



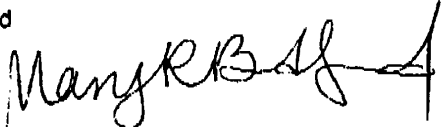
MONTGOMERY COUNTY DEPARTMENT OF PARKS
THE MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB
1/24/08
Agenda Item 19

January 18, 2008

MEMORANDUM

TO: Montgomery County Planning Board

FROM: Mary R. Bradford, Director of Parks 

SUBJECT: Briefing on the Department of Parks' Resource Conservation Plan

Attached, for your information, is a copy of the Department of Parks' Resource Conservation Plan, which 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.

Al Astorga, our staff representative, and Richard Anderson, CQI Associates, will be available to answer any questions you may have.

MRB:DLF

Montgomery County
M-NCPPC
Prince George's County

The Maryland-National Capital Park and Planning Commission

**MONTGOMERY COUNTY
DEPARTMENT OF PARKS
AND
DEPARTMENT OF PLANNING**

RESOURCE CONSERVATION PLAN

Fiscal Year 2009

January 15, 2008

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RESOURCE CONSERVATION PLAN

The Maryland-National Capital Park and Planning Commission

Montgomery County

Department of Parks and Department of Planning

I. INTRODUCTION

The Maryland-National Capital Park and Planning Commission was established by the Maryland General Assembly in 1927. The Commission serves the bi-county area of Prince George's and Montgomery Counties. This area has a population of 1.7 million citizens and extends over 1,000 square miles adjacent to the Nation's Capital.

The purpose, powers, and duties of the Commission are found in Article 28 of the Annotated Code of Maryland. Pursuant to this Article, the Commission is empowered to:

- acquire, develop, maintain, and administer a regional system of parks and defined as the Metropolitan District;
- prepare and administer a general plan for the physical development in the areas of the two Counties defined as the Regional District; and
- Conduct a comprehensive recreation program.

The Commission consists of ten members, five appointed by Montgomery County and five by Prince George's County. The Commission coordinates and acts on matters of interest to both counties, and meets at least once a month. The members of the Commission from each county serve as separate Planning Boards to facilitate, review, and administer the matters affecting their respective counties.

The Commission administers a park system of more than 59,000 acres. It is composed of stream valley parks, large regional parks, neighborhood parks and park-school recreation areas. Its staff of career employees includes planners, park managers, recreation administrators, park police, and administration staff. In addition, seasonal workers staff numerous park and recreation programs.

The Commission's function in Montgomery County is carried out by the Montgomery County Department of Parks and the Department of Planning under the guidance of The Montgomery County Park and Planning Board.

The Montgomery County Department of Parks is responsible for the acquisition, development and management of more than 33,000 acres of parkland, providing residents and visitors with outstanding recreational opportunities, facilities and open space for natural resources stewardship.

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.

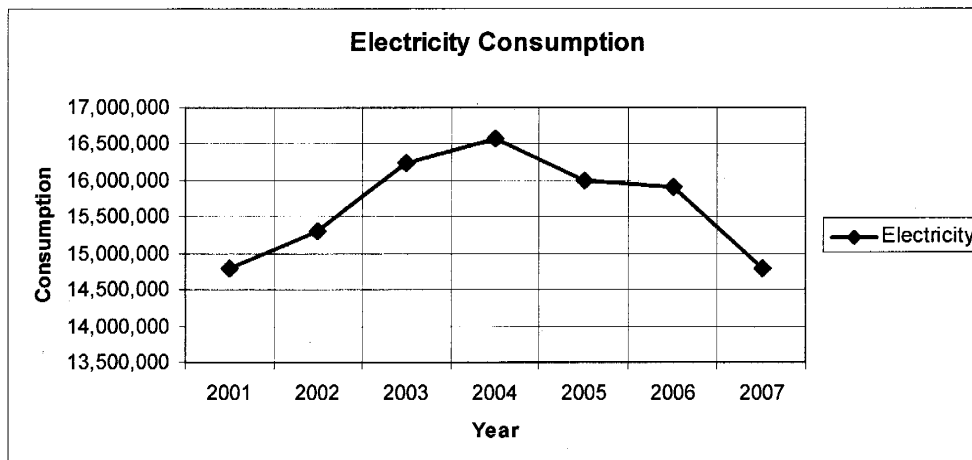
This report presents the accomplishments as of December 2007 and the plans for the 2009 fiscal year to conserve energy and water resources as part of a comprehensive Resource Conservation Plan launched July 2003.

