for what is possible. Assessing performance and setting baselines should help to identify differences in energy use between similar facilities. Benchmarking provides a measurement tool for assessing an opportunity when enough data is available to show trends in energy use. Evaluating past projects and best practices at higher-performing facilities should determine the feasibility of transferring these practices to other parts of the agency.

FCPA energy management goals are set and a list of the goals is attached in Appendix A5. The goals will be reviewed, updated, and approved annually. Updates and changes will be suggested by energy management team and will be reviewed and approved by the Park Authority Board.

2. Energy Awareness

FCPA energy users are informed and received instructions sufficient to operate energy systems effectively and to promote energy-efficient initiatives and also are trained when needed. Energy awareness messages shall be publicized using the FCPA communication channels.

To facilitate the process of increasing awareness for energy conservation in the FCPA facilities, a facility energy coordinator will be assigned in selected facilities. The facility energy coordinator will help with coordination for implementing developed policies and procedures and facilitating energy related communications. In general, main channels for energy awareness in FCPA are:

2.1. FCPA Energy Management Teams

Other than agency management team, related branch managers are involved in the energy management program as core team and also following teams are working directly with energy management program and cooperate for raising energy awareness:

- Facilities Energy Coordinators - a team including all facilities coordinators for energy related matters, communications, and facilitation
- Internal Energy Auditors: a team including selective facilities energy coordinators and sometime related contractors

These teams participate in facilities meetings and gatherings and also during the energy audit meetings to communicate with staff regarding energy matters

2.2. Energy Management Communications

Energy management will communicate energy related policies, procedures, goals, tips, projects, monitoring reports, and energy feedback and suggestions with facilities, managers, and employees during the meetings, audits, and surveys. However, two main communication tools as described below are used for posting these matters.

2.2.a. FCPA Energy Management Webpage in FairfaxNET

As one of the energy management key communication tools, the FCPA energy management webpage is developed in the FairfaxNET to communicate energy related subjects with FCPA facilities and employees. This webpage is updated whenever required based on updated documents and information. The energy management webpage includes the latest revisions of energy policies, procedures, and messages and it provides the latest version of forms used for energy management processes. The energy management webpage also provides a suggestion box for employees to share their suggestions for energy efficiency and conservation. An image of the FCPA energy management webpage is attached in Appendix B1.

2.2.b. FCPA Newsletter

FCPA employee newsletter (ParkNews) is another channel to post energy conservation messages for facilities and staff.

2.3. Energy Management Training

Energy management will suggest and provide training opportunities based on or upon requests for facilities and employees. However energy conservation tips will be posted and communicated as explained in 2.1. For new employees, an overview of FCPA energy management program and EMP will be presented in the FCPA new employees' orientation program.

3. Facility Energy Monitoring

Energy monitoring provides feedback on operating practices, results of energy management projects, and guidance on the level of energy use that is expected in a

certain period. Energy monitoring is performed based on metering of the energy consumed.

Metering provides an essential analytical tool for analyzing energy consumption in different facilities and also for comparing different sections/equipment in each facility to the historical data and/or to the facility consumption baseline and it could help in allocating resources for FCPA utility costs.

The facility consumption baseline is defined to establish annual energy consumption for facilities. The baseline is used to track variances in consumption and to help in benchmarking of similar facilities.

The Energy monitoring will help to:

- Gather and analyze utility information
- Find out where and how much energy is being used and where
- Identify and explain increases or decreases in energy use
- Track and trend consumption and demand to monitor site performance
- Benchmark energy performance of sites and identify needs for additional attention
- Determine future energy use when considering changes
- Diagnose specific areas of wasted energy
- Observe reactions to changes in the past
- Develop performance targets for energy management projects
- Assess the operations and determine where they should be modified
- Establish target goals for attainable energy savings
- Monitor greenhouse impact

The FCPA energy management gathers FCPA facilities' energy data through SourceNet system and applies the EnergyCap system to manage, monitor, and analyze utility bills and energy data.

To use the energy monitoring tool efficiently, the following steps are taken:

- Provide a list of all FCPA utility accounts including electricity, natural gas, water, propane, and heating oil
- Provide detail information for the utility accounts including utility company, account number, meter numbers associated with each account, service address, and area of service for each account and meter
- Categorize utility accounts based on facility type, budgeting fund, and utility type
- Define a meaningful meter code for each account to facilitate data loading and generating various reports for different purposes
- Define utilities/accounts groups for analyzing and benchmarking purpose
- Establish live data process and generate appropriate reports for different purposes

3.1. Utility Accounts and Data

The FCPA utility accounts list is attached in Appendix C1. The FCPA utility accounts will be updated when changes occurred. The latest revision of the utility accounts list is posted in the FCPA energy management webpage in the FairfaxNET.

The FCPA utility accounts are categorized and coded based on facility type and financial fund and are set up in EnergyCap. Also, analysis groups of utility accounts are defined for monitoring and benchmarking purposes in this energy accounting program. A view of utility accounts, meter codes, and accounts groups in EnergyCap is attached in Appendix C2. The monthly utility data is uploaded to EnergyCap.

3.2. Review, Analysis, and Report

The utility data for FCPA facilities will be reviewed and monitored. The analysis reports for selective facilities will be generated and shared per need and upon request. The analysis and benchmarking reports will be used for planning energy related communications, energy audits, and identification of energy projects.

To more effectively communicate the utility data with park facilities, EnergyCap system will be used to provide some level of electricity, natural gas, and water data to larger facilities in a monthly/quarterly basis. The data will help Park facilities to monitor own utility usage and cost and compare the data time to time and also with a comparable baseline.

3.3. Energy Use Pattern

Energy use pattern management includes actions and behaviors that influence patterns of energy consumption in facilities, such as reduction of peak demand. By optimizing the energy use pattern, FCPA facilities are able to reduce energy bills because of lower rates in off-peak periods or reducing of demand charge for electricity. Pattern of energy use in FCPA facilities will be reviewed by energy management to provide feedback to facilities for improving patterns in using energy-consuming equipment. In addition to energy use pattern management, electric rate schedules will be reviewed by energy management for different facilities to ensure that most appropriate rate schedule is used for each facility to minimize electricity costs in the FCPA facilities.

4. Energy Feedback and Suggestions

4.1. Facility Energy Feedback and Suggestions

The facilities energy related feedback and suggestions are collected from the park facilities in different ways. The Facility Energy Feedback and Suggestions survey is

conducted in all or selected park facilities periodically to collect suggestions for facility Energy Management Opportunities (EMO) from the facilities. This survey is explained in section **V.3.a**. Employees could also share their ideas, suggestions, and feedback regarding energy management solutions for buildings, facilities operations, and equipment and also regarding energy management plan through:

- FCPA energy management webpage in FairfaxNET
<http://infoweb.fairfaxcounty.gov/parks/parkops/energymgt.htm>
- Direct communication with energy manager through email or phone

In energy related meetings and audits, the opinions could also be provided. The suggestions will be evaluated and reviewed by energy management team and appropriate actions will be considered.

4.2. Community Energy Feedback

FCPA welcomes input and feedback from communities including facility customers, facility visitors, and county residents to help shape the most effective and desirable energy conservation practices in the agency. The community feedback will be reviewed and evaluated for defining and implementing appropriate short-term and long-term energy conservation actions in the FCPA facilities. For connection with the community regarding energy management in park facilities, the following tools will be used:

- The FCPA Website via Parkmail
- The FCPA ParkTakes magazine for community
- The FCPA program evaluation

The contact information for FCPA energy management will be provided to the community in FY 2012 to receive feedback and suggestions related to energy conservation suggestions and feedback for the park facilities.

4.3. Energy Suggestions

Employees' ideas, suggestions, and feedback regarding energy management solutions for facilities' operations and equipment and also regarding energy management plan for processes and procedures can be shared through:

- FCPA energy management webpage in FairfaxNET
<http://infoweb.fairfaxcounty.gov/parks/parkops/energymgt.htm>
- Direct communication with energy manager through email or phone

The suggestions will be evaluated by energy manager and will be reviewed with cooperation of energy management team and appropriate actions will be considered if feasible.

4.4. Energy Awards

Outstanding contributions made by individual employees and teams in achieving energy efficiency and reducing energy operating costs are recognized. As part of Director's leadership award and stewardship award in FCPA, significant energy conservation efforts are identified and nominated for recognition. It will be worked in FY 2014 to present a process to specifically evaluate the employees and teams' energy conservation suggestions and efforts by a team to consider awards for significant contributions when tangible results are achieved.

5. Facility Energy Audit

Energy audit is an analysis of energy flows in a facility, process or system with the objective of understanding the energy dynamics of the system under study. An energy audit is conducted for the FCPA facilities to seek opportunities to reduce the amount of energy input into the system without negatively impacting the output(s) and also to encourage the use of effective operations, and efficient processes.

