

T&E COMMITTEE # 3
April 27, 2016

Workession

MEMORANDUM

April 26, 2016

TO: Transportation, Infrastructure, Energy and Environment (T&E) Committee
FROM: Linda Price, Legislative Analyst
SUBJECT: FY17 Operating Budget: Utilities NDA

Budget Summary:

- The FY17 Recommended Operating Budget for tax supported utilities is \$25,930,493, an increase of \$808,602 or 3.2 percent above the FY16 Approved Operating Budget.
- Representatives from each agency will be available to highlight utilities trends and resource conservation efforts.

Council Staff Recommendation:

- Approved the Utilities budget as submitted by the County Executive.

Attachments to this Memorandum

FY17 Recommended Operating Budget Utilities NDA © 1-5

Resolution 18-150 Excerpt: Paragraph 67 (payment of financing costs for ESCO Projects) © 6

Montgomery County Government Energy Conservation Measures © 7-9

Agency Utility Cost and Usage Trends © 10-20

Excerpts from Agency Resource Conservation Plans (RCP) and Other Documents

-Montgomery County Public Schools (MCPS)¹ © 21-25

-Montgomery College² © 26-31

-Maryland-National Capital Park and Planning Commission (M-NCPPC) © 32-36

-Washington Suburban Sanitary Commission (WSSC) © 37-44

¹ The full Environmental Sustainability Management Plan is available at http://www.montgomeryschoolsmd.org/uploadedFiles/departments/facilities/dfm/1072.14_EnvironSustainManagementPlanWeb.pdf.

² The full RCP is available at <http://cms.montgomerycollege.edu/EDU/Department2.aspx?id=31372>.

Those expected to attend this worksession include:

Executive Branch Representatives

David Dise, Director, Department of General Services (DGS)

Greg Ossont, Deputy Director, DGS

Beryl Feinberg, Deputy Director, DGS

Angela Dizelos, Chief, Central Services, DGS

Eric R. Coffman, Chief, Office of Energy and Sustainability (OES), DGS

Chris Weatherly, OES, DGS

Michael Yambrach, OES, DGS

Jed Millard, Office of Management and Budget

Agency Representatives

Mike Whitcomb, Energy Manager, Montgomery College

Maria Manfre, Utility Analyst, Montgomery College

Sean Gallagher, Assistant Director, Department of Facilities Management, MCPS

Shela Plank, Energy Program Manager, MCPS

James Poore, Division Chief, M-NCPPC

Arnold Ramsammy, Assistant Division Chief, M-NCPPC

Richard Anderson, Principal, CQI Associates

Robert Taylor, Energy Manager, WSSC

Overview

The Committee will review the Utilities NDA and utility information for all agencies. This review includes utility costs for electricity, natural gas, water and sewer, fuel oil, and propane. The budget for unleaded gasoline, diesel, and compresses natural gas fuels are reviewed separately in the DGS-Division of Fleet Management Services.³

County Government utilities are budgeted in the Utilities NDA. DGS manages the Utilities NDA, which includes utilities for all County office buildings, police stations, libraries, health and human services facilities, correctional facilities, maintenance buildings, warehouses and traffic signals and streetlights. Utility costs for other tax supported operations, which include Transit Services and Recreation, are budgeted within each special fund. Utility costs for non-tax supported funds, which include Fleet Management Services, Parking Lot Districts, Liquor Control and Solid Waste Services, are budgeted within each enterprise fund.

Utilities costs for the outside agencies, including Montgomery County Public Schools, Montgomery College, Washington Suburban Sanitary Commission, and the Maryland-National Capital Park and Planning Commission are budgeted within their respective agencies. These agencies, along with Montgomery County Government, meet regularly as part of the Interagency Committee on Energy and Utilities Management (ICEUM). ICEUM monitors changes in energy costs, as well as trends and issues in energy management, and opportunities for collaboration and efficiencies.

Increased utility expenditures result primarily from greater consumption due to new facilities and services and greater alignment of budgeted costs with actual prior year expenditures by utility type. The

³ See http://www.montgomerycountymd.gov/council/Resources/Files/agenda/cm/2016/160427/20160427_TE1.pdf.

County and agencies continue to concentrate on energy conservation and implementation of cost-saving measures to help offset increased utility consumption rates. Other factors such as increases associated with degrading buildings, increases to charges and fees, and weather conditions can also affect utility costs. As in prior years, the FY17 Recommended budget for County utilities assumes an average weather year.