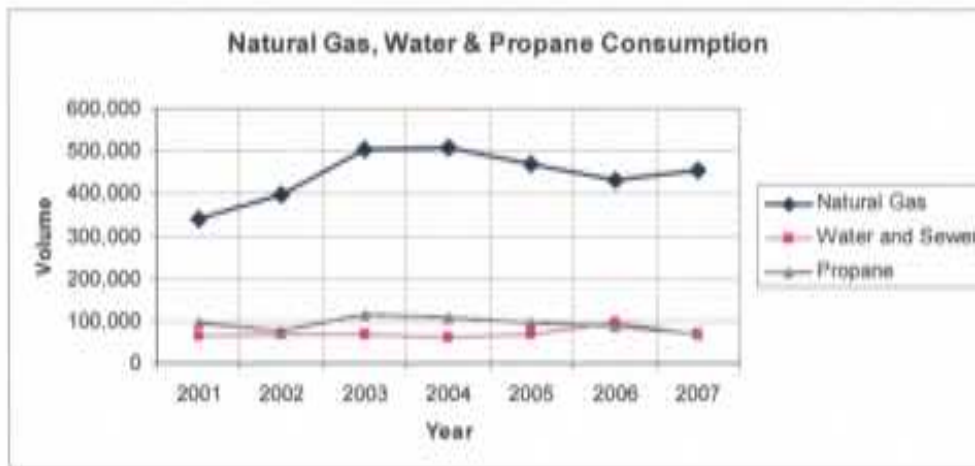
II. RESOURCE CONSERVATION PLAN: FISCAL YEAR 2007 (July 2006 to June 2007)

Status Report as of June 2007: The results of the programs and projects implemented in Fiscal Year 2007 are:

Usage:

Electricity: 7% reduction
Natural Gas: 4.6% increase
Water: 27% reduction
Propane: 18% reduction





Utility Cost:

Department	Budget
Planning	\$203,000
Parks	\$2,365,000
Enterprise	\$1,351,000
Totals	\$3,919,000

Completed Programs and Projects in Fiscal Year 2007:

- Staff implemented a series of lighting, controls, and equipment replacements projects at the following facilities to reduce consumption.
 - Cabin John Regional Park Maintenance Center
 - Wheaton Park Regional Maintenance Center
 - Little Bennett Regional Park Maintenance Center
 - Pilgrim Hills Recreation Center
 - Kemp Mills Center
 - Woodside Gym
 - Meadowbrook Community Center
- Programs were implemented to continued the Employee Awareness Program

Energy Project Expenditures:

Programs:	\$36,120.00
Projects:	\$76,220.00
Total in FY 2007:	\$112,340.00

Avoided Cost - Savings Estimate 2006 to 2007: (Actual)

	Units	Usage Amounts			Cost	
		2006	2007	Difference	Unit Cost	Amount
Electricity	KWH	15,907,029	14,793,169	1,113,860	\$ 0.1290	\$ 143,688
Natural Gas	THERM	433,696	454,619	-20,923	\$ 1.5800	\$ (33,059)
Water and Sewer	GALLON	95703	69,865	25,838	\$ 7.2070	\$ 186,214
Propane	KGALLON	86,318	70,679	15,639	\$ 1.7880	\$ 27,963
Total Avoided Cost - Savings						\$ 324,806

III. RESOURCE CONSERVATION PLAN: FISCAL YEAR 2008
(July 2007 to June 2008)

Status Report as of December 2007: The results of the programs and projects being implemented in Fiscal Year 2008 as of December 2007 are:

Usage:

The following is a consumption projection as of November 30, 2007.

