



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

MCPB  
Agenda #  
1/13/11

January 5, 2011

**MEMORANDUM**

**TO:** Montgomery County Park Commission

**FROM:** Mary R. Bradford, Director of Parks *Mary R. Bradford*  
Gene Giddens, Deputy Director of Park Operations *G. Giddens*  
John Nissel, Division Chief, Facilities Management Division

**SUBJECT:** Briefing on the Department of Parks and Department of Planning Resource Conservation Plan by Richard Anderson, President of CQI Associates

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A copy of the Department of Parks and Department of Planning Resource Conservation Plan is submitted 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. Anderson's presentation and report reflects accomplishments as of December 2010 and plans for FY12 to conserve energy and water resources in regards to the Commission's comprehensive RESOURCE CONSERVATION PLAN.

The Montgomery County portion of The Maryland-National Capital Park and Planning Commission established a comprehensive energy management program in July 2003 by contracting with CQI Associates as a consultant for energy, recycling, and green parks program. Energy consumption costs have since been reduced as a result of projects and programs implemented by Commission staff and with the assistance of CQI Associates. The estimated cumulative savings is \$2,116,395 for the period July 2003 to June 2010.

Commission staff is currently working with CQI on a comprehensive marketing and sign campaign that highlights energy usage and cost reductions at major facilities over the past three years.

John Nissel and Arnold Ramsammy of our park staff, along with Richard Anderson, CQI Associates, are present to answer any questions you may have.

MB:GG:JN

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# RESOURCE CONSERVATION PLAN

DEPARTMENT OF PARKS

DEPARTMENT OF PLANNING

Fiscal Year 2012

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THE MARYLAND-NATIONAL CAPITAL PARK AND  
PLANNING COMMISSION

MONTGOMERY COUNTY

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# RESOURCE CONSERVATION PLAN

The Maryland-National Capital Park and Planning Commission

Montgomery County

Department of Parks

Department of Planning

## I. INTRODUCTION

The Montgomery County Department of Parks is responsible for the acquisition, development, and management of more than 34,600 acres of parkland, providing residents and visitors with outstanding recreational opportunities, facilities, and open space for natural resources stewardship.

The Maryland-National Capital Park and Planning Commission established a comprehensive energy management program on July 2003. Energy 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 offered by the parks.

The Maryland-National Capital Park and Planning Commission participates in the Montgomery County electricity and natural gas procurement program and has benefited from reductions in costs due to the success of the program.

This report presents the accomplishments as of December 2010 and the plans for the 2012 Fiscal Year to conserve energy and water resources as part of a comprehensive RESOURCE CONSERVATION PLAN.



**II. FISCAL YEAR 2010 RESULTS**  
**July 2009 to June 2010**

The results of the programs and projects implemented in Fiscal Year 2010 are:

Usage:

- Electricity: 12% reduction
- Natural Gas: 9% reduction
- Water: 27% reduction
- Propane: 9% reduction

Utility Cost: Annual Reduction \$792,110

	Budget 2010	Actual Expenditure
DEPARTMENT OF PLANNING	\$236,650	\$218,796
DEPARTMENT OF PARKS	\$2,591,145	\$2,103,166
ENTERPRISE	\$1,512,455	\$1,226,178
	\$4,340,250	\$3,548,140
	Reduction	\$792,110

Completed Programs and Projects:

- Investigated the primary facilities using natural gas to determine additional programs and projects to reduce consumption and costs
- Parkside Headquarters
  - Installed additional programmable energy management temperature controls
  - Installed lighting occupancy controls where applicable
- Cabin John Ice Rink
  - Replaced existing 400 watt HID rink lights with T-8 fixtures
- Wheaton Ice Rink
  - Replaced existing 400 watt HID rink lights with T-8 fixtures
- Montgomery Regional Office Building
  - Replaced Lobby Lights with LED Fixtures and Bulbs
  - Conducted Energy Assessment Study July 2009
  - Identified project and program opportunities 12 months - 12% reduction
  - Identified Long term Capital Improvement Projects – Additional 15% reduction
- Implemented selected water conservation programs at the local park and park maintenance centers

Budgeted Expenditures for Fiscal Year 2010:

Programs:	\$36,860.00
Projects:	\$47,000.00
Total	\$83,860.00

Grant Received in Fiscal Year 2010:

Maryland EmPower Grant: \$72,000.00 (Maryland Energy Administration – MEA)

Total for Fiscal Year 2010: \$155,860.00

**III. FISCAL YEAR 2011 - RESULTS TO DATE**  
**July 2010 to June 2011**

The results of the programs and projects implemented as of December 2010 are:

Usage Projection as of December 30, 2010 for the year:

- Electricity: 6% reduction
- Natural Gas: 2% reduction
- Water: 7% reduction
- Propane: 2% reduction

Utility Costs to date as of December 30, 2010:

	Projection July 2010 to June 2011	Budget 2011	Projected Difference
DEPARTMENT OF PLANNING	\$247,500	\$268,000	\$20,500
DEPARTMENT OF PARKS	\$2,294,300	\$2,591,145	\$296,845
ENTERPRISE	\$1,441,400	\$1,512,455	\$71,055
	\$3,983,200	\$4,371,600	\$388,400

Planned Projects and Program Fiscal Year 2011

- Olney Manor Recreational Park
  - Install LED parking lot lighting
- Saddlebrook Park Police Headquarters
  - Upgrade lighting to applicable T-8 fixtures
  - Add lighting controls where applicable in assembly areas and workrooms
  - Replace the aging HVAC Roof Top Units with new state-of-the-art units to improve operating efficiency by 30%
- Parkside Headquarters
  - Install additional programmable energy management temperature controls
  - Install lighting occupancy controls where applicable
  - Replace the aging HVAC Roof Top Units with new state-of-the-art units to improve operating efficiency by 30%
- Developing Updated Assessment Reports for next Grant Opportunity:
  - Park Maintenance Centers (Five)
  - Parkside Office Facility
  - Saddlebrook - Office/Auditorium Facility

- Develop a pilot test solar application: Black Hill Maintenance Yard and Visitors Center

Department of Energy Block Grant Received December 2010:

Proposed Projects:

<u>Location</u>	<u>Project</u>	<u>Investment</u>	<u>Savings</u>	<u>Payback Period</u>
South Germantown Park Restroom	Solar & Wind Installation	\$40,000	\$4,600	8.7
Black Hill Nature Center	HVAC	\$10,000	\$2,800	3.6
Little Bennett Camp Ground Office	HVAC	\$4,000	\$1,100	3.6
Brookside Sycamore House	HVAC	\$4,000	\$1,100	3.6
Brookside Visitor Center	HVAC	\$4,000	\$1,100	3.6
Black Hill Maintenance Yard	HID to T-8 Lighting	\$15,000	\$6,800	2.2
South Germantown Maintenance Yard	HID to T-8 Lighting	\$10,000	\$4,500	2.2
Meadowbrook Maintenance Yard	Street Lighting to LED	\$6,000	\$3,400	1.8
Cabin John Maintenance Yard	Street Lighting to LED	\$6,000	\$3,400	1.8
Black Hill Maintenance Yard	Street Lighting to LED	\$6,000	\$3,400	1.8
Wheaton Maintenance Yard	Street Lighting to LED	\$6,000	\$3,400	1.8
<b>Totals</b>		<b>\$111,000</b>	<b>\$35,600</b>	<b>3.1</b>

The proposed expenditures for Fiscal Year 2011:

Programs:	\$35,000.00
Projects:	\$45,000.00
<b>Total in FY 2011:</b>	<b>\$80,000.00</b>

Grant Received in Fiscal Year 2011:

DOE Block Grant:	\$111,000.00
<b>Total for Fiscal Year 2011:</b>	<b>\$191,000.00</b>

**IV. PLANNED RESOURCE CONSERVATION PLAN – FISCAL YEAR 2012**  
July 1, 2011 through June 30, 2012

**County Executive: Cross-Agency Resource- Sharing Committee (CARS)**

The Commission participated in the development of CARS programs and projects for implementation in Fiscal Year 2012.

The following project and program recommendations have been proposed by the Utilities Workgroup and adopted by the Executive Committee in December 2010 for implementation in Fiscal Year 2012.

