



MONTGOMERY COUNTY DEPARTMENT OF PARKS
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB
Agenda #6
2/5/2015

January 26, 2015

MEMORANDUM

To: Montgomery County Planning Board

From: Michael Riley, Director of Parks
John Nissel, Deputy Director of Park Operations
Jim Poore, Chief, Facilities Management Division 

Subject: Briefing on the Department of Parks and Department of Planning Resource Conservation Plan – FY16 by Richard Anderson, President of CQI Associates

A copy of the Department of Parks and Department of Planning Resource Conservation Plan is attached for your review and approval. Subject to your approval, the plan will be submitted to Montgomery County Government for inclusion in the annual combined agency Resource Conservation Plans document prepared by the Interagency Committee on Energy and Utilities Management (ICEUM). Mr. Richard Anderson's presentation and report reflect the accomplishments as of December 2014 and plans for FY16 to conserve energy and water resources in regard to the Commission's comprehensive Resource Conservation Plan.

The Montgomery County sector of Maryland-National Capital Park and Planning Commission established a comprehensive energy management program in July 2003, awarding the competitively bid contract to CQI Associates as a primary consultant for energy management, recycling and a greens parks program. Energy consumption and energy costs have been reduced as a result of projects and programs implemented by Commission staff with the assistance of CQI Associates. Additionally, implementation of methods introduced through this program place Montgomery County Department of Parks and Montgomery County Planning Department in alignment with Sustainability Practice 6-40.

John Nissel and Jim Poore of our Park staff, along with Richard Anderson, CQI Associates, will be present to answer any questions you may have.

Attachment

**THE MARYLAND-NATIONAL CAPITAL PARK
AND PLANNING COMMISSION**

MONTGOMERY COUNTY

RESOURCE CONSERVATION PLAN

FISCAL YEAR 2016

DEPARTMENT OF PARKS

DEPARTMENT OF PLANNING

JANUARY 26, 2015

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RESOURCE CONSERVATION PLAN

The Maryland-National Capital Park and Planning Commission

Montgomery County

Department of Parks

Department of Planning

1. INTRODUCTION

The Maryland-National Capital Park and Planning Commission is responsible for the acquisition, development, and management of more than 35,200 acres of parkland, providing residents and visitors with outstanding recreational opportunities, facilities, and open space for natural resources stewardship.

The Department of Parks and Department of Planning established a comprehensive utilities management program in July 2003. Utility resources consumption and costs have been reduced as a result of the projects and programs implemented by the Commission staff.

The goal of the comprehensive Resource Conservation Plan is to establish programs and projects that will efficiently use energy and water resources to fulfill the mission of the Commission to serve the citizens and visitors of Montgomery County.

The Resource Conservation Plan strives to improve operations and maintenance practices to efficiently use electricity, natural gas, propane, and water to provide the programs by the Departments.

This report presents the accomplishments as of December 31, 2014 and the plans for the balance of the 2015 Fiscal Year. The report establishes plans for the 2016 Fiscal Year to conserve energy and water resources as part of a comprehensive Resource Conservation Plan.

The Maryland-National Capital Park and Planning Commission has continued to reduce costs based on the implementation of programs and projects completed in Fiscal Year 2014.

2. FISCAL YEAR RESULTS – 2014

July 2013 to June 2014

Goals:

- Reduce consumption overall by up to 1%.
- Implement projects focused on heating and air conditioning system replacements for equipment in operation for over 20 years.
- Integrate program as part of the Sustainability Practice
- Seek additional project grant opportunities

Projects and Programs Completed Fiscal Year 2014

Brookside Gardens Greenhouse - Boiler Replacement

Parkside – LED Technology Lighting Retrofit

Shady Grove Maintenance Center Training Building – Solar Domestic Hot Water System

Budget Results for Fiscal Year 2014:

	Cost July 2013 to June 2014*	Budget 2014	Difference*
DEPARTMENT OF PLANNING	\$233,600	\$239,700	\$6,100
DEPARTMENT OF PARKS	\$2,276,800	\$2,379,800	\$103,000
ENTERPRISE & PROPERTY MANAGEMENT	\$1,279,400	\$1,299,600	\$20,200
TOTALS	\$3,789,800	\$3,919,100	\$129,300

*Estimated Due to change in tracking system mid-year

The expenditures for Fiscal Year 2014:

Programs Energy Management:	\$35,000.00
Projects Local:	\$40,000.00
<u>Projects Non-local:</u>	<u>\$40,000.00</u>
Total in FY 2014:	\$115,000.00

3. RESULTS TO DATE - FISCAL YEAR 2015

July 2014 to June 2015

The results of the current program year as of December 31, 2014 is as follows:

Goals:

- Evaluate expansion of the building automation controls and energy management systems capabilities in the primary staff office, support and maintenance buildings
- Expand the exterior lighting retrofit program to use LED technology
- Integrate program as part of the Sustainability Practice
- Seek opportunities to implement renewable energy projects

Projects and Programs for Fiscal Year 2015

Brookside Visitor Center – HVAC replacement and upgrade to include lighting retrofit and new building automation system

Building Automation and Energy Management System Upgrade – Installation of Wi Fi based programmable thermostats and controls at primary Park Department building locations using Eco Bee thermostat controls and computer based controls with smart phone monitoring capability

Needwood Manson – Boiler Replacement

Meadowbrook Stables – Boiler Replacement

Norwood – Boiler Replacement

Saddlebrook – Install Variable Speed Pump Systems for Heating

Exterior Lighting - Install LED exterior wall lighting and parking lot lighting

South Germantown and Rock Creek Regional Parks - Solar Photovoltaic Feasibility Study Completed for Power Purchase Agreement for two 2 MW systems for net aggregate metering - one located in the PEPCO and the other in the Potomac Edison utility service areas.

Budget Projection for Fiscal Year 2015:

	Budget 2015	Projected Cost as of December 2014	Projection for FY 2015	Difference
DEPARTMENT OF PLANNING	\$250,100	\$117,000	\$227,300	\$22,800
DEPARTMENT OF PARKS	\$2,402,800	\$1,105,000	\$2,209,400	\$193,400
ENTERPRISE & PROPERTY MANAGEMENT	\$1,295,100	\$597,000	\$1,194,600	\$100,500
TOTALS	\$3,948,000	\$1,819,000	\$3,631,300	\$316,700

The budgeted expenditures for Fiscal Year 2015:

Programs Energy Management:	\$65,000.00
Projects Local:	\$40,000.00
<u>Projects Non-local:</u>	<u>\$40,000.00</u>
Total in FY 2015:	\$145,000.00

Brookside Visitor Center – HVAC Replacement and Upgrade – CIP Project Funding \$450,000

4. PLANNED RESOURCE CONSERVATION PLAN – FISCAL YEAR 2016

July 2015 to June 2016

The proposed program for Fiscal Year 2016 is as follows:

Goals:

- Implement solar renewable energy projects by December 31, 2016
- Expand the exterior lighting retrofit program to use LED technology
- Integrate program as part of the Sustainability Practice
- Seek project grant opportunities

Projects and Programs for Fiscal Year 2016

Black Hills Police – HVAC Replacement

South Germantown and Rock Creek Regional Park – Complete the construction of the Solar Photovoltaic system based on the FY 2015 Request for Proposals for Power Purchase Agreement for two 2 MW systems

Parkside – Boiler Replacement

Recreation Centers - Install LED interior lighting and exterior wall lighting

Exterior Lighting - Install additional LED parking lot and area lighting

Budget projection for Fiscal Year 2016 is:

	Proposed Budget 2016
DEPARTMENT OF PLANNING	\$237,800
DEPARTMENT OF PARKS	\$2,328,000
ENTERPRISE & PROPERTY MANAGEMENT	\$1,249,100
TOTALS	\$3,814,900

The proposed budgeted expenditures for Fiscal Year 2016:

Programs Energy Management:	\$35,000.00
Projects Local:	\$40,000.00
<u>Projects Non-local:</u>	<u>\$40,000.00</u>
Total in FY 2016:	\$115,000.00

Existing Measures

Programs and Projects Completed - Fiscal Years 2000 to June 2014

Measures - Existing: (implemented from FY 2000 to FY 2014)	Dates implemented	Initial cost (\$)	Annual net impact on maintenance cost (\$)	Fuel type(s) effected and units	Units saved per year	Annual cost savings (\$)
Capital Improvement Projects:						
Equipment Replacement Project	FY 2000 to FY 2014	\$441,000 est.	\$120,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	704,000 kWh, 41,600 therm & 6,100 Pounds	\$140,100 est. Annual Cost Avoidance
<u>Equipment Retrofit Projects</u> Includes MEA Grant in 2010 and DOE Grant in 2012	FY 2000 to FY 2014	\$121,000 est.	\$10,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	190,200 kWh, 11,500 therm & 600 Pounds	\$47,600 est. Annual Cost Avoidance
Controls Improvements	FY 2000 to FY 2014	\$70,000 est.	NA	Electricity and Natural Gas	142,000 kWh & 10,600 therm	\$43,000 est. Annual Cost Avoidance
<u>Lighting Projects</u> Includes MEA Grant in 2010 and DOE Grant in 2012	FY 2000 to FY 2014	\$417,200 est.	NA	Electricity	322,000 kWh	\$186,850 est. Annual Cost Avoidance
CIP Projects Sub-total		\$1,049,200 est.			1,358,200 kWh, 63,700 therm & 6,700 Pounds	\$417,550 est. Annual Cost Avoidance
Operations and Maintenance:						
Operations and Maintenance Best Management Practice and Programs	FY 2000 to FY 2014	\$377,500	\$5,000 annual	Electricity, Natural Gas, and Propane	708,000 kWh, 31,300 therm & 6,500 Pounds	\$145,000 est. Annual Cost Avoidance
Totals		\$1,426,700			2,066,200 kWh, 95,000 therm & 13,200 pounds	\$562,550 est. Annual Cost Avoidance 2.54 yrs. ROI

New Resource Conservation Measures Fiscal Year 2015

Being Implemented July 1, 2014 through June 30, 2015

<u>Measures - Planned:</u>	<u>Projected completion date</u>	<u>Projected initial cost (\$)</u>	<u>Projected maintenance cost (\$)</u>	<u>Fuel type(s) effected and units</u>	<u>Estimated units saved per year</u>	<u>Projected annual cost savings (\$)</u>
Capital Improvement Projects:						
Equipment Replacement Projects Local & Non-Local	Entire Year	\$50,000 est.	\$20,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	100,000 kWh, 10,000 therm & 1000 Pounds	\$16,000 est. Annual Cost Avoidance
Equipment Replacement Projects – Brookside Gardens	Entire Year	\$450,000 est.	\$35,000 on Annual Service Costs	Electricity, Natural Gas	236,000 kWh, 27,000 therm	\$56,000 est. Annual Cost Avoidance
Controls Improvements Local & Non-Local	Entire Year	\$10,000 est.	NA	Electricity	15,000 kWh & 1,000 therm	\$4,000 est. Annual Cost Avoidance
Lighting Projects Local & Non-Local	Entire Year	\$20,000 est.	NA	Electricity, and Natural Gas	15,000 kWh	\$6,000 est. Annual Cost Avoidance
CIP Projects Sub-total		\$530,000	\$55,000			\$66,000
Operations and Maintenance:						
Best Management Practices Programs	Entire Year	\$15,000	NA	Electricity, Natural Gas, and Propane	23,000 kWh, 900 therm & 200 Pounds	\$4,000 Annual Cost Avoidance
Operations and Maintenance Improvement Programs	Entire Year	\$20,000	NA	Electricity, Natural Gas, and Propane	39,000 kWh, 1,300 therm & 300 Pounds	\$6,000 est. Annual Cost Avoidance
O&M Total		\$35,000	NA			\$10,000
Totals		\$565,000	\$55,000			\$76,000 7.4 yr. ROI