Utility Service	Consumption as of 11-16-2007	Units	Projection as of 11-30-2007	Budget	Difference
ELECTRIC	5,227,285	KWH	14,375,000	14,500,000	125,000
NATURAL GAS	61,540	THER	452,000	445,000	-7,000
WATER	39,759	GAL	66,855	69,500	2,645
PROPANE	2,860	KGAL	64,880	68,500	3,620

Utility Costs:

Based on the current costs and projection for the balance of the year, costs will be within the Fiscal Year 2008 budget. The following is cost projection as of November 30, 2007.

DIVISION NAME	Costs as of 11-16-2007	Projection as of 11-30-2007	Budget	Difference
PLANNING DEPARTMENT	\$75,484.67	\$201,000	\$192,500	(\$8,500)
PARKS	\$575,756.37	\$2,105,000	\$2,232,600	\$127,600
PROPERTY MANAGEMENT	\$2,925.51	\$11,000	\$21,960	\$10,960
ENTERPRISE	\$413,015.19	\$1,240,000	\$1,195,400	(\$44,600)
	\$1,067,181.74	\$3,557,000	\$3,642,460	\$85,460

Projects Underway in Fiscal Year 2008:

- Staff is implementing a series of lighting, controls, and equipment replacement projects at the following facilities to reduce consumption.
 - Meadowside Nature Center
 - Wheaton-Claridge Recreation Center
 - Clarksburg Recreation Center
 - Clarksville Parks
 - Hillandale Recreation Center
 - Homewood Lighting
 - Nolte Recreation Center
 - Dale Drive Recreation Center
 - North Four Corners Recreation Center
 - Colesville Recreation Center
 - Argyle Recreation Center
- Staff is installing new satellite linked automated time clocks to control exterior lighting at regional park and office facilities.
- Purchased LED bulb exhibit lights for use at the annual Brookside Gardens Holiday Light display.
- Staff has installed a solar powered exterior light at the Black Hills Regional Park Boat Ramp
- Staff has implementing selected water conservation programs that include the installation of waterless toilets at the following facilities:
 - Needwood Boat House
 - Blair Hills Park
 - Olney Mills Park
 - Georgian Forest Recreation Center
- Staff is implementing an employee awareness and participation program to reduce their “carbon footprint” at home and work.
- Staff is conducting an assessment of the major facilities to determine steps required to meet LEED Silver Certification requirements for existing buildings to establish a program plan for project improvements starting in FY 2009.

Energy Project Expenditures:

Programs:	\$35,160.00
Projects:	\$92,200.00
Total in FY 2007:	\$127,160.00

Avoided Cost - Savings Estimate 2007 to 2008 (Projected):

	Units	Usage Amounts			Cost	
		2007	2008	Difference	Unit Cost	Amount
Electricity	KWH	14,793,169	14,375,000	418,169	\$ 0.1394	\$ 58,293
Natural Gas	THERM	454,619	452,000	2,619	\$ 1.9700	\$ 5,159
Water and Sewer	GALLON	69,865	66,855	3,010	\$ 9.1470	\$ 27,532
Propane	KGALLON	70,679	64,880	5,799	\$ 1.6850	\$ 9,771
Total Avoided Cost - Savings						\$ 100,756

IV. PLANNED RESOURCE CONSERVATION PLAN - Fiscal Year 2009
(July 1, 2008 through June 30, 2009)

Plans are underway to continue to reduce consumption in Fiscal Year 2009. The program activities in Fiscal Year 2009 are:

Usage:

Overall consumption should be able to be reduced by 2% in Fiscal Year 2009 as follows.

Utility Service	Units	2008	2009	Difference
ELECTRIC	KWH	14,500,000	14,400,000	-100,000
NATURAL GAS	THER	445,000	440,000	-5,000
WATER	GAL	68,500	67,100	-1,400
PROPANE	KGAL	69,500	68,000	-1,500

Utility Costs:

The following is cost projection for Fiscal Year 2009.