The Commission staff is developing detailed implementation plans for each recommendation.

**CARS Program and Projects for 2012**

**(R1) Establish an Interagency Energy Technical Service Organization**

- Recommitment to Inter-County Committee on Energy and Utility Management

**(R2) Develop a Multi-Agency Energy Service Contract for Energy-Efficiency and Renewable Energy Retrofits**

- Alternative project funding strategy
- Explore expansion of energy management control and lighting control capability major facilities:
  - Park Maintenance Centers (Five)
  - Parkside Office Facility
  - Saddlebrook - Office/Auditorium Facility
  - Montgomery County Regional Office

**(R4) Launch and Interagency Energy Conservation Campaign**

- Employee Participation Program

**(R5) Retrofit T8 32W Fluorescent Lamps with 25/28W Replacements**

- Cost to be determined – MEA Grant/loan being evaluated

**(R6) Provide Building Operator Certification (BOC) Training to Facilities Staff**

- One MNCPPC Staff to attend – Grant funding pending

Planned Projects and Programs for Fiscal Year 2012

- Black Hill Nature Center
  - HVAC System Ground Source Heat Pump Alternative
- Saddlebrook Park Offices
  - Upgrade lighting to applicable T-8 fixtures
- Meadowbrook Nature Center
  - Replace the aging HVAC Roof Top Units with new state-of-the-art units to improve operating efficiency by 30%
- Black Hill Maintenance
  - Replace existing 250 watt HID shop and storage facility lighting with T-8 fixtures

The budget projection for Fiscal Year 2012 is:

	Proposed Budget 2012
DEPARTMENT OF PLANNING	\$250,000
DEPARTMENT OF PARKS	\$2,420,400
ENTERPRISE	\$1,347,850
	\$4,018,250

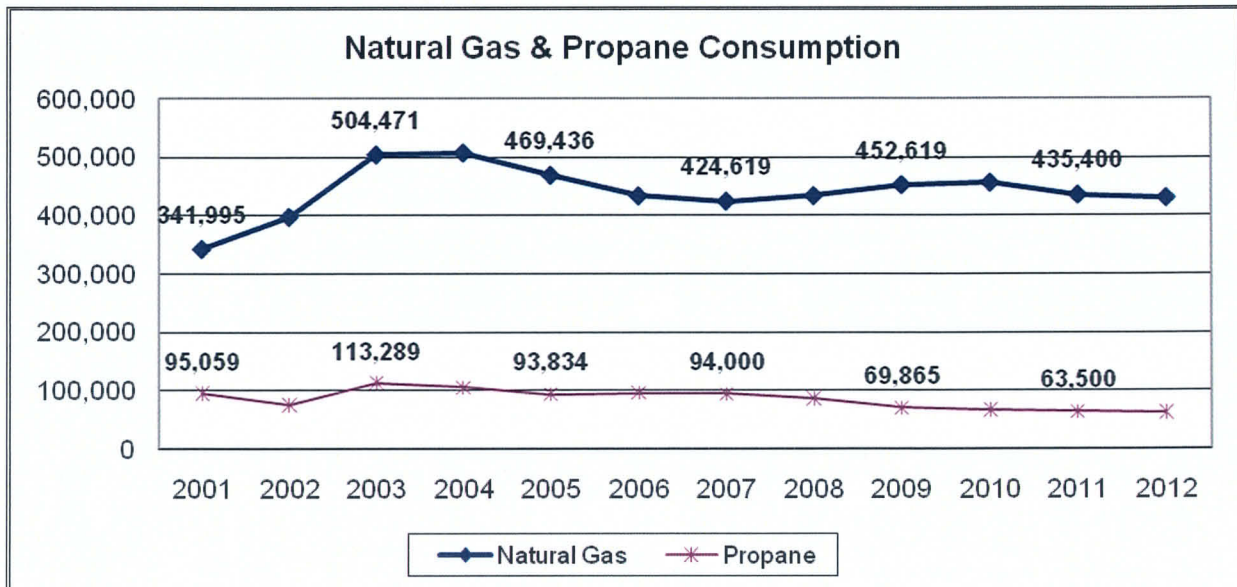
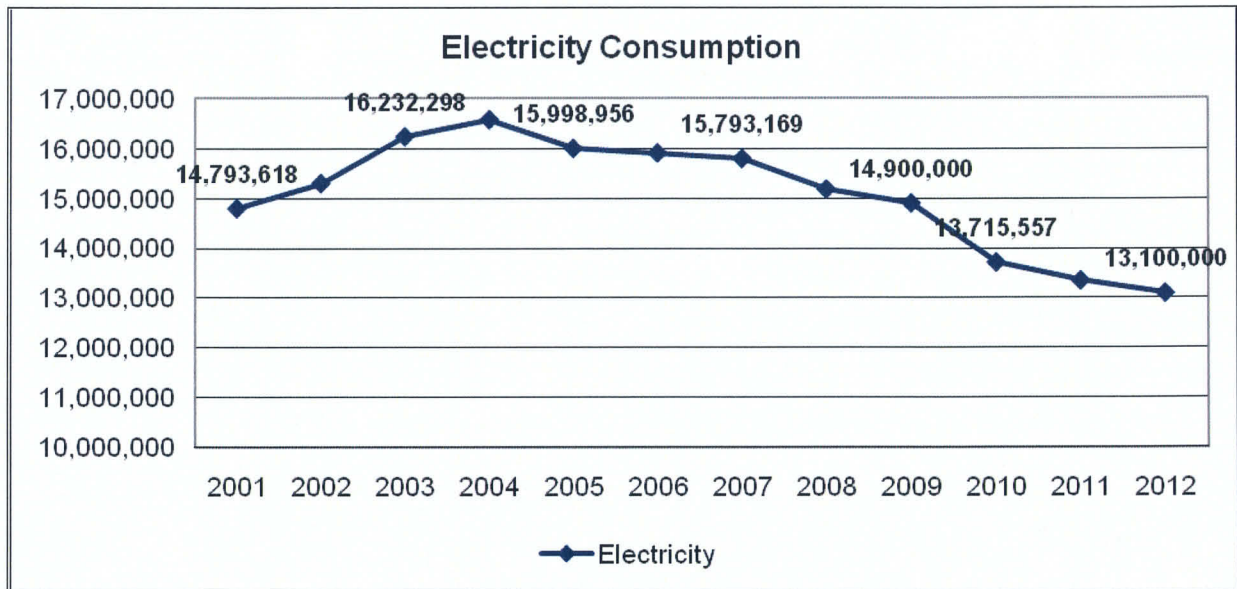
The proposed expenditures for Fiscal Year 2012:

Programs:	\$35,000.00
<u>Projects:</u>	<u>\$45,000.00</u>
Total in FY 2012:	\$80,000.00