The goals of the audit for FCPA facilities are to:

- Identify the types and costs of energy use
- Understand how that energy is being used and possibly wasted
- Identify and analyze alternatives, such as improved operational techniques and/or new equipment that could substantially reduce energy costs
- Perform an economic analysis on those alternatives and determine which ones are cost-effective

Energy audits are performed to provide information about facilities regarding potential energy projects. The energy audits in the facilities can be conducted with different levels of detail and accuracy based on improvement opportunities in the facility.

To establish site goals and to identify potential energy projects, energy audits are planned and conducted by request and/or per needs in selected facilities based on energy monitoring and review on facilities information and energy data. The energy audits will be conducted internally by an in-house energy audit team (as explained in section 2.1) or by hiring energy auditing consultant based on availability of qualified auditors and

required audit tools. Results of energy audits will be documented. A format for documenting and reporting audits is attached in appendix E1.

6. Energy Project Management

Energy projects, including retrofit and alteration projects, are defined, prioritized, approved, and executed in FCPA facilities to improve energy efficiency, increase energy conservation, and reduce greenhouse gases (GHG). The projects, which are defined and planned to be funded and executed will be detailed based on a format, which is attached in appendix F1.

6.1. Project Identification

The energy projects are identified and defined based on:

- Facility energy audits
- Review of suggestions
- Emerging technology
- Equipment failure (based on feedback from maintenance management system)

6.2. Project Prioritization

The energy projects are prioritized based on:

- Amount of energy saving
- Other environmental impacts
- Safety and quality factors
- Availability of funding
- Return on Investment (ROI) and payback period
- Risk assessment of the project
- Life of equipment/structures (based on feedback from maintenance)
- Scheduled time for facilities shutdown

6.3. Project Planning

The energy projects planning include:

- Project scope
- Project phases
- Project schedule

- Project cost
- Funding source
- Project team
- Project materials supply
- Project contractors

6.4. Project Control

The energy projects control includes:

- Material control
- Cost control
- Progress control
- Quality control

7. Capital Project Review

All aspects of energy conservation are considered in designing and construction of capital projects including new construction, major renovation, and capital maintenance projects. In this regard there is cooperation among planning and development, maintenance, and energy management in reviewing plans and execution of these projects to ensure that all aspects of energy efficiency and conservation, including energy supply, energy efficient equipment, and energy efficient operations, are incorporated into the plans and considered in the project execution. There is cooperation between project team and energy management and also maintenance management and energy management to evaluate and review impacts on energy consumption by projects and retrofits. Any changes in the facility where it could have impact on utility consumption are considered. The utility change tracking process is developed and implemented to identify and track changes in the facilities utility consumption for electricity, natural gas, propane, heating oil, and water. This process tracks the changes since 2008 in implemented projects and also identifies and reviews the utility consumption changes in planned projects.

7.1. Utility Change Management

The purpose of this process is to facilitate goal setting and tracking for energy consumption and greenhouse gas (GHG) inventory program, to facilitate improving energy efficiency in the facilities, to cooperate for utilizing energy efficient practices, to facilitate calculations for energy efficiency and GHG inventory reduction efforts, and to facilitate analyzing of energy monitoring results. The process tracks utility consumption changes (increases / decreases) in the facilities because of new construction, renovation, major maintenance and retrofit, and operations (activity / service / schedule) changes. The process is implemented by cooperation of project management for new construction

and renovation projects, facility management for operations change, and maintenance management for maintenance and retrofit projects. The format for utility change reporting is attached in Appendix G1.

7.2. Energy Efficiency Review in Capital Projects

Energy efficiency considerations will be recommended to capital projects including new construction, major renovation, and major maintenance projects. There will be cooperation between capital projects and energy management teams to ensure optimum energy efficiency in plans, design features, and procurement. An energy efficiency analysis will be included in the projects planning and project management steps to analyze optimum and best practical level of energy efficiency in these projects.

8. Energy Sources and Supply

8.1. Utility Rate Negotiation and Contract

In cooperation with Fairfax County Public Utilities office, department of Cable and Consumer Services, FCPA energy management participates in the meetings with Virginia Energy Purchasing Governmental Association (VEPGA) and Northern Virginia Electric Cooperative (NOVEC) to negotiate energy rates with power companies. The VEPGA agreement in principal is attached in appendix H1.

Also, FCPA energy management watches the natural gas rates in the market to identify and lock in (if appropriate) the rate for natural gas supply to FCPA facilities.

8.2. Renewable Energy

As alternative energy source, renewable energy sources will be considered for FCPA energy supply. Solar energy will be evaluated as an alternative energy source to electricity and natural gas. Solar energy could be used to pre-heat domestic hot water or to generate electricity directly. Using other renewable energy sources, such as wind energy, geothermal, and cogeneration systems will be considered when they are feasible and cost effective. Since technologies regarding energy are fast growing, feasibility and cost effectiveness for using renewable energy is evaluated annually for FCPA facilities and projects to be used as an alternative energy source when feasible and cost effective.

Appendices

A: Energy Policy and Goal Setting Appendices

Appendix A1: Fairfax County Energy Policy

Fairfax County Energy Policy

I. Purpose

To formally adopt an Energy Policy to assist and guide County agencies, schools, and authorities in:

- promoting energy efficiency and conservation in County buildings, facilities, operations, and vehicles;
- promoting energy efficiency and conservation practices among County employees, employers, and residents;
- advancing the goal of reducing energy consumption; and
- supporting the Board's Environmental Agenda and the Cool Counties Climate Stabilization Initiative.

II. Background

The Board of Supervisors' Environmental Agenda describes environmental stewardship as both a key responsibility and a critical legacy of any elected public body. Essential elements of the Environmental Agenda include the efficient and prudent use of energy resources, the promotion of energy conservation, support for alternative energy sources, and outreach to County employees, employers, and residents.

Energy efficiency and conservation are vital components of intergovernmental environmental efforts. Local government actions play a fundamental role in implementing these energy efficiency and conservation efforts.

Over a number of years, Fairfax County agencies, schools, and authorities have made notable strides towards improving the energy efficiency of their buildings, facilities, operations, and vehicles. However, by coordinating efforts, setting goals, and implementing energy-saving and alternative-energy projects and technologies, the County can make further progress in saving energy, thereby reducing emissions.

In response to the need to increase and encourage coordination of resources, the County Executive has established an Energy Efficiency and Conservation Coordinating Committee. This Committee will serve as a comprehensive interagency forum for cross-organizational collaboration and coordination of energy efficiency and conservation efforts. In evaluating strategies and projects, the Committee will consider return on investment, which includes short- and long-term tangible and intangible benefits. Although the Committee's focus is energy efficiency and conservation, it is anticipated that its work will also advance the County's environmental goals.

The establishment of a formal Energy Policy will provide guidance and direction to the Committee in its efforts to develop a comprehensive energy program that can proactively promote the development and application of energy efficiency and conservation programs. This policy will aid in the coordination and collaboration with County agencies, schools, and authorities, and residents, employers, and governmental partners.

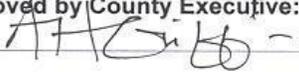
III. Policy

It is the policy of Fairfax County government to promote the following measures in order to conserve and manage energy resources in a pragmatic way based on a review of the costs and benefits that is consistent with the Board of Supervisors' Environmental Agenda and the Cool Counties Climate Stabilization Initiative:

- energy efficiency and conservation in buildings, facilities, operations, and vehicles;
- the use of alternative and sustainable energy options;
- waste reduction and recycling;
- the use of more fuel efficient and alternative fuel vehicles in an appropriately-sized County transportation fleet;
- implementation of energy efficiency and conservation projects that have a return on investment which includes short- or long-term tangible or intangible benefits, and support environmental goals;
- distributed energy projects in which energy is generated on-site, rather than transmitted;
- land use patterns and transportation systems that serve to reduce energy usage;
- intergovernmental energy efficiency efforts; and
- energy efficiency and conservation efforts by County employees, employers, and residents.

<http://www.fairfaxcounty.gov/living/environment/county-energy-policy.htm>

Appendix A2: Fairfax County Procedural Energy Policy

Fairfax County, Virginia PROCEDURAL MEMORANDUM, No. 25-29	
To: Department Heads	Date: March 12, 2010
Initiated by: Facilities Management Department	Reference: Approved by County Executive: 
Subject: Energy Policy	

I. **Purpose:**

The purpose of the policy is to assist with the goal of reducing energy consumption in County facilities while providing a comfortable working environment for the building occupants.

II. **Background:**

Whereas the initial design of a building plays a large role in a facility's energy use, other controllable factors have a large impact on the overall building energy consumption. For example, thermostat set points, run time for equipment/lights, the use of plug in appliances, and building occupancy patterns all have a major impact on the energy use for a facility. Controlling these factors in reasonable ways can dramatically lower the total energy consumption in County facilities.

The County pays a significant amount of funds per year for its electricity, natural gas, and water. Energy consumed by Fairfax County Government facilities produces around one million tons of carbon dioxide per annum. Given the monetary and environmental costs associated with energy use, it is the responsibility of all users of County facilities to ensure that the County's energy resources are used efficiently.