Department	Budget
Planning	\$203,000
Parks	\$2,365,000
Enterprise	\$1,351,000
Totals	\$3,919,000

Proposed Programs and Projects in Fiscal Year 2009:

- Implementing lighting, controls, and equipment replacement projects at the following facilities to reduce consumption.

- Meadowbrook Regional Park Maintenance Center
- Shady Grove Central Maintenance Center
- Recreation Centers (Five Locations to be Determined)
- Purchase additional LED bulb exhibit lights for use at the annual Brookside Gardens Holiday Light display.
- Establish employee awareness and participation program to assist the staff reduce their “carbon footprint” at home and work.
- Implement selected water conservation programs at the major regional parks and park maintenance centers.
- Implement projects at major facilities to meet LEED Silver Certification requirements for existing buildings as determined in 2008.

Energy Project Expenditure Budget:

Programs:	\$36,860.00
Projects:	\$77,000.00
Total in FY 2007:	\$113,860.00

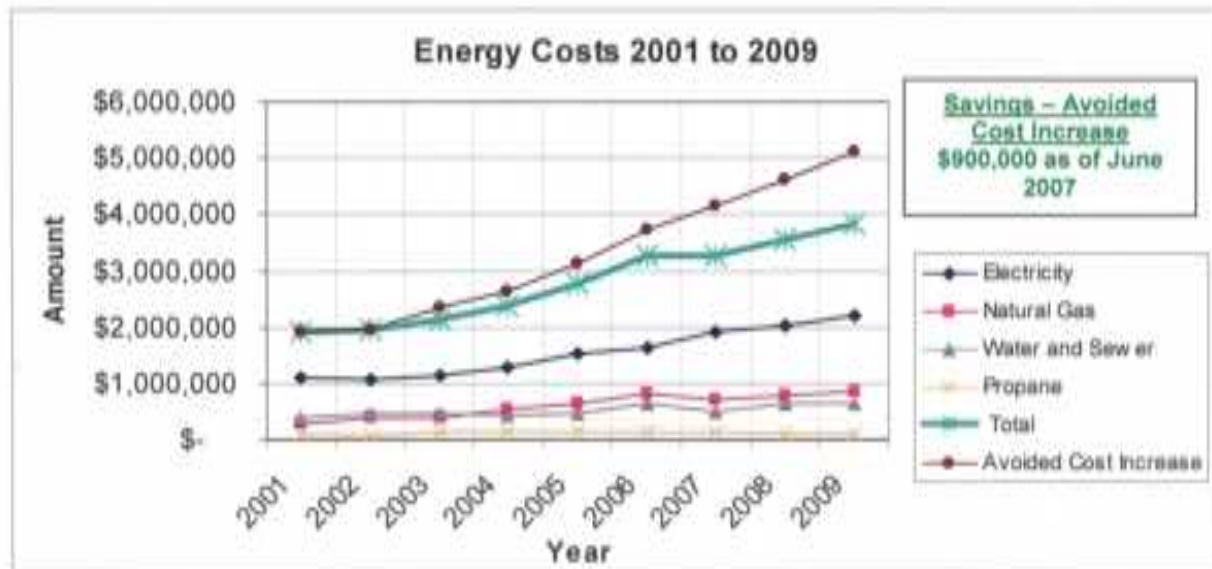
Avoided Cost - Savings Estimate 2008 to 2009 (Estimated):

	Units	Usage Amounts			Cost	
		2008	2009	Difference	Unit Cost	Amount
Electricity	KWH	14,500,000	14,400,000	100,000	\$0.15	\$15,300
Natural Gas	THERM	445,000	440,000	5,000	\$2.16	\$10,785
Water and Sewer	GALLON	68,500	67,100	1,400	\$9.63	\$13,478
Propane	KGALLON	69,500	68,000	1,500	\$1.77	\$2,648
Total Avoided Cost - Savings						\$42,210