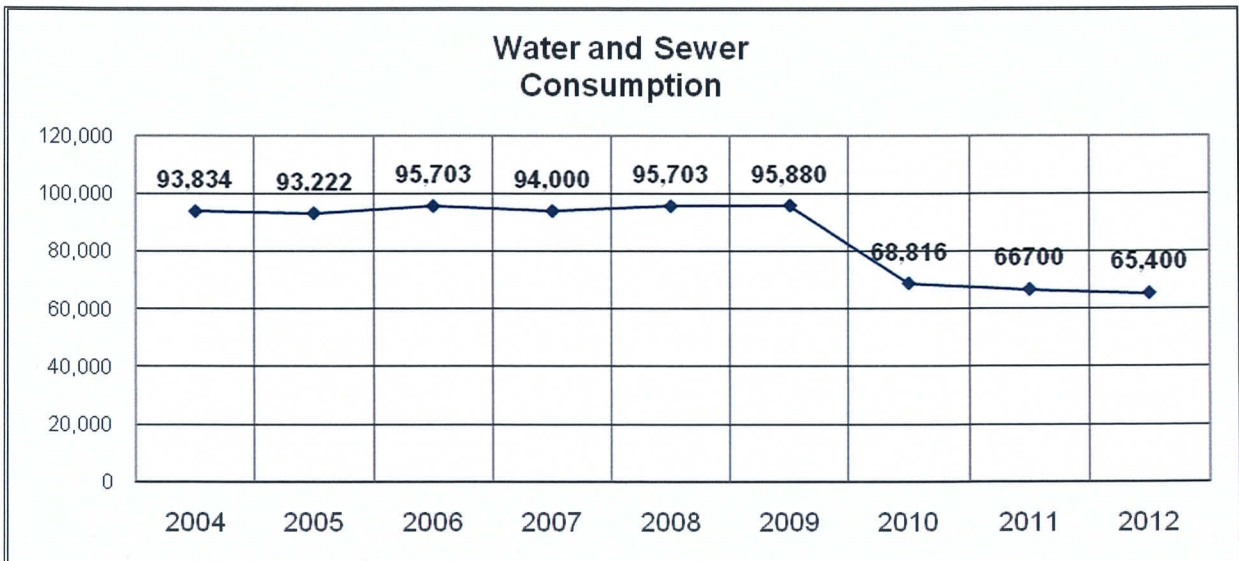
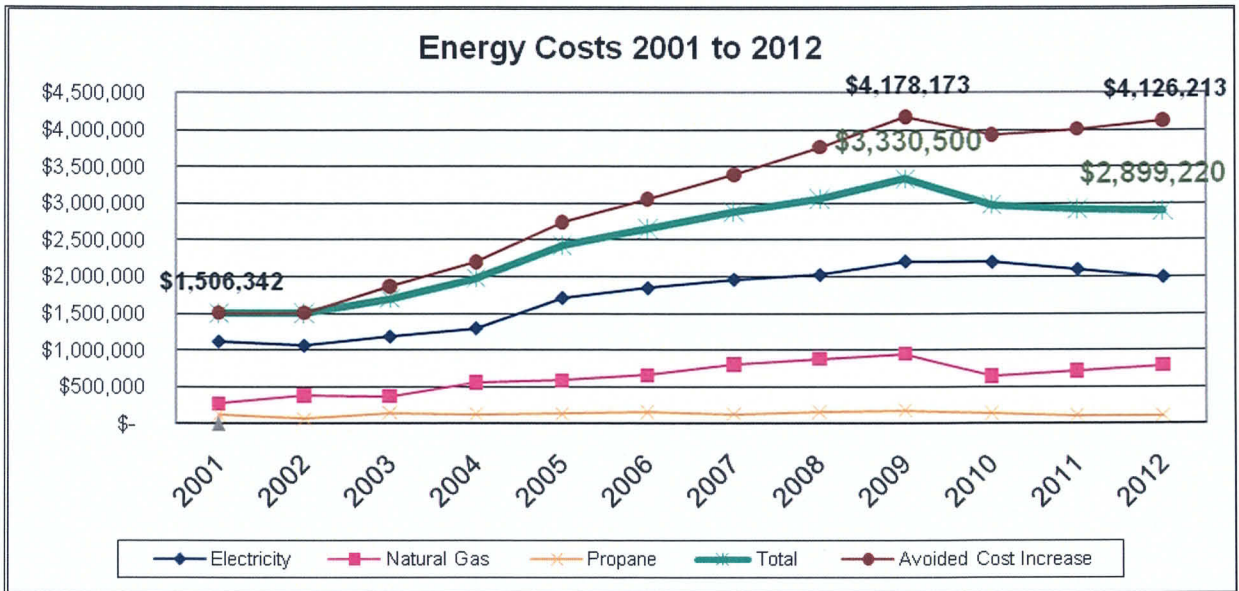


## V. Program Summary & Projections

The program results since the 2001 are shown on the following charts:







### Water and Sewer Costs





**Existing Measures**  
**Programs and Projects Completed - Fiscal Years 1998 to June 2010**

Measures - Existing: (implemented from FY 98 to FY 09)	date implemented (mo/yr)	initial cost (\$)	annual net impact on maintenance cost (\$)	fuel type(s) effected and units	units saved per year	annual cost savings (\$)
<b>Capital Improvement Projects:</b>						
Equipment Replacement Project	FY 2000 to FY 2010	\$191,000 est.	\$52,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	443,000 kWh, 15,600 therms & 3,700 Pounds	\$70,000 est. Annual Cost Avoidance
Equipment Retrofit Projects	FY 2000 to FY 2010	\$60,000 est.	\$10,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	166,000 kWh, 5,500 therms & 600 Pounds	\$25,000 est. Annual Cost Avoidance
Controls Improvements	FY 2000 to FY 2010	\$48,000 est.	NA	Electricity	112,000 kWh & 9,600 therms	\$35,000 est. Annual Cost Avoidance
Lighting Projects – Includes MEA Grant in 2010 - \$72,000	FY 2000 to FY 2010	\$232,200 est.	NA	Electricity	194,000 kWh	\$82,000 est. Annual Cost Avoidance
Sub - Total		\$531,200			915,000 kWh, 30,700 therms & 4,300 Pounds	\$212,000 est. Annual Cost Avoidance
<b>Operations and Maintenance:</b>						
Operations and Maintenance Best Management Practice and Programs	FY 2000 to FY 2010	\$237,500	\$5,000 annual	Electricity, Natural Gas, and Propane	460,000 kWh, 22,500 therms & 4.500 Pounds	\$105,000 est. Annual Cost Avoidance
<b>Total</b>		<b>\$768,700</b>			<b>1,375,000 kWh, 53,200 therms &amp; 8,800 pounds</b>	<b>\$317,000 est. Annual Cost Avoidance 2.4 Yrs. ROI</b>

## New Measures Fiscal Year 2011

Resource Conservation Measures Being  
Implemented July 1, 2010 through June 30, 2011

Measures - Planned: (for FY06)	projected completion date (mo/yr)	projected initial cost (\$)	projected annual net impact on maintenance cost (\$)	fuel type(s) effected and units	estimated units saved per year	projected annual cost savings (\$)
<b>Capital Improvement Projects:</b>						
Equipment Replacement Project Grant \$26,000	Entire Year	\$51,000 est.	\$28,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	16,000 kWh, 2,000 therms & 200 Pounds	\$13,100 est. Annual Cost Avoidance
Renewable Energy – Solar & Wind Grant \$40,000	Entire Year	\$40,000 est.	NA	Electricity	4,200 kWh	\$4,600 est. Annual Cost Avoidance
Lighting Projects Grant \$45,000	Entire Year	\$65,000 est.	NA	Electricity	30,000 kWh	\$30,900 est. Annual Cost Avoidance
<b>Sub-Total</b>		<b>\$156,000</b>	<b>\$28,000</b>			<b>\$48,600</b>
<b>Operations and Maintenance:</b>						
Best Management Practices Programs	Entire Year	\$15,000	NA	Electricity, Natural Gas, and Propane	23,000 kWh, 900 therms & 200 Pounds	\$4,000 Annual Cost Avoidance
Employee Training and Participation Programs	Entire Year	\$5,000	NA	Electricity, Natural Gas, and Propane	14,000 kWh, 400 therms & 100 Pounds	\$1,000 Annual Cost Avoidance
Operations and Maintenance Improvement Programs	Entire Year	\$15,000	NA	Electricity, Natural Gas, and Propane	25,000 kWh, 900 therms & 200 Pounds	\$5,000 est. Annual Cost Avoidance
<b>Sub-Total</b>		<b>\$35,000</b>	<b>NA</b>			<b>\$10,000</b>
<b>Total</b>		<b>\$191,000</b>	<b>\$28,000</b>			<b>\$58,600 3.3 yr ROI</b>

## Planned Measures Fiscal Year 2012

Resource Conservation Measures Planned  
July 1, 2011 through June 30, 2012

Measures - Planned: (for FY08)	projected completion date (mo/yr)	projected initial cost (\$)	projected annual net impact on maintenance cost (\$)	fuel type(s) effected and units	estimated units saved per year	projected annual cost savings (\$)
<b>Capital Improvement Projects: 2012</b>						
Equipment Replacement Project	Entire Year	\$25,000 est.	\$14,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	50,000 kWh, 5,000 therms & 1000 Pounds	\$8,000 est. Annual Cost Avoidance
Controls Improvements	Entire Year	\$10,000 est.	NA	Electricity	15,000 kWh & 1,000 therms	\$4,000 est. Annual Cost Avoidance
Lighting Projects	Entire Year	\$10,000 est.	NA	Electricity	15,000 kWh	\$6,000 est. Annual Cost Avoidance
<b>CIP Project Sub-total</b>		<b>\$45,000</b>	<b>\$14,000</b>			<b>\$18,000</b>
<u>CARS: (R2) Develop a Multi-Agency Energy Service Contract for Energy-Efficiency and Renewable Energy Retrofits</u> Controls Improvements	Entire Year	TBD	NA	Electricity, Natural Gas, Propane	TBD	TBD
<u>CARS: (R5) Retrofit T8 32W Fluorescent Lamps with 25/28W Replacements</u> Lighting Projects	Entire Year	TBD	NA	Electricity	TBD	TBD
<b>CIP - Total</b>		<b>\$45,000</b>	<b>\$14,000</b>			<b>\$18,000</b>