III. **Policy:**

The policy of Fairfax County Government is to control energy consumption in order to:

- Avoid unnecessary expenditure on utilities.
- Improve cost-effectiveness.
- Protect the environment.
- Prolong the life of useful fossil fuels.

Adherence to this policy will substantially reduce total energy consumption, thereby reducing both the County's energy costs and its energy related emissions. In a continuing effort to support Fairfax County Government energy control efforts, this policy sets forth the following:

A. Temperatures will be set by facilities staff to operate within the ranges listed below for occupied hours. Occupied hours are defined as the span of normal work hours for the majority of the occupants. Facilities staff sets these temperatures either locally at the thermostats or remotely through the Energy Management system depending on the facility. Facilities staff is responsible for making temperature adjustments. Temperature adjustments by non-authorized individuals are not permitted.

1. Temperatures during scheduled occupied hours:

Offices	Indoor Summer Temperature Range	74° - 77° F
	Indoor Winter Temperature Range	69° - 72° F
Warehouses/Garages/Apparatus Bays	Indoor Winter Temperature Range	55° - 65° F

2. Temperature set points during unoccupied hours are 55 degrees during the heating season and 85 degrees in the cooling season.

B. The use of personal electric heaters, refrigerators, coffee pots, toasters, microwaves, large fans, and other appliances is not permitted. Any such appliances are to be centrally located in designated kitchenettes.

Note: Any devices which pose safety hazards will be removed immediately in order to assure a safe work environment for everyone.

C. Keep all operable doors and windows closed when heating and/or cooling equipment are in operation.

D. In office facilities with automatic lighting controls, overhead lighting will not be energized for individuals working after hours. The use of task lighting in each work station should be used.

E. It is impractical to engage major mechanical building systems such as chillers, boilers, and large air handling units to accommodate individuals working after hours. Exceptions for major events or special workgroup assignments to provide heating/cooling will be reviewed on a case by case basis. Minimum cooling and heating levels are provided after hours.

F. Whenever possible, keep window blinds closed in summer months to reduce direct solar gain.

IV. Objectives:

The objectives of this policy are:

- A. To reduce energy consumption a minimum of 1% per year, measured in Kbtu /S.F. for the facilities in the County inventory.
- B. To ensure commitment is obtained from staff at all levels within the Fairfax County Government on aspects of energy efficiency under their control.
- C. To make staff and visitors aware of the important contribution each member can make to conserve energy while maintaining acceptable environmental conditions.
- D. To reduce the amount of pollution caused by energy usage.
- E. To support and invest in projects to reduce energy usage across Fairfax County Government facilities.

V. Process / Compliance:

- A. Agency heads shall be responsible for monitoring and controlling those areas under their control to ensure compliance.
- B. Employees in violation of these regulations may be subject to disciplinary action as provided in the Personnel Rules and Regulations.

VI. Responsibility:

The responsibility for compliance with the Energy Policy resides at all levels of the County Organization.

Appendix A3: Park Facilities Temperature Set Points

Temperature Set Points for Park Facilities					
Type of Facility / Space	Heating Season Temperature Range (° F)	Cooling Season Temperature Range (° F)	Heating Season Night Set Back Temperature (° F)	Cooling Season Night Set Back Temperature (° F)	Recommendation
Offices	69 - 72	74 - 77	55	85	This is in compliance with the County Procedural Energy Policy
Warehouses/Garages/Apparatus Bays	55 - 65	N/A	55	N/A	
Maintenance Shops	55 - 65	N/A	55	N/A	
Fitness Centers	68 - 72	68 - 72	60	80	If according to facility activity schedule, a space remains unoccupied for over three hours, then use the same setting as night set back temperature for that period of time until an appropriate time (preferably within one hour) before the next schedule starts
Multi-Purpose Activity Rooms	66 - 70	69 - 71	60	80	
Child Day Care Centers	68 - 72	74 - 77	60	80	
Locker Rooms Area	72 - 76	75 - 78	60	80	
Racquetball Courts	68 - 70	69 - 71	65	75	
Gymnasiums	67 - 69	72 - 74	60	80	
Ice Rinks	50 - 52	53 - 55	N/A	N/A	
Natoriums Area	83 - 85	83 - 85	N/A	N/A	
Pool Water Temperature	82 - 84	82 - 84	N/A	N/A	
Spa Water Temperature	102 - 104	102 - 104	N/A	N/A	Cover the spa when the natatorium is closed
Showers Water Temperature	105 - 110	105 - 110	N/A	N/A	
Nature Centers Exhibit Area	68 - 70	75 - 77	N/A	N/A	Apply night set back temperatures wherever it is possible in the building
Glasshouses / Polyhouses	63 - 65	N/A	N/A	N/A	
Historic Sites / Museums / Collections	66 - 70	70 - 75	N/A	N/A	
Non Staff / Vacant Buildings and Houses with Water	50	85	N/A	N/A	
Bathhouses/Outdoor Restrooms/Irrigation Pump Houses	50	N/A	N/A	N/A	No need for heat if building is winterized

Appendix A5: FCPA Energy Management Goals

FCPA Energy Management Goals

- Improve energy efficiency, minimize energy waste, and reduce GHG production in FCPA facilities
- Improve level of preventive and proactive maintenance in the facilities where they are cost effective and reduce/eliminate energy waste
- Improve level of energy monitoring and measurement where it can improve tracking, analyzing, and benchmarking for facilities energy usage
- Improve level of energy conservation awareness in employees and FCPA customers
- Improve contribution of FCPA employees and customers in energy conservation through suggestions system
- Increase use of alternative and renewable energy sources where it is feasible
- Upgrade existing energy consuming equipment and systems to more efficient in FCPA facilities where it is cost effective
- Upgrade control systems for more wisely use of energy and water in FCPA facilities
- Improve level of energy efficiency in new construction and major renovation projects
- Increase achievement of energy related standards/criteria in existing and new construction facilities such as LEED criteria
- Create energy and water usage baselines for facilities based on historical data, standards, and industry average
- Improve electricity use pattern in the facilities to reduce on peak usages and decrease electricity bills

B: Networking and Energy Awareness Appendices

Appendix B1: EECCC Charter

Energy Efficiency and Conservation Coordinating Committee

This charter is intended to promote a common understanding of the committee's purpose, objectives, scope, membership, and process.

Purpose

The purpose of the Energy Efficiency and Conservation Coordinating Committee is to advance the county's corporate and environmental stewardship goals by coordinating energy efficiency and conservation planning across county agencies, schools, and authorities and by disseminating information regarding energy efficiency and conservation to county employees, businesses, and residents.

The Energy Efficiency and Conservation Coordinating Committee is intended to facilitate cross-organizational education and collaboration. Because member organizations comprise a system of interconnected entities, the benefits of education and collaboration on energy efficiency and conservation matters extend beyond direct participants.

Objectives

The objectives of the Energy Efficiency and Conservation Coordinating Committee are to:

- formulate, adopt, and update county energy efficiency and conservation policy and goals for dissemination to county agencies, schools, and authorities;
- oversee the implementation of energy policies in Fairfax County;
- periodically identify and suggest recommended plans, policies, and programs, including best practices, to county agencies, schools, and authorities;
- recommend, support, and review legislation;
- ensure that the county's Comprehensive Plan, Code, and ordinances align with the county's energy efficiency and conservation policies and practices;
- encourage county agencies, schools, and authorities to:
 - participate in and direct studies, research, tests, and evaluations of new energy efficiency approaches, measures, practices, and equipment;
 - develop new and innovative goals and objectives in response to arising energy concerns and issues in the county; and
 - expand the use of alternative energy sources;

- represent the county on local, state, and regional energy-related task forces and committees;
- establish liaison(s) with agency outreach coordinators to serve as a conduit for energy efficiency and conservation information and materials;
- plan and direct energy efficiency monitoring and reporting; and
- monitor and assess energy management program budget preparation, responsibilities, and administration.

Scope

The Energy Efficiency and Conservation Coordinating Committee (EECCC) has been created to ensure coordination of energy efficiency and conservation across County departments, schools and authorities. It is not intended to supplant or supersede any individual organization's specific roles and responsibilities with respect to energy programs, initiatives, and strategies or the purchase, management, or consumption of energy.

The scope of energy efficiency and conservation issues addressed by the EECCC is broad, including but not limited to: energy usage and management practices; energy technologies, including those relating to heating, cooling, lighting, engines, pumping, and transportation; developments in conventional, alternative, and renewable energies; and electricity generation and distribution, including combined heat and power and distributed generation. The EECCC addresses issues on a near-term and longer-term basis, as warranted.

Recognizing that federal and state legislation and administrative proceedings may affect county energy policies and practices, the EECCC keeps abreast of relevant legislation and administrative proceedings. As appropriate, the committee may develop legislative or administrative proposals that advance its objectives.