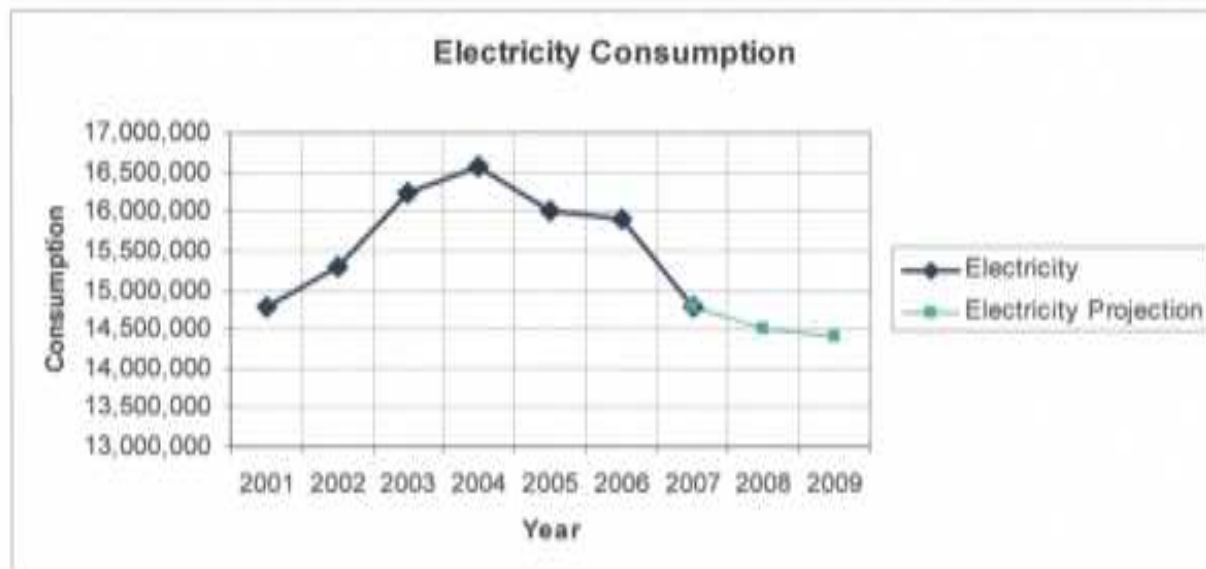
V. SUMMARY - PROGRAM RESULTS 2001 TO 2009

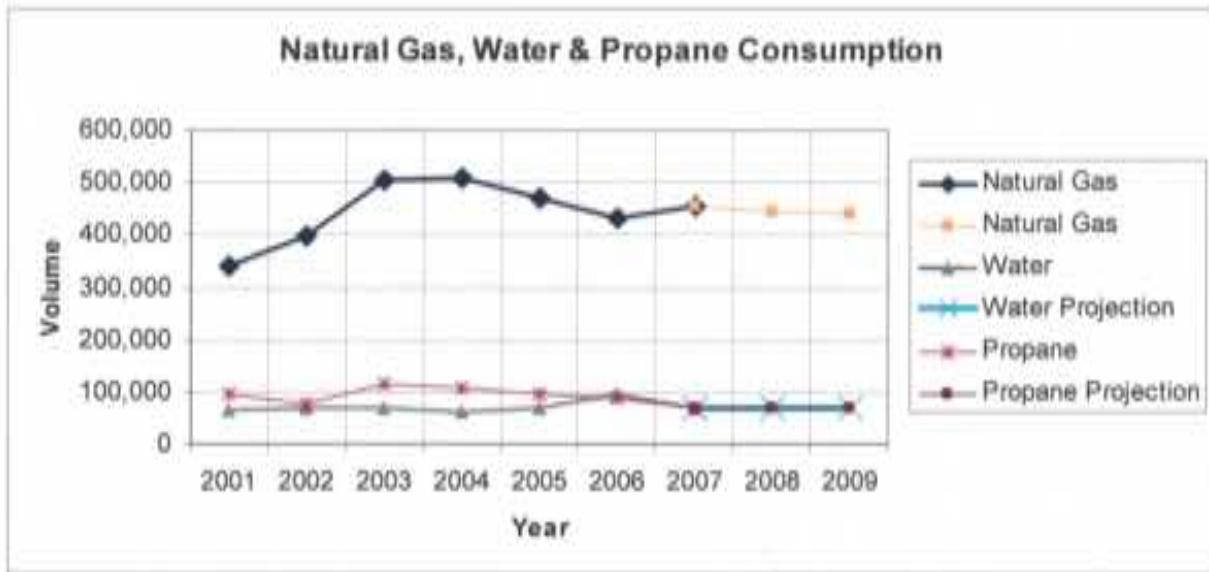
The Montgomery County M-NCPPC energy programs and projects have avoided over \$900,000 in cost increases since 2003.