<b>Operations and Maintenance: 2012</b>						
Best Management Practices Programs <u>CARS: (R1) Establish an Interagency Energy Technical Service Organization</u>	Entire Year	\$15,000 CARS <u>Coordination</u> <u>currently</u> <u>Funded</u>	NA	Electricity, Natural Gas, and Propane	23,000 kWh, 900 therms & 200 Pounds	\$4,000 Annual Cost Avoidance
<u>CARS: (R4) Launch and Interagency Energy Conservation Campaign</u>  Employee Training and Participation Programs	Entire Year	\$5,000  Additional CARS Funding TBD	NA	Electricity, Natural Gas, and Propane	14,000 kWh, 400 therms & 100 Pounds	\$1,000 Annual Cost Avoidance
<u>CARS: (R6) Provide Building Operator Certification (BOC) Training to Facilities Staff</u>	Entire Year	TBD – CARS DOE Grant Available	NA	Electricity, Natural Gas, and Propane	TBD	TBD
Operations and Maintenance Improvement Programs	Entire Year	\$15,000	NA	Electricity, Natural Gas, and Propane	25,000 kWh, 900 therms & 200 Pounds	\$5,000 est. Annual Cost Avoidance
<b>O&amp;M Total</b>		<b>\$35,000</b>	<b>NA</b>			<b>\$10,000</b>
<b>Total</b>		<b>\$80,000</b>	<b>\$14,000</b>			<b>\$28,000</b> <b>2.9 yrs ROI</b>

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

**Utility Budget by Fund & Utility**

(July 1 2011 to June 30, 2012)	<u>2012 Budget</u>
<b>PLANNING - ADMINISTRATION</b>	
2220 Electricity	\$205,000
2210 Natural Gas	\$34,610
2230 Water and Sewer	\$6,350
1903 Propane	\$0
<hr/>	
Tax Increase	\$2,500
Wind Energy Fee	\$1,540
<hr/>	
Total	<b>\$250,000</b>
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<b>PARKS</b>	
2220 Electricity	\$1,333,330
2210 Natural Gas	\$418,930
2230 Water and Sewer	\$526,540
1903 Propane	\$110,000
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Tax Increase	\$22,800
Wind Energy Fee	\$8,800
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Total	<b>\$2,420,400</b>
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<b>ENTERPRISE</b>	
2220 Electricity	\$885,200
2210 Natural Gas	\$358,300
2230 Water and Sewer	\$37,900
1903 Propane	\$35,400
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Tax Increase	\$12,850
Wind Energy Fee	\$6,100
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Total	<b>\$1,335,750</b>
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<b>PROPERTY MANAGEMENT</b>	
2220 Electricity	\$7,800
2210 Natural Gas	\$3,200
2230 Water and Sewer	\$0
1903 Propane	\$0
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Tax Increase	\$1,100
Wind Energy Fee	\$0
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Total	<b>\$12,100</b>
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<b>Overall Total</b>	<b>\$4,018,250</b>

# M-NCPPC Resource Conservation Report

Energy  
Recycling & Solid Waste Management  
Water  
Green Parks/Sustainability





# Overall Program Activities – Aggressive Cost Reduction Plan 5%

- Monitored Consumption and Costs
- Evaluated Facilities
- Implemented operations and maintenance improvements
- Implemented energy retrofit projects
  - Lighting
  - Lighting Controls
  - Temperature Controls
  - Replaced aged HVAC Equipment
- Continued to procure energy in a deregulated market
- Obtained State and Federal grants to implement energy retrofit projects



# Results 2010

	Budget 2010	Actual Expenditure	Reduction
DEPARTMENT OF PLANNING	\$236,650	\$218,796	\$17,854
DEPARTMENT OF PARKS	\$2,591,145	\$2,103,166	\$487,979
ENTERPRISE	\$1,512,455	\$1,226,178	\$286,277
Totals	\$4,340,250	\$3,548,140	<u>\$792,110</u>



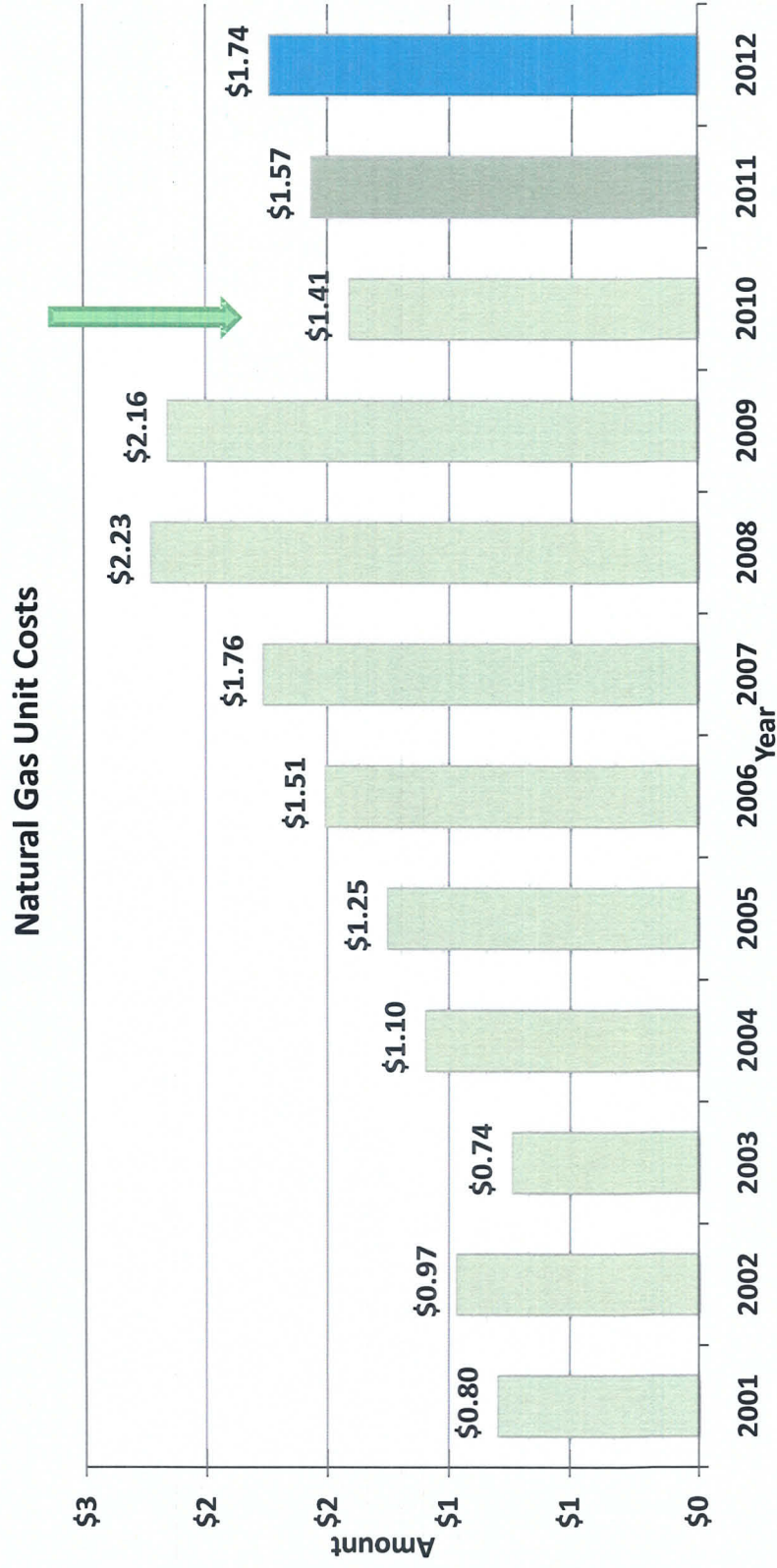


# Results 2010

- Actual reduction exceeded the estimate of \$450,000 by \$342,100 – Total \$792,110
- Consumption and costs were significantly lower than projected
- Water and sewage was a \$194,979 reduction
- Unit cost for natural gas dropped from \$2.16 in 2009 to \$1.41 in 2010 - \$430,585 reduction
- Reduction in property management costs for past three years – total 43% reduction in 2010
- Consumption:
  - Electricity: 12% reduction
  - Natural Gas: 9% reduction
  - Water: 27% reduction
  - Propane: 9% reduction