Membership

The Energy Efficiency and Conservation Coordinating Committee includes members from the following agencies and organizations:

- Office of the County Executive
- Environmental Coordinator
- Department of Cable Communications and Consumer Protection
- Department of Facilities Management
- Department of Housing and Community Development
- Department of Information Technology
- Department of Management and Budget

- Department of Planning and Zoning
- Department of Public Works and Environmental Services
- Department of Purchasing and Supply Management
- Department of Transportation
- Department of Vehicle Services
- Fairfax County Park Authority
- Fairfax County Public Schools
- Fairfax Water
- Office of Public Affairs

Other organizational entities identified by the group may be invited to join.

Members speak on behalf of the organizations they represent and participate in the development of recommendations.

Process

Meetings of the Energy Efficiency and Conservation Coordinating Committee are held monthly, although the group may agree to an alternate schedule or to meet at the call of the Chair.

The Deputy County Executive convenes and chairs meetings but may designate a substitute to convene and chair one or more meetings. The Chair ensures the preparation and distribution of an agenda and accompanying materials, if any, and the preparation and distribution of meeting minutes.

EECCC members recognize each other as equal participants and contributors to the committee process, demonstrate mutual respect for each other; and consider themselves and the organizations they represent as parts of a larger, integrated whole.

Where possible, EECCC members attempt to achieve consensus on decisions or recommendations made by the group. For the purpose of this charter, consensus is defined as active participation and the agreement or support of a majority of members in attendance. Committee members are expected to consult with their respective organizations to ensure understanding and acceptance of agreements reached by the committee.

From time to time the group may establish subcommittees to address particular issues or topics. Members of the subcommittee determine the frequency and timing of meetings. Subcommittees may be asked to periodically report on the progress or status of their tasks and, at the conclusion of a task, are expected to produce results or recommendations for consideration by the full committee.

Appendix B2: FCPA Energy Management Webpage in FairfaxNET

FCPA

Fairfax County
Park Authority

Division / Branch Jump:

Energy Management

FCPA energy management mission is to develop, implement, and manage an energy management program for Park facilities. Under this program energy projects and activities are planned, organized, directed, coordinated, and supervised; energy audits are initiated; awareness of energy management and conservation are increased within the agency; and facility improvement and new construction projects are reviewed with regard to energy efficiency.

This webpage provides information and updates about the agency energy management program including energy policy, energy goals, energy related procedures, energy projects, and energy plan. Also this page provides a suggestion box for employees to share ideas and feedback regarding energy efficiency and conservation actions.

Please contact Davood Majidian at 703-324-8533 or [via_email](#) with any questions.

Energy Policy

- [The County Energy Policy](#)
- [The County Procedural Energy Policy](#)
- [The Park Facilities Temperature Set Points](#)

Energy Plan

- [FCPA Energy Management Plan FY15 – FY17](#)

Comments and Suggestions

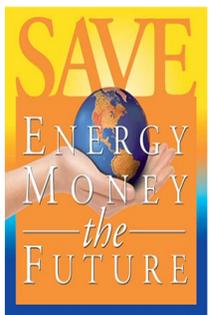
Please provide suggestions below:

For a response, provide contact information below.
(This is optional.)

Your Name:

Phone:

E-mail Address:



SAVE
ENERGY
MONEY
— the —
FUTURE

Please report any energy-related opportunities and changes in your facility via forms below:

- [Opportunity Reporting Form](#)
- [Changes Reporting Form](#)

C: Energy Monitoring Appendices

Appendix C1: FCPA Utility Accounts - Facilities (Elec. & N. Gas & Water)

Meter Code	Facility Name	Initial	Index Code	Address
FCPA-ATL01-BK	Backlick Park	BK	986190	4516 Backlick Rd., Annandale, VA 22003
FCPA-ATL02-MV	Mt. Vernon Area 3	MV	986190	8426 Old Mt. Vernon Rd., Alexandria, VA 22309
FCPA-ATL03-OL	Olney Park	OL	986190	1840 Olney Road, Falls Church, VA 22043
FCPA-ATL04-EC	E.C. Lawrence ???	EC	986190	4515A Stringfellow Road, Chantilly VA 20151
FCPA-ATL05-HF	Howery Field	HF	986190	5100 Glenn Park Rd., Annandale, VA 22003
FCPA-ATL06-PA	Patriot Park West	PA	986190	12111 Braddock Rd, Fairfax VA
FCPA-ATL07-CB	Clermont Ballfields	CB	986190	4100 Franconia Road, Alexandria, VA 22310
FCPA-ATL08-FF	Franklin Farm	FF	986190	13590 Franklin Farm Rd., Herndon, VA 22071
FCPA-ATL09-GM	Grist Mill	GM	986190	4710 Mt. Vernon Mem. Hwy., Alexandria, VA 22309
FCPA-ATL10-HO	Hooes Road Park	HO	986190	7233 Hooes Rd, Springfield, VA 22150
FCPA-ATL11-LG	Larry Graves Park	LG	986190	312 Hillwood Avenue
FCPA-ATL12-ML	Manchester Lakes Pk	ML	986190	6775 I Zohra Court (formerly labeled here as Beulah Pk)
FCPA-ATL13-PS	Plineridge School Site	PS	986190	3401 Bannewood Drive, Annandale, VA
FCPA-ATL14-SW	Stratton Woods Park	SW	986190	2441 Fox Mill Rd, Herndon, VA 20171
FCPA-ATL15-SF	Stringfellow Park	SF	986190	Autumn Willow Drive/13208 Lee Hwy.
FCPA-ATL16-AL	Alabama Drive Park	AL	986190	1200 Alabama Drive, Herndon, VA 22070
FCPA-ATL17-AR	Arrowhead Pk	AR	986190	5200 Arrowhead Park Dr, Centreville, Va 20120
FCPA-ATL18-BC	Baron Cameron	BC	986190	11300 Baron Cameron Avenue, Reston, VA
FCPA-ATL19-BU	Beulah Park	BU	986190	7119 Beulah Street, Alexandria, VA 22310
FCPA-ATL20-BY	Byron Avenue	BY	986190	6500 Byron Avenue, Springfield, VA 22150
FCPA-ATL21-CH	Cunningham Park	CH	986190	1001 Park St., SE, Vienna, VA 22180
FCPA-ATL22-FM	Fox Mill / Fred Crabtree	FM	986190	2801 Fox Mill Road, Herndon, VA 20171
FCPA-ATL23-GF	Great Falls /Nike Pk	GF	986190	1089 Utterback Store Rd., Great Falls, VA 22066
FCPA-ATL24-GB	Greenbriar Park	GB	986190	4718 Stringfellow Road, Chantilly, VA 22021
FCPA-ATL25-LW	Lewinsville Park	LW	986190	1659 Chain Bridge Rd, McLean, VA 22101
FCPA-ATL26-ML	Marlin Luther King	ML	986190	8115 Fordson Road, Alexandria, VA 22306
FCPA-ATL27-MD	Mason District Park	MD	986190	6600 Columbia Pike, Annandale, VA 22003
FCPA-ATL28-NW	Nottoway Park	NW	986190	9601 Courthouse Rd., Vienna, VA
FCPA-ATL29-OH	Ossian Hall Pk	OH	986190	7900 Heritage Dr., Annandale VA 22003
FCPA-ATL30-PT	Poplar Tree	PT	986190	4718 Stringfellow Road, Chantilly, VA
FCPA-ATL31-RV	Rolling Valley West	RV	986190	6512 Sydenstricker Rd. Burke, VA 22015
FCPA-ATL31-RV	Rolling Valley West	RV	986190	6512 Sldenstriker Road, Burke, VA 33015
FCPA-ATL32-SB	Sandburg Middle School	SB	986190	8428 Fort Hunt Rd., Alexandria, VA 22308
FCPA-ATL33-TW	Towers Park	TW	986190	9350 Arlington Blvd #LTS, Fairfax, VA 22031
FCPA-ATL34-WB	Wakefield Park-Balifields 3&4	WB	986190	8100 Braddock Rd., Annandale, VA 22003
FCPA-ATL35-WF	Wakefield Balifield1	WF	986190	8100 Braddock Rd., Annandale, VA 22003
FCPA-ATL36-LV	Lewis Lincoln-Vannoy	LV	986190	5400 Willow Spings School Rd / Balifield
FCPA-ATL37-DC	Duiles Corner Park	DC	986190	13959 Mansarde Ave, Herndon, VA 20171
FCPA-ATL38-FN	Franconia Park	FN	511592	6432 Bowie Drive, Springfield, VA
FCPA-ATL39-HC	Hutchinson School Site	HC	986190	13209 Parcher Ave, Herndon, VA 20170
FCPA-ATL40-BD	BRADDOCK PARK	BD	986190	13241 Braddock Rd., Clifton, VA 22024
FCPA-ATL41-LE	Lee High Park	LE	511592	6615 Deepford Rd., Springfield, VA
FCPA-ATL42-WG	Westgate Park-Area I	WG	511592	7508 Magarity Road, Falls Church, VA 22043
FCPA-ATL42-WG	West Gate Park	WG	986190	7508 Magarity Road
FCPA-ATL43-AB	Arrowbrook Park	AB	986190	2351 Field Point RD, #A, Herndon, VA 20171
FCPA-ATL44-LF	Lake Fairfax	LF	986190	1400 Lake Fairfax Drive, Reston, VA 22090
FCPA-ATL45-FV	Forestville Elementary	FV	986190	11022a Leesburg Pike
FCPA-ATL46-CB	Chantilly Library Site	CB	986190	4000 I Stringfellow Road
FCPA-ATL47-JS	J.E.B. Stuart	JS	986190	3312 Peace Valley Lane, Falls Church, VA
FCPA-ATL48-SR	South Run Park Fields	SR	986190	9401- A Pohick Road, Springfield, VA
FCPA-ATL49-MA	Mason Neck West Pk	MA	986190	10418 Old Colchester Rd, Lorton, VA 22079
FCPA-ATL50-ID	Idylwood Park	ID	986190	7715 Virginia Lane
FCPA-ATL99-TC	Turf Crew	TC	986190	Hydrant Meter rentals and water usage
FCPA-GLF01-BL	Burke Lake Park	BL	519421	7315 Ox Road, Fairfax Station, VA 22039
FCPA-GLF02-GD	Greendale Golf	GD	519454	6900 Telegraph Road, Alexandria, VA
FCPA-GLF03-JF	Jefferson Golf	JF	519488	7900 Lee Highway, Falls Church, VA 22043
FCPA-GLF04-LH	Laurel Hill Golf Club	LH	519547	8700 I Laurel Crest Dr
FCPA-GLF05-OM	Oak Marr G.C.	OM	519223	3134B Jermantown Road, Oakton, VA
FCPA-GLF06-PC	Pinecrest Golf	PC	519512	6600 I Little River Tp
FCPA-GLF07-TL	Twin Lakes Golf	TL	519546	6100 Clifton Rd., Clifton, VA 22024