The following chart shows actual and projected costs for utilities for the period 2001 to 2009:

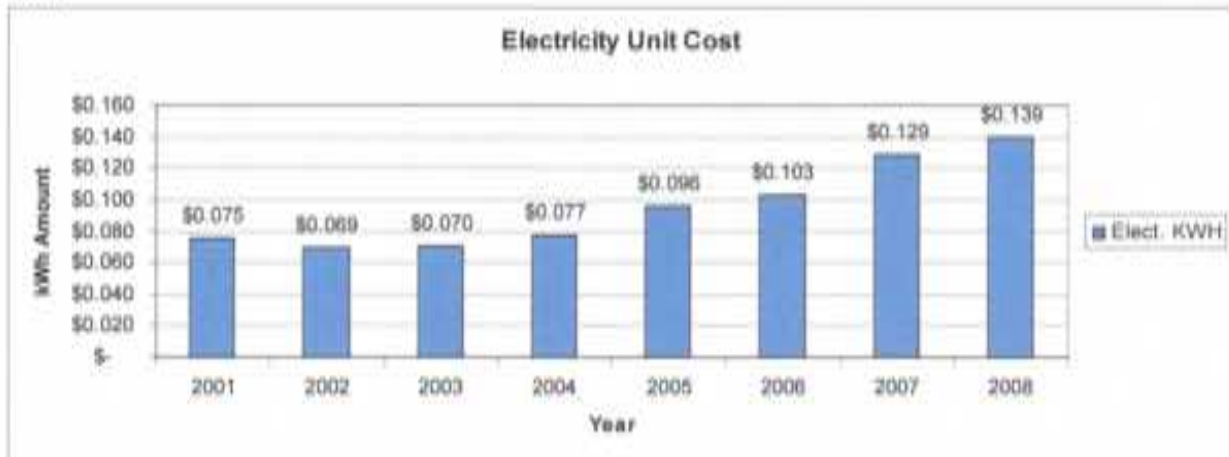


The Montgomery County M-NCPPC energy programs and projects have reduced usage since 2003 as shown in the following charts:





The history of unit costs paid for Electricity and Natural Gas are shown on the following chart



VI. FUTURE PROJECTS - 2010 TO 2015

Park Maintenance Centers

- Replace existing 250 watt HID shop and storage facility lighting with T-8 fixtures and 25 watt bulbs
- Replace exterior lighting with lower wattage bulbs and fixture heads to meet “Dark Sky” requirements

Cabin John and Wheaton Ice Rinks

- Replace existing 400 watt HID rink lights with T-5 fixtures and 25 watt bulbs
- Install lighting controls to allow fixtures to be adjusted to provide lighting levels at 50%, 75%, and 100% depending on the event being conducted in the rinks
- Upgrade the energy management system at the Cabin John Ice Rink
- Install an energy management system at the Wheaton Ice Rink

Brookside Gardens Complex

- Upgrade lighting to applicable T-8 and T-5 fixtures
- Add lighting controls where applicable in assemble areas and classrooms
- Install an energy management temperature and occupancy control system focused on controlling energy during the unoccupied period of the workday
- Replace the electric baseboard heaters in the classrooms with conventional HVAC units

Saddlebrook Police Headquarters

- Upgrade lighting to applicable T-8 and T-5 fixtures
- Add lighting controls where applicable in assembly areas and workrooms
- Install an energy management temperature and occupancy control system focused on controlling energy during the unoccupied period of the workday
- Replace the aging Roof Top Units with new state-of-the-art units to improve operating efficiency by 30%