# Natural Gas Unit Costs





# Energy

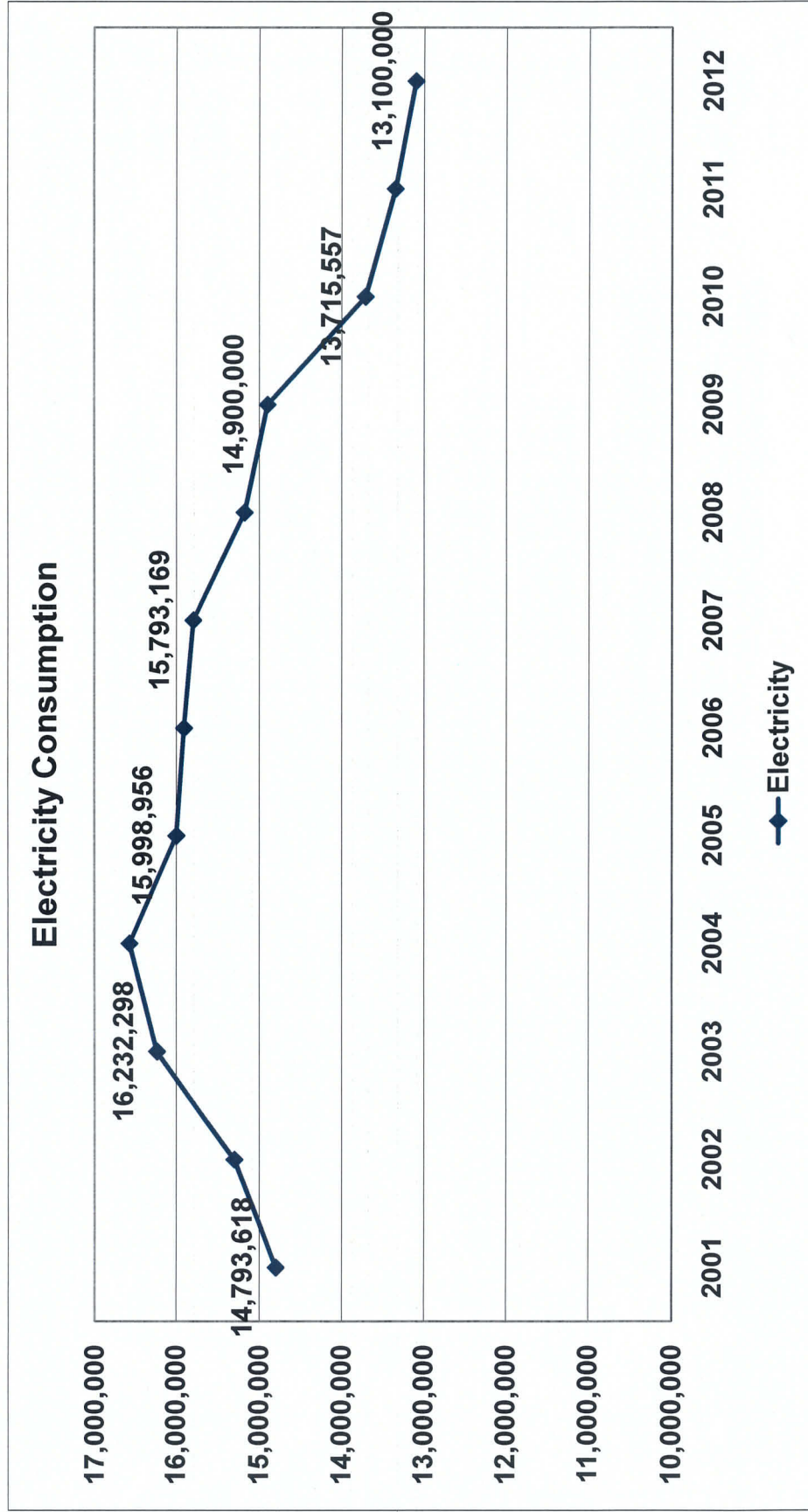


# Budget Recommendations

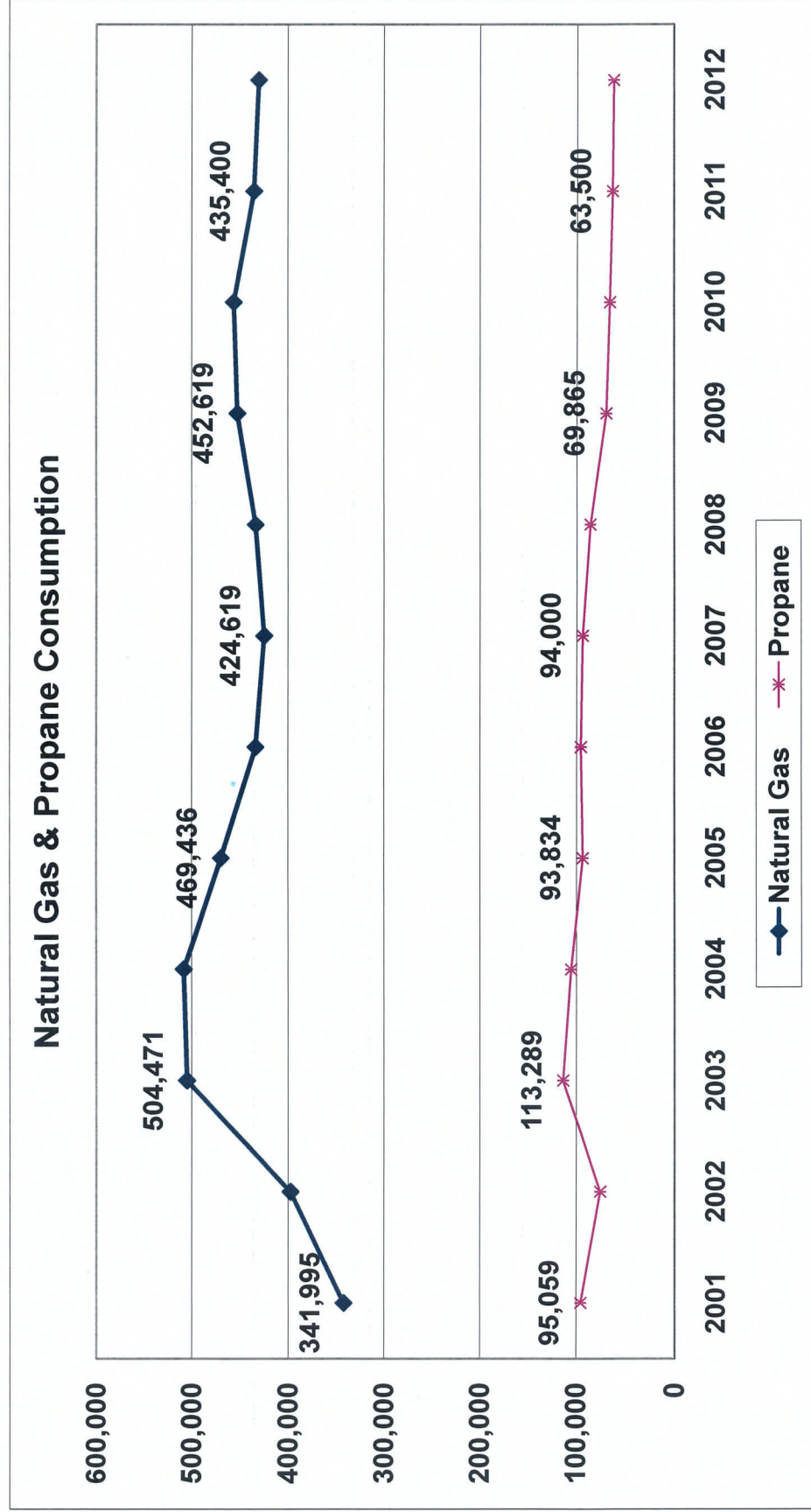
## 2010 to 2012

	Budget 2010	Budget 2011	Proposed Budget 2012
<b>DEPARTMENT OF PLANNING</b>	\$236,650	\$268,000	\$250,000
<b>DEPARTMENT OF PARKS</b>	\$2,591,145	\$2,591,145	\$2,420,400
<b>ENTERPRISE</b>	\$1,512,455	\$1,512,455	\$1,347,850
	\$4,340,250	\$4,371,600	\$4,018,250