9:17 AM

Meter Code	Facility Name	Initial	Index Code	Address
FCPA-HPR01-CM	Cabell's Mill- Unit A	CM	518399	5235 Walney Road, Centreville, VA 20120
FCPA-HPR02-CL	Clark House	CL	518399	6337 Columbia Pike, Annandale, VA 22003
FCPA-HPR03-GF	Great Falls Grange	GF	518399	9818 Georgetown Pike, Great Falls, VA 22066
FCPA-HPR04-SB	Stoneybrooke	SB	518399	6729 S. Kings Hwy, Alexandria, VA 22306
FCPA-HPR05-WC	Wakefield Chapel	WC	518399	8420 Toll House Rd., Annandale, VA
FCPA-HPR06-NW	Nottoway House	NW	518399	9537 Courthouse Rd., Vienna, VA 22181
FCPA-HPR07-DR	Dranesville Tavern	DR	518399	11919 Leesburg Pike, Herndon, VA 22070
FCPA-LPK01-BL	Burke Lake Park	BL	519819	7315 Ox Road, Fairfax Station, VA
FCPA-LPK02-LF	Lake Fairfax	LF	519835	1400 Lake Fairfax Drive, Reston, VA 22090
FCPA-LPK03-LA	Lake Accotink Park	LA	517169	5660 Hemming Avenue., Springfield, VA
FCPA-M3C01-CJ	Clemontinr Park	CJ	519855	6319 Georgetown Pike, McLean, VA 22101
FCPA-M3C02-ML	Martin Luther King	ML	517177	8115 Fordson Road, Alexandria, VA
FCPA-PRK01-BR	Bruin Park	BR	511592	415 Van Buren Street, Herndon, VA 22070
FCPA-PRK02-NW	Nottoway	NW	511592	9601 Courthouse Rd., Vienna, VA 22180
FCPA-PRK03-OH	Ossian Hall Pk	OH	511592	7900 Heritage Dr #BKT., Annandale VA 22003
FCPA-PRK04-SR	South Run - Area 4	SR	511592	9501 Pohick Rd, Springfield, VA 22153
FCPA-PRK05-BS	Burke Station	BS	511592	6031 E. Kernwood Street, Burke, VA 22015
FCPA-PRK06-CA	Camelet Elementary	CA	511592	8100 Guinevere Drive, Annandale, VA 22003
FCPA-PRK07-CO	Cooper School	CO	511592	0977 Balls Hill Road, McLean, VA 22101
FCPA-PRK08-JM	Jefferson Manor	JM	511592	2909 Farmington Drive Park, Alexandria, VA 22303
FCPA-PRK09-KP	Kings Park Tennis	KP	511592	8700 Trafalgar Ct., Springfield, VA 22151
FCPA-PRK10-DU	Levelle Dupell Park	DU	511592	5812 Newington Road, Newington, VA 22122
FCPA-PRK11-LT	Lynway Terrace	LT	511592	6298 Linway Terrace, McLean, VA 22101
FCPA-PRK12-MC	McLean Central Pk.	MC	511592	1468 Dolley Madison Blvd., McLean, VA 22101
FCPA-PRK13-MV	Mt. Vernon Park	MV	511592	8426 Old Mt. Vernon Rd., Alexandria, VA 22309
FCPA-PRK14-MW	Mt. Vernon Woods	MW	511592	4014 Fielding Street, Alexandria, VA 22309
FCPA-PRK15-AN	Annandale Park	AN	511592	4100 Hummer Rd & Royce St, Annandale, VA
FCPA-PRK16-RT	Roundtree Park	RT	511592	3320 Annandale Road, Falls Church, VA
FCPA-PRK17-ST	Stratford Landing	ST	511592	8600 Stimup Lane, Alexandria, VA 22308
FCPA-PRK18-SR	Stuart Road Park	SR	511592	12001 Lake Newport Road, Reston, VA
FCPA-PRK19-TF	Turner Farm	TF	511592	10609 Georgetown Pike, Great Falls, VA 22066
FCPA-PRK20-CW	CHALET WOODS PK	CW	511592	14912 Cranoke Street, Centreville, VA
FCPA-PRK21-LE	Lee High School	LE	511592	6501 Deepford Street, Springfield, VA 22150
FCPA-PRK22-ID	Idylwood Park	ID	511592	7715 Virginia Ave, Falls Church, VA 22043
FCPA-PRK23-LD	Lee District	LD	511592	6601 Telegraph Rd., Alexandria, VA 22310
FCPA-PRK24-CH	Cunningham Park	CH	511592	1001 Park Street, S.E., Vienna, VA 22180
FCPA-PRK25-SA	Sandburg Middle School	SA	511592	8428 Fort Hunt Road, Alexandria, VA 22308
FCPA-PRK26-GB	Greenbriar Park	GB	511592	13200 Melville Lane, Fairfax, VA 22033
FCPA-PRK27-NW	Nottoway	NW	511592	9601 Courthouse Rd., Vienna, VA 22180
FCPA-PRK28-WF	Wakefield Park Area2	WF	511592	8100 Braddock Rd., Annandale, VA 22003
FCPA-PRK29-WG	Westgate Park	WG	511592	7508 Magarity Road, Falls Church, VA 22043
FCPA-PRK30-PK	Packard Center	PK	511592	4030 Hummer Road Annandale, VA 22003
FCPA-PRK31-WM	Whitman MS	WM	511592	2500 Collingwood Road, Alexandria, VA 22308
FCPA-PRK32-TH	Toll House	TH	511592	7300 Little River Turnpike, Annandale, VA 22003
FCPA-PRK33-EM	Eakin Mantua	EM	511592	8928 Glenbrook Rd, Fairfax, VA
FCPA-PRK34-GG	George Mason Park	GG	511592	9700 Braddock Road, Fairfax, VA
FCPA-PRK35-BE	Bailey's Elementary	BE	511592	6111 I Knollwood Dr.
FCPA-PRK36-FG	Franklin Glen Park	FG	511592	13395 Springhaven Dr., Chantilly, VA
FCPA-PRK37-BK	Brookfield	BK	511592	7417 Floyd Avenue, Springfield, VA
FCPA-PRK38-PG	Pineridge School Site	PS	511592	3401 Woodburn Road, Annandale, VA
FCPA-PRK39-BH	Broyhill Crest	BH	511592	7128 Murray Lane, Annandale, VA
FCPA-PRK40-LC	Lillian Carey	LC	511592	6000 Summers Lane, Falls Church, VA