Resource Conservation Plans (RCP) for MCPS, Montgomery College, WSSC, and M-NCPPC were submitted to Council staff. Excerpts from the agencies plans are included as attachments (see © 21-44). Representatives from each agency will be available at the Committee meeting to highlight utilities trends and other energy conservation initiatives.

The T&E Committee received the Office of Energy and Sustainability's annual report and update on February 4.⁴ This report serves as the County's resource conservation plan. During the February 4 meeting, OES updated the Committee on a number of planned and completed activities dealing with improving energy efficiency in buildings, energy, fleet and purchasing and waste reduction.

Agency Utility Summaries

Utility costs by agency are summarized in the following chart. Utility costs have increased slightly in FY17. However, the percent of the increases from FY16 to FY17 are smaller than the costs increases from FY15 to FY16. The total increase for all agencies from FY16 to FY17 is \$2,252,104 or 2.1 percent, which is less than the \$4,911,326 or 4.8 percent increase from FY15 to FY16. Utility budgets for County Government, MCPS and Montgomery College are all recommended to increase by 2.7 percent.

Utility Costs by Agency

| Agency | FY14 Act. | FY15 Act. | FY16 Appr. | FY17 Rec. | % of FY17 Total | FY16/FY17 Change \$ | FY16/FY17 Change % |
|---------------|----------------------|----------------------|----------------------|----------------------|-----------------|---------------------|--------------------|
| County Gov't | \$32,604,501 | \$31,723,116 | \$34,099,944 | \$35,035,583 | 32.0% | \$935,639 | 2.7% |
| MCPS | \$39,444,381 | \$36,492,289 | \$37,706,974 | \$38,716,618 | 35.4% | \$1,009,644 | 2.7% |
| Mont. College | \$6,992,988 | \$7,500,177 | \$7,840,755 | \$8,053,295 | 7.4% | \$212,540 | 2.7% |
| WSSC | \$24,934,389 | \$23,246,536 | \$23,783,400 | \$23,992,400 | 21.9% | \$209,000 | 0.9% |
| M-NCPPC | \$2,915,931 | \$3,191,795 | \$3,634,166 | \$3,519,447 | 3.2% | -\$114,719 | -3.2% |
| Total | \$106,892,190 | \$102,153,913 | \$107,065,239 | \$109,317,343 | 100.0% | \$2,252,104 | 2.1% |

Utility costs by type are summarized in the below chart for all agencies. Fuel oil and natural gas cost have decreased from FY16 costs. FY17 fuel oil costs are the lower than FY14 costs. Water and Sewer costs increased by 8.6 percent, the largest increase out of all utility types. This is due to increases in consumption and rates for water and sewer.

⁴ The packet and report See

http://www.montgomerycountymd.gov/council/Resources/Files/agenda/cm/2016/160204/20160204_TE1.pdf.

Utility Costs by Type – All Agencies

| Agency | FY14 Act. | FY15 Act. | FY16 Appr. | FY17 Rec. | % of FY17 Total | FY16/FY17 Change \$ | FY16/FY17 Change % |
|-----------------|----------------------|----------------------|----------------------|----------------------|-----------------|---------------------|--------------------|
| Electricity | \$89,660,362 | \$83,423,151 | \$86,935,657 | \$88,861,540 | 81.3% | \$1,925,883 | 2.2% |
| Water and Sewer | \$5,845,484 | \$7,189,740 | \$7,722,831 | \$8,386,061 | 7.7% | \$663,230 | 8.6% |
| Fuel Oil | \$445,650 | \$448,769 | \$569,160 | \$421,568 | 0.4% | -\$147,592 | -25.9% |
| Natural Gas | \$10,600,338 | \$10,716,984 | \$11,469,860 | \$11,256,081 | 10.3% | -\$213,779 | -1.9% |
| Propane | \$340,356 | \$375,269 | \$367,731 | \$392,093 | 0.4% | \$24,362 | 6.6% |
| Total | \$106,892,190 | \$102,153,913 | \$107,065,239 | \$109,317,343 | 100.0% | \$2,252,104 | 2.1% |

County Government Utilities

The following table details facilities owned, operated and maintained by the County from FY14-FY16.⁵ It also includes information on the number of metered units, accounts funded by the NDA and data on traffic lights and intersections.

| | FY14 | FY15 | FY16 | FY17 |
|---|-----------|-----------|-----------|-----------|
| Facilities owned | 236 | 412 | 412 | 426 |
| Square feet | 5,592,578 | 9,687,923 | 9,759,852 | 9,912,251 |
| Metered utility accounts | | 770 | 1,321 | 743 |
| Accts NDA funded | | 447 | 804 | 488 |
| Traffic lights | 67,359 | 68,426 | 68,426 | 64,700 |
| Traffic controlled signalized intersections | 822 | 822 | 832 | 833 |

Utility costs for the all County Government, including the NDA, special funds and non-tax supported funds are provided below. Electricity accounts for the largest share of utility costs, followed by fuel oil and water and sewer.