Community Recreation Facilities

- Upgrade existing T-12 lighting to T-8 and fixtures
- Install energy management temperature and occupancy control system that can be operated centrally to control energy use when the facility is not being used by the community
- Replace the aging Roof Top Units with new state-of-the-art units to improve operating efficiency by 30%

Parkside Parks Headquarters

- Install an energy management temperature and occupancy control system focused on controlling energy during the unoccupied period of the workday
- Add lighting controls where applicable in assembly areas and workrooms
- Replace the aging Roof Top Units with new state-of-the-art units to improve operating efficiency by 30%

Estimated Cost: \$475,000 to \$580,000

Existing Measures

Programs and Projects Completed - Fiscal Years 2000 to June 2007

Measures - Existing: (implemented from FY 98 to FY 05)	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 (\$)
Capital Improvement Projects:						
Equipment Replacement Project	FY 2000 to FY 2006	\$126,000 est.	\$28,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	378,000 kWh, 11,600 therms & 3,200 Pounds	\$42,000 est. Annual Cost Avoidance
Equipment Retrofit Projects	FY 2000 to FY 2006	\$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 2006	\$28,000 est.	NA	Electricity	167,000 kWh & 6,600 therms	\$22,000 est. Annual Cost Avoidance
Lighting Projects	FY 2000 to FY 2006	\$51,000 est.	NA	Electricity	69,000 kWh	\$39,000 est. Annual Cost Avoidance
Sub - Total		\$265,000			780,000 kWh, 23,700 therms & 3,800 Pounds	\$128,000 est. Annual Cost Avoidance
Operations and Maintenance:						
Operations and Maintenance Best Management Practice and Programs	FY 2000 to FY 2006	\$128,620	\$5,000	Electricity, Natural Gas, and Propane	265,000 kWh, 15,000 therms & 2,200 Pounds	\$69,000 est. Annual Cost Avoidance
Total		\$393,620			1,045,000 kWh, 38,700 therms & 6,000 Pounds	\$197,000 est. Annual Cost Avoidance 2.0 Yrs. ROI

New Measures Fiscal Year 2008

**Resource Conservation Measures being
Implemented July 1, 2007 through June 30, 2008**

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 (\$)
Capital Improvement Projects:						
Equipment Replacement Project	Entire Year	\$30,000 est.	\$5,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	35,000 kWh, 1,800 therms & 300 Pounds	\$14,000 est. Annual Cost Avoidance
Controls Improvements	Entire Year	\$10,000 est.	NA	Electricity	15,000 kWh & 1,000 therms	\$5,000 est. Annual Cost Avoidance
Lighting Projects	Entire Year	\$52,200 est.	NA	Electricity	50,000 kWh	\$17,000 est. Annual Cost Avoidance
Sub-Total		\$92,200	\$5,000			\$36,000
Operations and Maintenance:						
Best Management Practices Programs	Entire Year	\$15,000	NA	Electricity, Natural Gas, and Propane	25,000 kWh, 1,000 therms & 300 Pounds	\$5,000 Annual Cost Avoidance
Employee Training and Participation Programs	Entire Year	\$5,000	NA	Electricity, Natural Gas, and Propane	15,000 kWh, 500 therms & 200 Pounds	\$2,000 Annual Cost Avoidance
Operations and Maintenance Improvement Programs	Entire Year	\$15,160	NA	Electricity, Natural Gas, and Propane	25,000 kWh, 1,000 therms & 300 Pounds	\$5,000 est. Annual Cost Avoidance
Sub-Total		\$35,160	NA			\$12,000
Total		\$127,160	\$5,000			\$48,000 2.65 yr ROI