Meter Code	Facility Name	Initial	Index Code	Address
FCPA-REC01-AM	Audrey Moore Rec	AM	518183	8100 Braddock Rd., Annandale, VA 22003
FCPA-REC02-CR	Cub Run REC	CR	518192	4630 Stonecroft Blvd, Chantilly VA
FCPA-REC03-GW	George Washington REC	GW	518449	8426 Old Mt. Vernon Rd., Alexandria, VA 22309
FCPA-REC04-LD	Lee District Rec	LD	518456	6601 Telegraph Road, Alexandria, VA
FCPA-REC05-MV	Mt. Vernon Rec	MV	518472	2017 Belle View Blvd, Alexandria, VA 223704
FCPA-REC06-OM	Oak Marr Rec	OM	518142	3200 Jermantown Road, Oakton, VA
FCPA-REC07-PR	Providence Rec	PR	518159	7525 Marc Dr., Falls Church, VA 22042
FCPA-REC08-SR	South Run Rec	SR	518167	9501 Pohick Road, Springfield, VA
FCPA-REC09-SH	Spring Hill Rec	SH	518175	1239 Springhill Rd., Molean, VA 22101
FCPA-RMD01-HO	Hidden Oaks Nature	HO	511782	4030 Hummer Road, Annandale, VA 22003
FCPA-RMD02-HP	Hidden Pond	HP	511816	8510 Greeley Blvd., Springfield, VA
FCPA-RMD03-HM	Huntley Meadows	HM	511824	3701 Lockheed Blvd., Alexandria, VA 22310
FCPA-RMD04-RB	Riverbend Park	RB	511832	8700 Potomac Hill St., Great Falls, VA 22066
FCPA-RMD05-EC	Walney House/ E.C.	EC	511758	5040 Walney Road, Chantilly VA 22151
FCPA-RMD06-EF	Elmore Farm	EF	518126	2739 West Ox Road, Herndon, VA
FCPA-RMD07-GS	Greenspring Gardens	GS	511774	4601 Green Spring Road, Alexandria, VA
FCPA-RMD08-CV	Colvin Run Mill	CV	511733	10017 Colvin Run Mill, Great Falls, VA
FCPA-RMD09-FP	Frying Pan - Floris Park	FP	511766	2615 Centreville Rd., Herndon, VA 22071
FCPA-RMD10-SU	Sully Plantation	SU	511840	3650 Historic Sully Way, Chantilly, VA 20151
FCPA-RMD11-HS	Huntley Mansion	HS	511592	7000 Hamson Lane, Alexandria, VA 22306
FCPA-RMD12-LM	Lamond Property	LM	511717	7509 Fort Hunt Rd., Alexandria, VA 22307
FCPA-RMD13-TF	Turner Farm House	TF	511717	10609 Geometown Pike, Great Falls, VA 22066
FCPA-RMD14-AG	Ashgrove House	AG	511717	8801 Ashgrove Lane, Vienna, VA
FCPA-RMD15-MG	Mt Gilead Rd Property	MG	511717	5714 Mt Gilead Rd, Centreville, VA 20120
FCPA-RMD16-EN	Envedl Property	EN	511717	10605 Furnace Rd, Lorton, VA 22079
FCPA-RRP01-IS	Ingleside Property 1	IS	518126	1312 Ingleside Ave, McLean, VA 22101
FCPA-RRP06-CL	Clark House	CL	518126	6332-A Barcroft Mews Dr., Falls Church, VA
FCPA-RRP08-MD	Mc Dannald House	MD	518126	11903 Leesburg Pike, Herndon, VA 22070
FCPA-RRP14-GA	Gabrielson House	GA	518126	2514 Leeds Rd., Oakton, VA 22124
FCPA-RRP16-HS	Huntley Mansion (Rental tenant)	HS	518126	7000 Hamson Lane, Alexandria, VA 22306
FCPA-RRP18-HM	Huntley Meadows Tenant Hse	HM	518126	6901 S. Kings Hwy., Unit B, Alexandria, VA 22310
FCPA-RRP20-LY	Lahey Property	LY	518126	9750 Brookmeadow Dr, Vienna, VA 22182
FCPA-RRP24-LW	Lewinsville	LW	518126	1659 Chain Bridge Rd., Molean, VA 22101
FCPA-RRP26-BT	Marie Butler/Leven Preserve	BT	518126	1477 Kirby Road, Molean, VA 22101
FCPA-RRP32-KH	Riverbend Key House / Gate	KH	518126	8911 Weant Drive, Great Falls, VA 22066
FCPA-RRP34-PO	Riverbend Potomac House	PO	518126	8800 Potomac Hill Street, Great Falls, VA 22066
FCPA-RRP38-MG	Mt. Gilead House	MG	518126	5634 Mount Gilead Rd, Centreville, VA
FCPA-RRP39-WM	Waples Mill House	WM	518126	11329 Waples Mill Dr, Oakton, VA
FCPA-RRP40-FR	Frey Property House	FR	511204	5201 Walney Rd, Chantilly, VA 20151
FCPA-RRP41-MN	Minnick Prop House	MN	518126	10419 Old Colchester Rd, Lorton, VA 22079
FCPA-RRP42-TS	Tolson Property	TS	518126	10400 Old Colchester Rd, Lorton, VA 22079
FCPA-RRP43-FS	Frances Martin House	FS	518126	4300 Braddock Road, Alexandria, VA 22312
FCPA-RRP96-WT	White house property	WT	518126	3301 Hawthorne Lane, Falls Church
FCPA-RRP97-CP	Packard Center	CP	518126	4100 Hummer Road & Royce St, Annandale, VA
FCPA-RRP98-DB	DeBoeck Property House	DB	518126	4509 Green Spring Rd, Alexandria, VA
FCPA-RRP99-HG	Hogge House	HG	518126	3139 Glen Carlyn Rd, Falls Church, VA
FCPA-GHP01-A1	Area 1 Maint. Shop	A1	511592	1929 Pimmit Drive, Falls Church, VA 22043
FCPA-GHP02-A2	Area 2/Turf Crew Maint. Shop	A2	511592	8116 Braddock Rd, Annandale, VA
FCPA-GHP03-A3	Area 3 Maint. Shop	A3	511592	6901 S. Kings Hwy., Alexandria, VA 22310
FCPA-GHP04-A4	Burke Lake Maint. Shp.	A4	511592	10401 Burke Lake Road, Fairfax, VA
FCPA-GHP05-A5	Area 5/Forestry/Mobile Crew M. Shop	A5	511592	4501 Brookerfeld Corp., Drive, Chantilly, VA 22021
FCPA-GHP06-A6	Lake Fairfax	A6	511592	1400 Lake Fairfax Drive, Reston, VA
FCPA-GHP99-HR	Facility Maintenance	HR	511873	4030 Hummer Road, Annandale, VA 22003

Appendix C2: Energy Monitoring Software, EnergyCap

Account Setting

Facility Manager

- FCPA-PR02-01 (Sun Park)
- FCPA-PR02-04 (Winton)
- FCPA-PR02-04 (Sunset Hill Park)
- FCPA-PR02-04 (Sunset Park)
- FCPA-PR02-01 (Bucke Lake)
- FCPA-PR02-04 (Carnegie Elementary)
- FCPA-PR02-02 (Casper School)
- FCPA-PR02-04 (Jefferson Manor)
- FCPA-PR02-04 (Kings Park Tennis)
- FCPA-PR02-01 (Lynnda Chapel Park)
- FCPA-PR02-11 (Lynne Terrace)
- FCPA-PR02-11 (C. Nelson Center Park)
- FCPA-PR02-14 (J.C. Vernon Park)
- FCPA-PR02-14 (W. Vernon Wood)
- FCPA-PR02-14 (Kendall Park)
- FCPA-PR02-14 (Pleasant Hill)
- FCPA-PR02-17 (Statens Landing)
- FCPA-PR02-19 (Shaw Road Park)
- FCPA-PR02-19 (Green Field)
- FCPA-PR02-24 (Chapel Hill Park)
- FCPA-PR02-11 (Lee High School)
- FCPA-PR02-11 (Linwood Park)
- FCPA-PR02-11 (Lee School)
- FCPA-PR02-04 (Carrington Park)
- FCPA-PR02-04 (Sundberg Middle School)
- FCPA-PR02-04 (Smyrna Park)
- FCPA-PR02-04 (Winton)
- FCPA-PR02-04 (Stranahan Park)
- FCPA-PR02-04 (Smyrna Park Area)
- FCPA-PR02-04 (Packard Center)
- FCPA-PR02-14 (Vernon Hill)
- FCPA-PR02-14 (T. Johnson)
- FCPA-REC04-04 (FCPA - ALDREY MOORE CENTER)
- FCPA-REC04-04 (FCPA - CLUB RUN CENTER)
- FCPA-REC04-04 (FCPA - GEORGE WASHINGTON CENTER)
- FCPA-REC04-04 (FCPA - LEE DISTRICT REC)
- FCPA-REC04-04 (FCPA - MT. VERNON CENTER)
- FCPA-REC04-04 (FCPA - OAK HARBOR CENTER)
- FCPA-REC04-04 (FCPA - PROVIDENCE CENTER)
- FCPA-REC04-04 (FCPA - PROVIDENCE CENTER)
- FCPA-REC04-04 (FCPA - SOUTH RUN CENTER)
- FCPA-REC04-04 (FCPA - SPRINT HILL CENTER)
- FCPA-REC04-04 (FCPA - Huber-Gale Nature Center)
- FCPA-REC04-04 (FCPA - Huber Meadow)
- FCPA-REC04-04 (FCPA - Huber Meadow Nature Center)
- FCPA-REC04-04 (FCPA - POND)