Utility Costs by Type (Summary County Government)

| Agency | FY14 Act. | FY15 Act. | FY16 Appr. | FY17 Rec. | % of FY17 Total | FY16/FY17 Change \$ | FY16/FY17 Change % |
|-----------------|---------------------|---------------------|---------------------|---------------------|-----------------|---------------------|--------------------|
| Electricity | \$27,062,175 | \$26,151,690 | \$28,486,915 | \$29,083,284 | 83.0% | \$596,369 | 2.1% |
| Water and Sewer | \$2,278,110 | \$2,444,676 | \$2,387,666 | \$2,551,824 | 7.3% | \$164,158 | 6.9% |
| Fuel Oil | \$214,114 | \$192,741 | \$306,426 | \$306,426 | 0.9% | \$0 | 0.0% |
| Natural Gas | \$2,925,691 | \$2,816,648 | \$2,799,492 | \$2,970,032 | 8.5% | \$170,540 | 6.1% |
| Propane | \$124,411 | \$117,361 | \$119,445 | \$124,017 | 0.4% | \$4,572 | 3.8% |
| Total | \$32,604,501 | \$31,723,116 | \$34,099,944 | \$35,035,583 | 100.0% | \$935,639 | 2.7% |

Estimated utility rates for FY16 and FY17 are presented in the following table by commodity. The rates are the same for the utilities budget for the NDA, special funds and non-tax supported funds. Rates for all utility types have increased.

⁵ DGS is working to update its total square footage and building characteristics.

| Utility | Unit Costs per Utility FY16 | Unit Costs per Utility FY17 |
|---------------|-----------------------------|-----------------------------|
| Electric | 0.1244/kWh | 0.1263/kWh |
| Water & Sewer | 15.82/Kgal | 16.22/Kgal |
| Natural Gas | 0.8332/Gal | 0.8582/Gal |
| Fuel Oil #2 | 2.87/Gal | 3.15/Gal |
| Propane | 4.23/Gal | 4.34/Gal |

Utilities NDA

Utility costs for the County Government Utilities NDA are \$25,930,493, an increase of \$808,602 or 3.2 percent above the Approved FY16 Operating budget. These costs are supported by the general fund. Utilities NDA costs are summarized in the following table. Water and sewer costs increased by almost 10%, the largest increase. Executive Branch staff report that OES has initiated a pilot with a local small business, based out of the Bethesda Green incubator, that specializes in water saving audits and analytics. The initial pilot will involve 11 of the County's most water intensive facilities. Specific savings will be identified as part of the audits.

NDA Utility Costs by Type – General Fund

| Agency | FY14 Act. | FY15 Act. | FY16 Appr. | FY17 Rec. | % of FY17 Total | FY16/FY17 Change \$ | FY16/FY17 Change % |
|-----------------|---------------------|---------------------|---------------------|---------------------|-----------------|---------------------|--------------------|
| Electricity | \$20,756,510 | \$20,546,268 | \$21,446,120 | \$21,915,452 | 84.5% | \$469,332 | 2.2% |
| Water and Sewer | \$1,630,635 | \$1,778,860 | \$1,650,938 | \$1,815,096 | 7.0% | \$164,158 | 9.9% |
| Fuel Oil | \$132,406 | \$183,403 | \$205,905 | \$205,905 | 0.8% | \$0 | 0.0% |
| Natural Gas | \$1,928,192 | \$1,921,777 | \$1,760,098 | \$1,930,638 | 7.4% | \$170,540 | 9.7% |
| Propane | \$52,125 | \$51,525 | \$58,830 | \$63,402 | 0.2% | \$4,572 | 7.8% |
| Total | \$24,499,868 | \$24,481,833 | \$25,121,891 | \$25,930,493 | 100.0% | \$808,602 | 3.2% |

The Executive has recommended the following changes to the Approved FY16 budget for the Utilities NDA, a net increase of \$808,602.