# Electricity Consumption



# Natural Gas & Propane Consumption





# Energy Costs

Energy Costs 2001 to 2012







# Programs & Projects Completed in 2010

- **Park Activity Buildings**
  - Upgraded existing T-12 lighting to T-8 and fixtures
  - Installed additional energy management temperature and occupancy controls
- **Park Maintenance Facilities**
  - Installed additional programmable energy management temperature controls
  - Installed additional lighting occupancy controls where applicable
  - Replaced existing 250 watt HID shop and storage facility lighting with T-8 fixtures
- **Parkside Headquarters**
  - Installed additional programmable energy management temperature controls
  - Installed lighting occupancy controls



## Programs & Projects Completed in 2010

- **Cabin John Ice Rink**
  - Replaced existing 400 watt HID rink lights with T-8 fixtures
- **Wheaton Ice Rink**
  - Replaced existing 400 watt HID rink lights with T-8 fixtures
- **Montgomery Regional Office Building**
  - Conducted Energy Assessment Study July 2009
  - Identified project and program opportunities 12 months - 12% reduction
  - Long-term Capital Improvement Projects – Additional 15% reduction
- Investigated primary facilities using natural gas to determine additional programs and projects to reduce consumption and costs





# Grant in 2010 - \$72,000

- Grant received from Maryland Energy Administration
  - Developed Assessments to Identify Projects
  - Researched Grant Opportunities
  - Submitted Applications –Assessments Provided Details
  - Negotiated funding level from \$50,000
- Developed Project Specifications and Bid Documents
- Contractor Selection & Coordination
- Fast-Track Implementation Process
- May 15<sup>th</sup> Deadline
- Contractor Cost Allowed for additional work



# Ice Rinks

## Lighting Project – HID to T-8





**Additional MEA Grant Projects**

	Number	Investment - Bulbs Only - No Labor	Savings	Payback
Replace Canopy lighting w/ 48 LED bulb and ballast. Cabin John Ice Rink	11	\$4,950	\$3,600	1.4
Replace Canopy lighting w/ 48 LED bulb and ballast. Wheaton Ice Rink	8	\$3,600	\$3,200	1.1
Install 7W dimmable LED bulbs @ Rockwood Manor	40	\$2,115	\$1,175	1.8
Install 7W non dimmable LED bulbs @ Rockwood Manor	30	\$1,100	\$610	1.8
Install 48W LED outdoor bulbs @ Rockwood Manor	12	\$5,400	\$3,860	1.4
Install 21W dimmable LED bulbs @ Seneca Creek Lodge	26	\$2,315	\$1,290	1.8
Install 36W Outdoor LED Street Light bubs @ Seneca Creek Lodge	6	\$1,930	\$1,075	1.8
Install 9W Dimmable CRI LED bulbs@ Seneca Creek Lodge	14	\$1,170	\$650	1.8
<b>Totals</b>		<b>\$22,580</b>	<b>\$15,460</b>	<b>1.5</b>



# Programs & Projects Underway in Fiscal Year 2011

- Funding CIP/Energy Projects - \$45,000
- Olney Manor Recreational Park
  - Install LED parking lot lighting
- Saddlebrook Park Police Headquarters
  - Upgrade lighting to applicable T-8 fixtures
  - Add lighting controls where applicable in assembly areas and workrooms
  - Replace the aging HVAC Roof Top Units with new state-of-the-art units to improve operating efficiency by 30%
- Parkside Headquarters
  - Install additional programmable energy management temperature controls
  - Install lighting occupancy controls where applicable
  - Replace the aging HVAC Roof Top Units with new state-of-the-art units to improve operating efficiency by 30%
- Developing **Updated** Assessment Reports for next Grant Opportunity:
  - ▶ Park Maintenance Centers (Five)
  - ▶ Parkside Office Facility
  - ▶ Saddlebrook - Office/Auditorium Facility
- Develop a pilot test solar application: Black Hill Maintenance Yard & Visitors Center



# County Grant for 2011 -

## \$111,000

- Grant from U.S. Department of Energy
- Identified project opportunities
- Developed application and submitted to County
- Funding Approved December 2010 - \$111,000
  - Projects to include:
    - Solar & Wind Pilot Project
    - LED light conversions – Park Facilities
    - LED street light upgrades

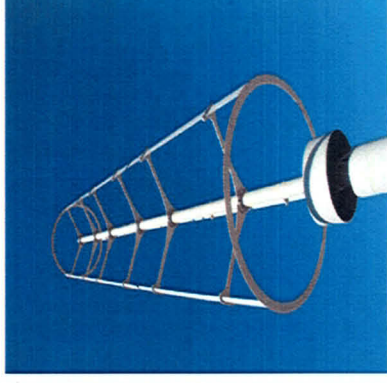
<u>Location</u>	<u>Project</u>	<u>Investment</u>	<u>Savings</u>	<u>Payback Period</u>
South Germantown Park Restroom	Solar & Wind Installation	\$40,000	\$4,600	8.7
Black Hill Visitor Center	HVAC	\$10,000	\$2,800	3.6
Little Bennett Camp Ground Office	HVAC	\$4,000	\$1,100	3.6
Brookside Sycamore House	HVAC	\$4,000	\$1,100	3.6
Brookside Visitor Center	HVAC	\$4,000	\$1,100	3.6
Black Hill Maintenance Yard	HID to T-8 Lighting	\$15,000	\$6,800	2.2
South Germantown Maintenance Yard	HID to T-8 Lighting	\$10,000	\$4,500	2.2
Meadowbrook Maintenance Yard	Street Lighting to LED	\$6,000	\$3,400	1.8
Cabin John Maintenance Yard	Street Lighting to LED	\$6,000	\$3,400	1.8
Black Hill Maintenance Yard	Street Lighting to LED	\$6,000	\$3,400	1.8
Wheaton Maintenance Yard	Street Lighting to LED	\$6,000	\$3,400	1.8
<b>Totals</b>		\$111,000	\$35,600	3.1



# Grant includes

## Renewable Energy Pilot Project

- South Germantown Demonstration Project
- Solar & Wind



# Energy Cost Reduction Plan 2011 –

## Seek additional 5% reduction

- Temperature adjustments - one degree
- Close offices 8 pm to 6 am - Monday to Thursday
- Close offices 6 pm Friday to 6 am Monday - 60 hours per week
- Staff - Turn it off campaign
- Turn off shelter and other park lights & reduce heat temperature set points in the winter
- Reduce parking lot lighting where applicable in the winter





# **County Executive: Cross-Agency Resource-Sharing Committee (CARS)**

## **Program and Projects for 2012 (Adopted)**

- (R1) Establish an Interagency Energy Technical Service Organization
  - (Recommitment Interagency Committee on Energy and Utilities Management)
- (R2) Develop a Multi-Agency Energy Service Contract for Energy-Efficiency and Renewable Energy Retrofits
  - (Alternative project funding strategy)
- (R4) Launch and Interagency Energy Conservation Campaign
  - (Employee Participation Program)
- (R5) Retrofit T8 32W Fluorescent Lamps with 25/28W Replacements
  - (Cost to be determined – MEA Grant/loan being evaluated)
- (R6) Provide Building Operator Certification (BOC) Training to Facilities Staff
  - (One MNCPPC Staff to attend)