Planned Resource Conservation Measures Fiscal Year 2016

July 1, 2015 through June 30, 2016

<u>Measures - Planned:</u>	<u>Projected completion date</u>	<u>Projected initial cost (\$)</u>	<u>Projected maintenance cost (\$)</u>	<u>Fuel type(s) effected and units</u>	<u>Estimated units saved per year</u>	<u>Projected annual cost savings (\$)</u>
Capital Improvement Projects						
Equipment Replacement Project - Local & Non-Local	Entire Year	\$50,000 est.	\$5,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	50,000 kWh, 5,000 therm & 500 Pounds	\$8,000 est. Annual Cost Avoidance
Controls Improvements- Local & Non-Local	Entire Year	\$10,000 est.	NA	Electricity	7,000 kWh & 400 therm	\$2,000 est. Annual Cost Avoidance
Lighting Projects- Local & Non-Local	Entire Year	\$20,000 est.	NA	Electricity	20,000 kWh	\$6,000 est. Annual Cost Avoidance
CIP Projects Sub-total		\$80,000	\$5,000			\$16,000
Operations and Maintenance						
Best Management Practices Programs	Entire Year	\$15,000	NA	Electricity, Natural Gas, and Propane	20,000 kWh, 400 therm & 100 Pounds	\$1,000 Annual Cost Avoidance
Employee Training and Participation Programs	Entire Year	\$5,000	NA	Electricity, Natural Gas, and Propane	2,000 kWh, 100 therm	\$600 Annual Cost Avoidance
Operations and Maintenance Improvement Programs	Entire Year	\$15,000	NA	Electricity, Natural Gas, and Propane	10,000 kWh, 400 therm	\$2,400 est. Annual Cost Avoidance
O&M Total		\$35,000	NA			\$4,000
Totals		\$115,000	\$5,000			\$20,000 5.8 yrs. ROI

Utility Budget Projection by Fund/Cost

DEPARTMENT OF PLANNING		<u>2015 Budget</u>	<u>Proposed 2016 Budget</u>
2220	Electricity	\$210,000	\$197,000
2210	Natural Gas	\$31,000	\$30,000
2230	Water and Sewer	\$7,500	\$7,800
1903	Propane		
	Wind Energy Fee	\$1,600	\$3,000
	Sub Total	\$250,100	\$237,800
DEPARTMENT OF PARKS		<u>2015 Budget</u>	<u>Proposed 2016 Budget</u>
2220	Electricity	\$1,310,000	\$1,227,000
2210	Natural Gas	\$401,000	\$388,000
2230	Water and Sewer	\$550,000	\$575,000
1903	Propane	\$116,000	\$121,000
	Wind Energy Fee	\$8,800	\$17,000
	Sub Total	\$2,385,800	\$2,328,000

DEPARTMENT OF PARKS -ENTERPRISE		<u>2015 Budget</u>	<u>Proposed 2016 Budget</u>
2220	Electricity	\$880,000	\$826,000
2210	Natural Gas	\$321,000	\$310,000
2230	Water and Sewer	\$50,000	\$52,000
1903	Propane	\$38,000	\$40,000
	Wind Energy Fee	\$6,100	\$12,000
	Sub Total	\$1,295,100	\$1,240,000
DEPARTMENT OF PARKS -PROPERTY MANAGEMENT			
DEPARTMENT OF PARKS -PROPERTY MANAGEMENT		<u>2015 Budget</u>	<u>Proposed 2016 Budget</u>
2220	Electricity	\$7,000	\$6,600
2210	Natural Gas	\$2,500	\$2,500
2230	Water and Sewer	\$0	\$0
1903	Propane	\$0	\$0
	Wind Energy Fee		
	Sub Total	\$9,500	\$9,100
Overall Totals		\$3,940,500	\$3,814,900