- *Unit Cost and consumption changes / \$966,402:* A number of adjustments are included in this increase. The first is an increase of \$945,590 due to changes in projected consumption and increased contract prices. Additionally, \$92,652 was shifted from the Leases NDA for utilities costs. The final adjustment results in a \$71,840 decrease due to closure of the Wheaton Library.
- *New building opening in FY17 / \$519,728:* New buildings account for \$519,728 or 64.3% of the increase in the Utilities NDA. The following table lists new and anticipated building openings and the FY17 utility costs associated with the openings. If new building costs were not factored into the FY17 Recommendation, the Utilities NDA would only have an increase of \$288,874 or 1.1 percent over the Approved FY16 Operating Budget.

New Building Starts and Anticipated Operating Costs

| Building | Sq. Ft. | Electricity | Natural Gas | Water and Sewer | Total Utility Operating Cost |
|--|----------------|--------------------|--------------------|------------------------|-------------------------------------|
| Colesville Depot | 12,505 | \$9,519 | \$1,497 | \$707 | \$11,723 |
| North Potomac Rec Center | 48,084 | \$80,306 | \$16,403 | \$11,701 | \$108,410 |
| Ross Boddy Rec Center | 27,436 | \$2,263 | \$409 | \$292 | \$2,965 |
| Dennis Ave. Health Center | 53,432 | \$34,632 | \$5,403 | \$3,881 | \$43,916 |
| Glenmont FS #18 | 22,564 | \$13,754 | \$2,388 | \$1,022 | \$17,164 |
| Progress Place | 40,500 | \$26,480 | \$4,337 | \$3,727 | \$34,545 |
| MASP-W-PSTA Academic Building | 114,984 | \$215,267 | \$46,876 | \$38,864 | \$301,007 |
| Total FY17 Anticipated Increase | | \$382,222 | \$77,313 | \$60,193 | \$519,728 |

- *ESCO Utility Savings / (\$4,972)*: ESCO project savings reduce the Utilities NDA by \$4,972. The majority of the savings from ESCO projects are used to pay debt service costs for ESCO projects. The following ESCO projects are planned for FY17 and FY 18: 1301 Piccard; Pre-Release Center; Longwood Community Recreation Center; 8818 Georgia Ave, Kensington Park Library; Aspen Hill Library; UpCounty Regional Services Center; and the Council Office Building. Funds can be transferred from the Utilities NDA to pay debt service and other costs associated with ESCO projects per paragraph 67 in the FY16 County Government Appropriation resolution (see © 6). **Council staff recommends including this language in the FY17 County Government Appropriation resolution and future appropriation resolutions.**
- *Clean Energy Purchase / (\$102,803)*: The Executive's recommendation includes a reduction of \$102,803 from clean energy purchases. Executive Branch staff provided the following information regarding clean energy purchases for FY16 and FY17.

Montgomery County Council Bill 9-14 required Montgomery County Government to buy 50% of its electricity from renewable sources by FY15 and 100% by FY16. As part of its negotiation process, the County was able to secure additional renewable energy credits to offset fuel oil and natural gas consumption in its buildings at negligible additional cost, resulting in a carbon neutral building portfolio. The table below includes the purchasing volume and cost for FY16 and FY17 for the County and its collaborative purchasing partners.

| Participants | Percent of Total Electricity 2016 | Percent of Total Electricity 2017 | FY16 Clean Energy Value (MWH eq) | FY17 (July 1, 2016 - June 30, 2017) (MWH eq) | FY16 Total Contract Value | FY17 Total Contract Value |
|--|--|--|----------------------------------|--|---------------------------|---------------------------|
| Montgomery County, Maryland | 100% (Plus Offsets for Natural Gas and Fuel Oil) | 100% (Plus Offsets for Natural Gas and Fuel Oil) | 270,700 | 270,700 | \$181,369 | \$192,197 |
| Montgomery County Public Schools | 20% | 20% | 46,000 | 46,000 | \$30,820 | \$32,660 |
| Montgomery College | 100% | 100% | 60,000 | 65,000 | \$40,200 | \$46,150 |
| Maryland-National Capital Park and Planning Commission | 100% | 100% | 52,000 | 52,000 | \$34,8400 | \$36,920 |
| Chevy Chase Village | 50% | 50% | 100 | 100 | \$66.97 | \$71 |
| Chevy Chase Village Section 5 | 100% | 100% | 44 | 44 | \$29.27 | \$31 |
| City of Gaithersburg | 100% | 100% | 6,542 | 6,550 | \$4,383.23 | \$4,651, |
| City of Rockville | 100% | 100% | 16,500 | 16,500 | \$11,055.00 | \$11,715 |
| City of Takoma Park | 100% | 100% | 1,800 | 1,800 | \$1,206.00 | \$1,278 |
| Town of Kensington | 100% | 100% | 198 | 198 | \$132.66 | \$141 |
| Town of Somerset | 100% | 100% | 71 | 71 | \$47.44 | \$51 |
| Total Cost All Participants | | | 453,955 | 458,962 | \$304,149.57 | \$325,864 |
| Note: All costs rounded to nearest dollar. | | | | | | |

- *Savings from Contract Negotiations / (\$569,753):* The Executive's recommendation includes a reduction of \$569,753 from contract negotiations. Executive Branch staff provided the following information regarding energy contracts.