# Programs & Projects Planned

## for Fiscal Year 2012

- Black Hill Nature Center
  - HVAC System Ground Source Heat Pump Alternative
- Saddlebrook Park Office
  - Upgrade lighting to applicable T-8 fixtures
- Meadowbrook Nature Center
  - Replace the aging HVAC Roof Top Units with new state-of-the-art units to improve operating efficiency by 30%
- Black Hill Maintenance
  - Replace existing 250 watt HID shop and storage facility lighting with T-8 fixtures

# Projects being considered

## Fiscal Year 2013

### CARS: (R2) Develop a Multi-Agency Energy Service Contract for Energy-Efficiency and Renewable Energy Retrofits (Alternative project funding strategy)

- Explore expansion of energy management control and lighting control capability major facilities
  - ▶ Park Maintenance Centers (Five)
  - ▶ Parkside Office Facility
  - ▶ Saddlebrook - Office/Auditorium Facility
  - ▶ Montgomery Regional Office

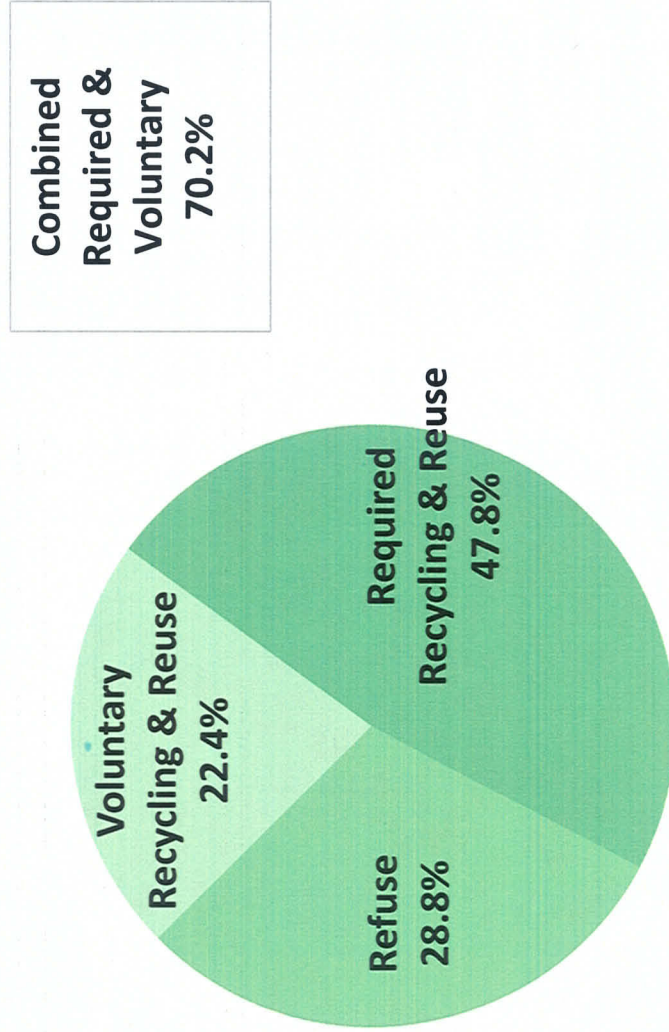


# Recycling and Solid Waste



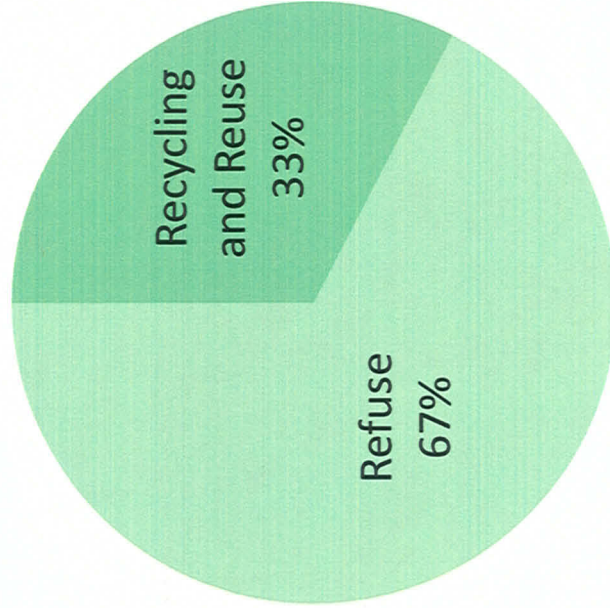
# Results 2010

## Solid Waste & Recycling Program Results FY 2010



# Starting Point 2002

## Prior to Comprehensive Program Rates in 2002







# Recycling & Solid Waste Management

## Program underway in 2011

- Spring Campaign Planned - Recycling Captains
- Earthday Events – County Recycling
- Capturing data on the final 2% (Goal 50%)
  - Capture data on new programs to recycle computers, phones, cell-phones, printer cartridges, batteries, furniture, carpet, and related consumable materials
  - Expand yard waste, tree debris and animal waste reuse and composting programs
- Update Refuse and Recycling Container Signage
- Consolidation of Services for Contractor Collection & Disposal





# RECYCLE



 *Keeping it Green*

# PLASTIC.METAL. GLASS.



- Aluminum Cans
- Plastic Bottles
- Pie/Cake Pans
- Aluminum Foil
- Disposable Cups
- Glass Jars
- Plastic Containers
- Plastic Plates
- Plastic Silverware
- Glass Bottles



## Take it off!



Both the lids and the bottles may be recycled, but they must be placed in the container separately

## Rinse it off!



Plastic containers, such as those from microwave meals, can be recycled. Just make sure to rinse them off first.

M-NCPPC RECYCLING  
*Keeping it Green*



A decorative graphic on the left side of the page, consisting of several overlapping, wavy, light green shapes that create a sense of movement and depth.

## Reduction Plan –

### Seek additional 5% cost reduction

- Consolidation of Services for Contractor Collection & Disposal
  - Dumpsters in Regional Parks
  - Single Stream Recycling Collection
- Reduction of disposal trips to the transfer station
- Reduce overall volumes to reduce disposal costs