Cost Data

Gas Cost

Group Setting

Group Manager

- FCPA-REC04-04 (FCPA - ALDREY MOORE CENTER)
- FCPA-REC04-04 (FCPA - CLUB RUN CENTER)
- FCPA-REC04-04 (FCPA - GEORGE WASHINGTON CENTER)
- FCPA-REC04-04 (FCPA - LEE DISTRICT REC)
- FCPA-REC04-04 (FCPA - MT. VERNON CENTER)
- FCPA-REC04-04 (FCPA - OAK HARBOR CENTER)
- FCPA-REC04-04 (FCPA - PROVIDENCE CENTER)
- FCPA-REC04-04 (FCPA - PROVIDENCE CENTER)
- FCPA-REC04-04 (FCPA - SOUTH RUN CENTER)
- FCPA-REC04-04 (FCPA - SPRINT HILL CENTER)
- FCPA-REC04-04 (FCPA - Huber-Gale Nature Center)
- FCPA-REC04-04 (FCPA - Huber Meadow)
- FCPA-REC04-04 (FCPA - Huber Meadow Nature Center)
- FCPA-REC04-04 (FCPA - POND)

Rank	Display	Code	Total Cost	Total	Include In Total
1	FCPA GEORGE WASHINGTON CENTER	FCPA-REC04-04	\$7,795	2,045.00	Yes
2	FCPA PROVIDENCE CENTER	FCPA-REC04-04	\$5,730	4,462.44	Yes
3	FCPA SPRINT HILL CENTER	FCPA-REC04-04	\$18,975	5,980.00	Yes
4	FCPA SOUTH RUN CENTER	FCPA-REC04-04	\$28,736	5,674.40	Yes
5	FCPA CLUB RUN CENTER	FCPA-REC04-04	\$22,095	5,862.00	Yes
6	FCPA OAK HARBOR CENTER	FCPA-REC04-04	\$22,628	6,944.60	Yes
7	FCPA LEE DISTRICT REC	FCPA-REC04-04	\$25,366	7,457.34	Yes
8	FCPA ALDREY MOORE CENTER	FCPA-REC04-04	\$17,586	7,762.50	Yes
9	FCPA MT. VERNON CENTER	FCPA-REC04-04	\$27,481	8,045.11	Yes

Benchmark Chart

Average Use (KWH) Per Day (Average=0967.540)

Rank	Group	Average Use (KWH) Per Day	Total Cost (Blue) Per Day
1	FCPA GEORGE WASHINGTON CENTER	2,045.00	7,795
2	FCPA PROVIDENCE CENTER	4,462.44	5,730
3	FCPA SPRINT HILL CENTER	5,980.00	18,975
4	FCPA SOUTH RUN CENTER	5,674.40	28,736
5	FCPA CLUB RUN CENTER	5,862.00	22,095
6	FCPA OAK HARBOR CENTER	6,944.60	22,628
7	FCPA LEE DISTRICT REC	7,457.34	25,366
8	FCPA ALDREY MOORE CENTER	7,762.50	17,586
9	FCPA MT. VERNON CENTER	8,045.11	27,481

FCPA EMP

September 2014

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E: Facility Energy Audit Appendices

Appendix E1: Format for Energy Audit Report

FCPA - Energy Audit Report					
Facility Name:					
Audited Places:					
Attendees:					
Auditors:					
Date and Time:					
Actions to be Taken					
Action No.	Description	Priority 1/2/3 (1=Faster)	Anticipated Energy Saving	Timeline	Approximate Cost

F: Energy Project Management Appendices

Appendix F1: Format for Energy Project Definition

FCPA - Energy Project Definition	
Facility Name:	
Project Name:	Project Number:
Project Team:	
Date:	
Project Scope	
Project Materials and Vendors	
Project Cost	
Project Activities & Phases	
Project Timeline	

G: Capital Project Review Appendices

Appendix G1: Utility Change Report

FCPA - Energy Related Facility Changes Report									
Date:		Reporting Person:			Phone Number:				
Site Name:				Site Address:					
* Type of Utility		** Type of Change				*** Expected Result for Usage Change			
Electricity	E	Account Added		AA		Usage Increased		INC	
Natural Gas	G	Account Removed		AR		Usage Decreased		DEC	
Water	W	Account Changed		AC					
Propane	P	Equipment Changed		EC					
Fuel Oil	O	Operations Changed		OC					
Project	Type of Utility *	Effective Date	End Date (for Temporary Change)	Account Number	Meter Number	Expected Result for Usage Change ***	Estimated Annual Usage Amount Change (kwh/therm/gal)	Project Number	Involved Person
Change Description:									
Last Revised 2/22/2010									

H: Energy Sources and Supply Appendices

Appendix H1: VEPGA Agreement in Principle

Dominion Virginia Power
P.O. Box 26666, Richmond, VA 23261-6666
Web Address: www.dom.com



December 29, 2010

Mr. Stephen D. Sinclair, Chair
Virginia Energy Purchasing Governmental Association
12000 Government Center Parkway, Suite 433
Fairfax, Virginia 22035

RE: AGREEMENT IN PRINCIPLE

Dear Steve:

Virginia Electric and Power Company ("Dominion Virginia Power" or the "Company"), a Virginia public service company, provides electric service (both electricity supply service and electric delivery service) to retail customers in its service territory in the Commonwealth of Virginia. Virginia Energy Purchasing Governmental Association ("VEPGA") members, which are counties, municipalities, school boards, and other political subdivisions of the Commonwealth of Virginia (collectively, "VEPGA Members") purchase electric service from Dominion Virginia Power in accordance with an agreement dated July 1, 2007, that terminates on December 31, 2010 ("Current Contract").

This letter presents the agreement in principle ("Agreement in Principle") for an agreement under which Dominion Virginia Power will provide electric service to VEPGA Members. Such agreement shall become effective on January 1, 2011, and shall terminate on June 30, 2014 ("Amended and Restated Agreement"), unless VEPGA provides Early Termination Notice, as defined in the "Opportunity for Early Termination by VEPGA" section.

Upon execution of this letter by duly authorized representatives of Dominion Virginia Power and VEPGA, the provisions described in this letter shall be binding upon Dominion Virginia Power and VEPGA; shall be the basis for amending and restating the Current Contract; will supersede all previous communications between Dominion Virginia Power and VEPGA; and, to the extent applicable, will supplement the Amended and Restated Agreement. The Current Contract will be amended and restated and will remain unchanged except for (1) those changes as required to implement the provisions specified below, and (2) changes raised by Dominion Virginia Power or VEPGA, specifically relating to rate design and Terms and Conditions which are relatively minor in nature, following the execution of the Agreement in Principle and to which both parties mutually agree pursuant to the final Amended and Restated Agreement.

Dominion Virginia Power and VEPGA agree that effective January 1, 2011, there will be an annualized \$25 million increase in revenues associated with base rates and the new rates for Rider R-CM Bear Garden Generating Station; Rider S-CM, Virginia City Hybrid Energy Center; and Rider T-CM, Transmission. (Details of the \$25 million increase are discussed below.) In addition, Dominion Virginia Power shall provide VEPGA with a \$7.4 million credit associated with Financial Transmission Rights ("FTR Credit") from the period of July 1, 2007, to June 30, 2009.

Dominion Virginia Power and VEPGA agree that certain rate design changes that are mutually agreeable to the Company and to VEPGA will be made in sufficient time for billing to begin on April 1, 2011, and the Amended and Restated Agreement will be signed by March 8, 2011.

S: Energy Survey Appendices

Appendix S1: Facility Energy Management Suggestions & Feedback

Fairfax County Park Authority Energy Management Opportunities Report		
Facility / Site Name:		
Name (Manager / Survey coordinator):		
Contact Phone Number:		
Date:		
Item	Description	Priority (1 / 2 / 3) 1: most critical
1. Lighting system improvement opportunities where it could save energy (equipment/control device/operation hours):		
1.1		
1.2		
1.3		
2. Heating, ventilation, and air condition system improvement opportunities (equipment/maintenance/operation hours/temperature setting):		
2.1		
2.2		
2.3		
3. Building envelope improvement opportunities (door, window, wall, roof, and floor insulation/sealing/caulking):		
3.1		
3.2		
3.3		
4. Painting opportunities where it could reduce the light usages:		
4.1		
4.2		
4.3		
5. Cleaning opportunities (lighting/area/equipment) where it could increase illumination and reduce energy usages:		
5.1		
5.2		
5.3		
6. Service operation hours improvement opportunities where it could save energy without impacting goals:		
6.1		
6.2		
6.3		
7. Awareness raising and employee training opportunities where it could increase energy savings and reduce energy wastes:		
7.1		
7.2		
7.3		
8. Equipment layout/activity room improvement opportunities where it could save energy by using natural light or optimizing space needs:		
8.1		
8.2		
8.3		
9. Water usage control opportunities by controlling irrigation systems and water flow/repairing leakages:		
9.1		
9.2		
9.3		
10. Service equipment and tools supply/replacement opportunities where it could improve process/service and save energy:		
10.1		
10.2		
10.3		
11. Renewable energy use (solar electric, solar thermal, geothermal, wind turbine, ...):		
11.1		
11.2		
11.3		
Notes:		
* Please don't limit your descriptions to one line. You could use as much as space you need to write details for each item (such as number, type, and place of existing and suggested equipment or details of suggested practices/changes). You can expand the space for each item in the spreadsheet or use additional paper if you are filling in a hard copy format.		
* Priority field in the form would be based on amount of saving that each opportunity provides. So, priority of 1 means that this opportunity will save energy more than other opportunities with priority of 2 or 3.		
* Involving appropriate staff (managers, maintenance specialists, and other individuals) from your facility/site in providing information for the feedback creates new ideas and better result.		