Planned Measures Fiscal Year 2009

**Resource Conservation Measures Planned
to be implemented July 1, 2008 through June 30, 2009**

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 (\$)
Capital Improvement Projects:						
Equipment Replacement Project	Entire Year	\$10,000 est.	\$5,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	15,000 kWh, 1,000 therms & 100 Pounds	\$7,000 est. Annual Cost Avoidance
Controls Improvements	Entire Year	\$10,000 est.	NA	Electricity	15,000 kWh & 1,000 therms	\$5,000 est. Annual Cost Avoidance
Lighting Projects	Entire Year	\$57,000 est.	NA	Electricity	55,000 kWh	\$20,000 est. Annual Cost Avoidance
Total		\$77,000				\$32,000
Operations and Maintenance:						
Energy Best Management Practices Programs	Entire Year	\$15,000	NA	Electricity, Natural Gas, and Propane	25,000 kWh, 1,000 therms & 300 Pounds	\$5,000 Annual Cost Avoidance
Employee Training and Participation Programs	Entire Year	\$6,000	NA	Electricity, Natural Gas, and Propane	15,000 kWh, 500 therms & 200 Pounds	\$2,000 Annual Cost Avoidance
Operations and Maintenance Improvement Programs	Entire Year	\$15,860 est.	NA	Electricity, Natural Gas, and Propane	25,000 kWh, 1,000 therms & 300 Pounds	\$5,000 est. Annual Cost Avoidance
Total		\$36,860	NA			\$12,000
Total		\$113,860	\$5,000			\$44,000 2.6 yrs ROI

THE MARYLAND -NATIONAL CAPITAL PARK AND PLANNING COMMISSION

Utility Budget by Fund & Utility				
	2008 Budget		2009 Budget	
	<u>Approved CONFIRMED</u>	Wind Energy Fee Included	<u>Projection</u>	Wind Energy Fee Included
PLANNING				
2220 Electricity	\$ 157,400	\$ 2,100	\$ 164,000	\$ 4,000
2210 Natural Gas	\$ 28,750		\$ 33,000	
2230 Water and Sewer	\$ 6,000		\$ 6,000	
1903 Propane				
Sub Total	\$ 192,150	\$ 2,100	\$ 203,000	\$ 4,000
PARKS				
2220 Electricity	\$ 1,184,600	\$ 23,200	\$ 1,295,000	\$ 45,000
2210 Natural Gas	\$ 414,000		\$ 420,000	
2230 Water and Sewer	\$ 544,000		\$ 560,000	
1903 Propane	\$ 90,000		\$ 90,000	
Sub Total	\$ 2,232,600	\$ 23,200	\$ 2,365,000	\$ 45,000
Planning & Parks Total	\$ 2,424,750	\$ 25,300	\$ 2,568,000	\$ 49,000

	2008 Budget		2009 Budget	
	<u>Approved CONFIRMED</u>	Wind Energy Fee Included	<u>Projection</u>	Wind Energy Fee Included
ENTERPRISE				
2220 Electricity	\$ 663,900	\$ 15,600	\$ 730,000	\$ 30,000
2210 Natural Gas	\$ 427,800		\$ 490,000	
2230 Water and Sewer	\$ 76,600		\$ 80,000	
1903 Propane	\$ 27,100		\$ 30,000	
Sub Total	\$ 1,195,400	\$ 15,600	\$ 1,330,000	\$ 30,000
PROPERTY MANAGEMENT				
2220 Electricity	\$ 15,960	\$ -	\$ 15,000	\$ -
2210 Natural Gas	\$ 6,000		\$ 6,000	
2230 Water and Sewer				
1903 Propane				
Sub Total	\$ 21,960	\$ -	\$ 21,000	\$ -
Enterprise & Pro. Mgt. Total	\$ 1,217,360	\$ 15,600	\$ 1,351,000	\$ 30,000

Overall Totals	\$ 3,642,110	\$ 40,900	\$ 3,919,000	\$ 79,000
Electricity	\$ 2,021,860		\$ 2,204,000	
Natural Gas	\$ 876,550		\$ 949,000	
Water and Sewer	\$ 626,600		\$ 646,000	
Propane	\$ 117,100		\$ 120,000	
Wind Energy Fee	\$ -		\$ -	
Total	\$ 3,642,110		\$ 3,919,000	