# Water

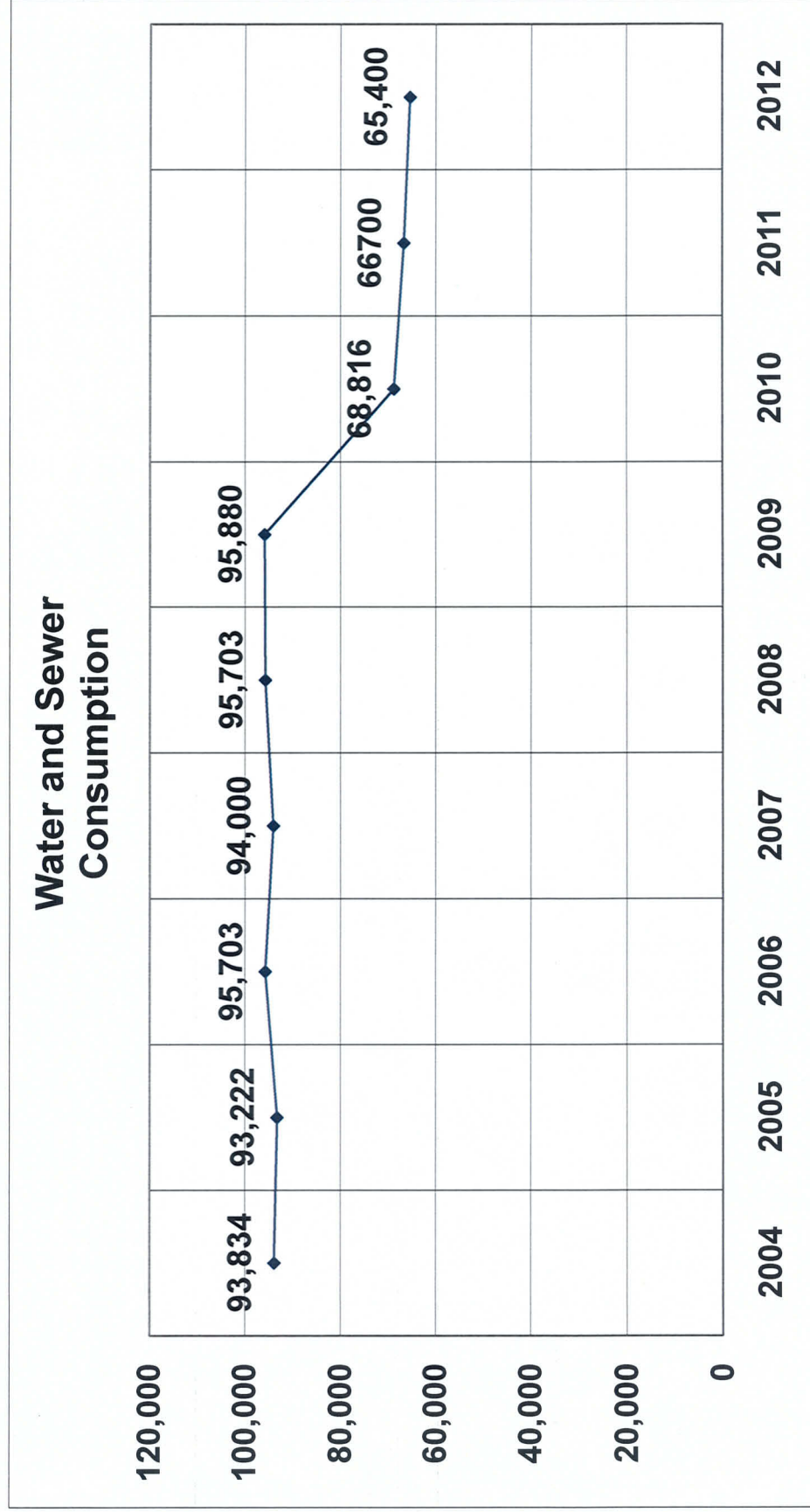




# Results 2010 & 2011

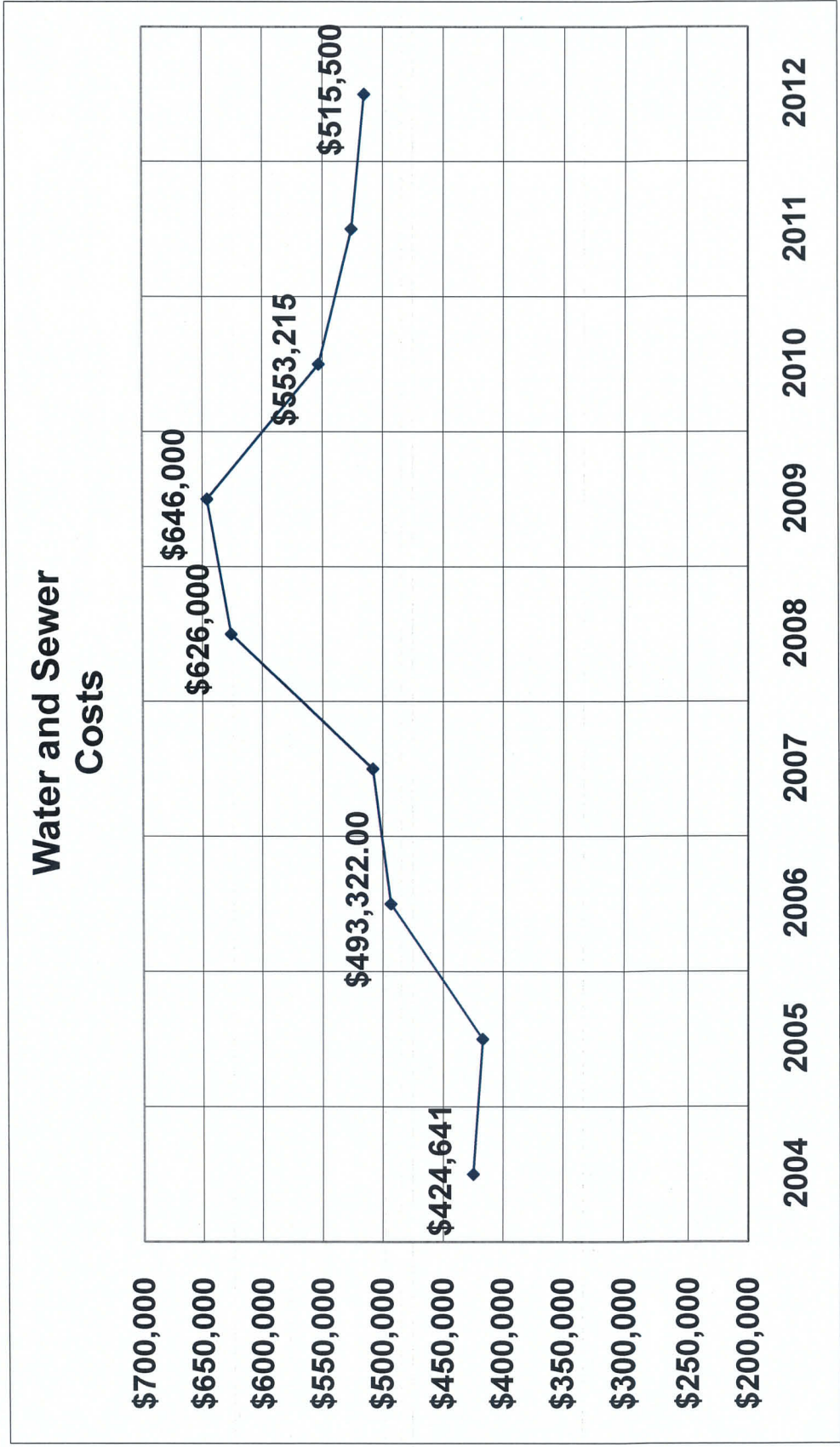
- Staff awareness and best management practices resulted in consumption reductions
- Largest yearly reduction in consumption and cost
  - Consumption – 27% reduction
  - Cost - \$194,979 when compared to amount budgeted in 2010 & 2011

# Water Consumption





# Water Costs





## **Water Cost Reduction Plan 2011**

### **Seek additional 5% reduction**

- Reduce irrigation domestic water use by 15% by 2014
- Expand rain water collection
- Change plant selections to reduce water use requirements
- Turn off selected location water fountains especially if use is less than billing cost
- Monitor for leaks
- Review bills for major locations upon payment using E-Cap
- Reduction Goal \$30,000 in 2012





# Pilot Projects

- Cabin John Ice Rink Roof Water Collection and Irrigation Water Pilot Project
  - Seeking Grant funding \$45,000
  - Reduce water use by 25% - \$9,750 per year
- Installation of low-flow fixtures
- Installation of dual flush toilets
- Installation of faucet flow controls
- Installation of waterless toilets in remote locations



# Green Parks





# Green Mandates

## State of Maryland – EmPower Maryland

- Reduce energy consumption by 15% by 2015

## Montgomery County Government - Bill Number 17-06

- November 28, 2006
- Requiring **new buildings** of 10,000 square feet and larger to achieve a US Green Building Council - Leadership in Energy and Environmental Design (LEED) Silver designation effective September 2008
- Renovations of **existing buildings** of 10,000 square feet and larger to achieve a LEED Silver designation effective September 2008

## Montgomery County Government - Proposed County Climate Protection Plan –

- Carbon Footprint Reduction Goal by 2020 of 20%



## Green Park Pilot Project – Brookside Gardens

- Brookside Gardens had developed a full scale sustainable site-parks and horticultural program.
- Brookside Gardens adopting U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Criteria to guide the programs development for all the buildings on the site.
- Facilities Management Division elected to focus in 2011 on conducting one comprehensive assessment to determine steps required to meet LEED Silver Certification requirements for existing buildings.
- Brookside Gardens was selected based on the programs underway.
- Brookside Gardens includes facilities of all types typical of other park locations.
- Assessment started in September and report is in final development.
- Lessons learned can be applied to other facilities.





## Green Parks – Sustainability Goals

### 2012 & 2015

- **Fleet – Vehicle Assessment Update Underway –**
  - Expand the use of hybrid vehicles
  - Conversion underway for all trucks to be fueled with bio-diesel fuel 20% summer & 5% winter
  - Increase vehicle efficiency and reduce carbon emissions
- **Reduce domestic water use for irrigation by 15%**
- **Formalize “green procurement” guidelines**
- **Increase the use of Renewable Energy by 5%**
  - Solar Applications
  - Wind Application
  - Geothermal Applications
- **Design new facilities and renovation projects to meet LEED Certification criteria**