Appendix S3: Format for Park Facilities Temperature Set Points

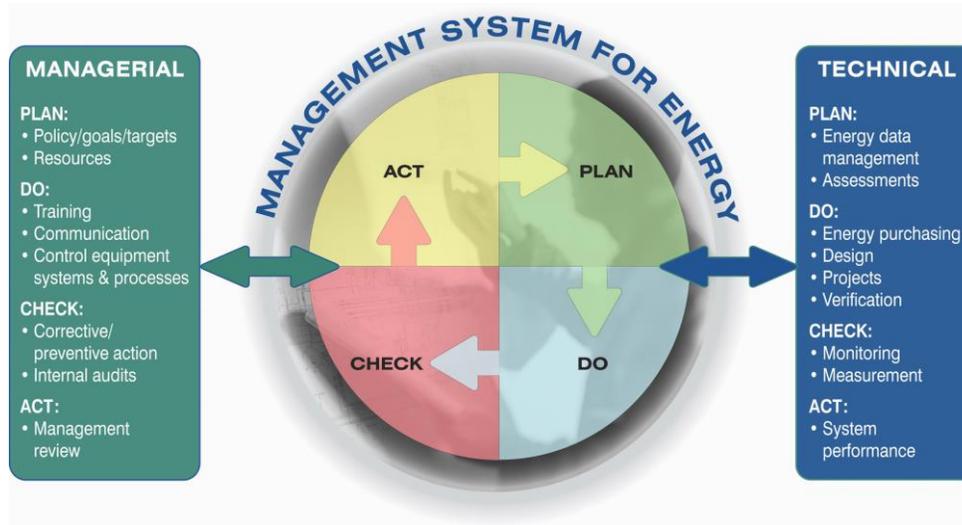
Temperature Set points for Park Facilities					
Type of Facility / Space	Heating Season Temperature Range (* F)	Cooling Season Temperature Range (* F)	Heating Season Night Set Back Temperature (* F)	Cooling Season Night Set Back Temperature (* F)	Recommendation
Offices					
Warehouses/Garages/Apparatus Bays					
Maintenance Shops					
Fitness Centers					
Multi-Purpose Activity Rooms					
Child Day Care Centers					
Locker Rooms Area					
Racquetball Courts					
Gymnasiums					
Ice Rinks					
Natoriums Area					
Pool Water Temperature					
Spa Water Temperature					
Showers Water Temperature					
Nature Centers Exhibit Area					
Glasshouses / Polyhouses					
Historic Sites / Museums / Collections					
Non Staff / Vacant Buildings and Houses with Water					
Bathhouses/Outdoor Restrooms/ Irrigation Pump Houses					

Appendix S4: Format for Utility Accounts Inventory

FCPA Utility Accounts Inventory (E + G + W)																		
#	101 Meter Code	121 Facility Name	131 Initial	141 Account #	151 Meter/eq #	161 Instr Code / Cool Control	171 Service Address on Bill	181 Actual FCPA Address	191 Assoc Street / Primary No	198 Type of Meters	199 MISC#	192 Type of Customer	193 Meter Size	194 Meter Picture #	195 Rate Formula	196 Annual Start Date	197 Annual Termination Date	198 Comments
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P: Energy Management Process Appendices

Appendix P1: ANSI/MSE 2000-2008 Process



The planning phase includes:

- Policy and Goals
- Resources and Responsibilities
- Energy Data Management
- Energy Assessments

The doing phase includes:

- Purchasing
- Energy Projects
- Controls
- Communication
- Training
- Documentation

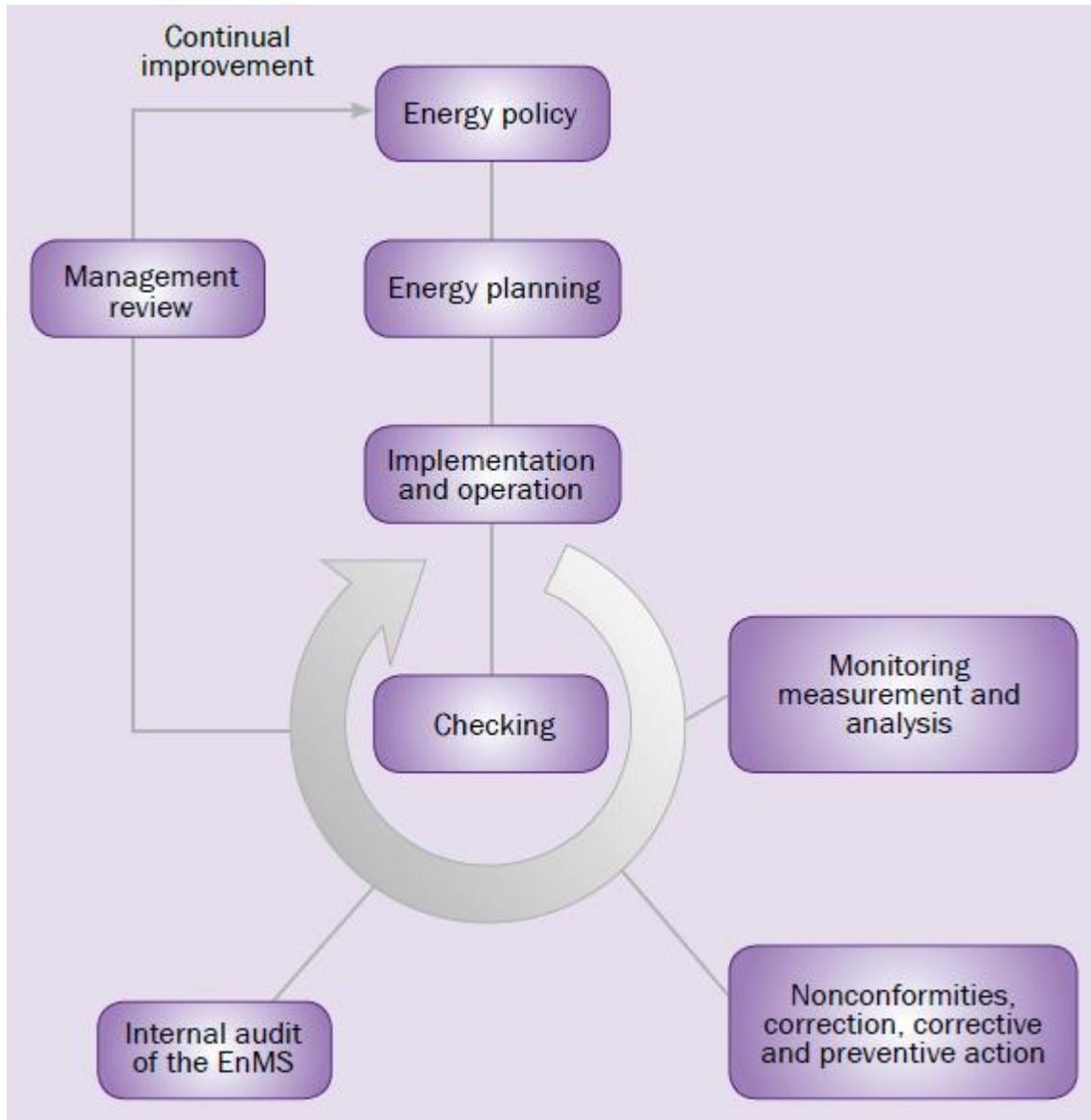
The checking phase includes:

- Monitor and Measurement
- Internal Audits
- Corrective and Preventive Action

The acting phase includes:

- Management Review
- Reviewing Energy Performance
- Managing Change
- Updating the System

Appendix P2: Energy Management System Model in ISO 50001:2011



The purpose of this International Standard is to enable organizations to establish the systems and processes necessary to improve energy performance, including energy efficiency and intensity. The standard should lead to reductions in cost, greenhouse gas emissions and other environmental impacts, through systematic management of energy. It is applicable to all types and sizes of organizations irrespective of any geographical, cultural or social conditions. Successful implementation depends on commitment from all levels and functions of the organization, and especially from top management.



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