The County has renegotiated its utility supply contract for electricity. Under the new contract, most accounts will save 10 to 20% of the previous supply rate. This only applies to the supply portion of the bill and not distribution, fuel energy taxes and other costs that make up a significant amount of the total cost of electricity. Rates are fixed for most facilities through July 1, 2019. In the interim, the County will evaluate options for energy supply post 2019, including bidding any contractual vehicles.

The natural gas contract is will expire November 2016. DGS is evaluating options through MWCOG or may issue an RFP.

Council staff concurs with the Executive's recommendation. No reduction is recommended in the NDA.



Utilities

Mission Statement

The goals of the County Government relating to utility consumption are to:

- achieve energy savings by the elimination of wasteful or inefficient operation of building systems;
- continue improvements in energy efficiency in all County operations; and
- obtain required energy fuels at the most favorable cost to the County.

HIGHLIGHTS

The County owns, operates, and/or maintains 426 facilities totaling 9,912,251 square feet. The Department of General Services manages the payment for 743 separately metered utility accounts for these facilities. The Utilities non-departmental account (NDA) budget funds 488 of these accounts, in addition to 64,700 streetlights, and 833 traffic-controlled signalized intersections.

In FY16, department staff negotiated lower rates for the contracted purchase of electricity. This results in an overall decrease in contract costs of nearly \$570,000 in FY17, which will partially offset changes in consumption.

Budget Overview

The FY17 Recommended Budget for the tax-supported Utilities NDA is \$25,930,493, an increase of \$808,602 or 3.2 percent above the FY16 Approved Budget of \$25,121,891. Allocation of these utilities expenditures is approximately: electricity, 84.5 percent; natural gas, 7.4 percent; water and sewer, 7.0 percent; fuel oil, 0.8 percent, and propane, 0.2 percent.

The FY17 Recommended Budget includes County government utilities expenditures for both tax and non-tax supported operations. Tax-supported utilities expenditures related to the General Fund departments are budgeted in the Utilities NDA, while utilities expenditures related to special fund departments are budgeted in those funds. Some of these special funds, such as Recreation and portions of the Department of Transportation, are tax supported. Other special funds, such as Solid Waste, are not supported by taxes, but through user fees or charges for services.

Utilities expenditures are also found in the budgets of other County agencies: Montgomery County Public Schools (MCPS), Montgomery College, the Washington Suburban Sanitary Commission (WSSC), and the Maryland-National Capital Park and Planning Commission (M-NCPPC). The total budget request for these "outside" agencies is \$74,281,760 which includes the entire bi-county area of WSSC.

The FY17 Recommended tax supported budget for Utilities Management, including both the General Fund NDA (\$25,930,493) and the other tax supported funds (\$3,836,445), is \$29,766,938, an increase of \$935,618 or approximately 3.2 percent above the FY16 Approved utilities budget. The FY17 Recommended Budget for non-tax supported utilities expenditures is \$5,268,645, an increase of \$21 from the FY16 Approved Budget.

Increased utilities expenditures result primarily from greater consumption due to new facilities or services, and in some cases, a more precise alignment of budgeted costs with actual prior year expenditures by utility type. Energy conservation and cost-saving measures (e.g., new building design, lighting technology, energy, and HVAC management systems) help offset increased utility consumption or unit costs.

Unleaded gasoline, diesel, and compressed natural gas fuels are purchased from various providers, and are budgeted in the Department of General Services, Division of Fleet Management Services; not the General Fund Utilities NDA. The Interagency Committee on Energy and Utilities Management (ICEUM) also monitors changes in energy costs in the current year and will recommend appropriate changes, if necessary, prior to final Council approval of the FY17 Budget.

The following is a description of utility service requirements for departments which receive tax or non-tax supported appropriations for utilities expenditures. The utilities expenditures for the non-tax supported operations are appropriated within their respective operating funds

but are described in the combined utilities presentation for reader convenience.

TAX SUPPORTED

Department of General Services

The Department of General Services is responsible for managing all utilities for general County operations including all County office buildings, police stations, libraries, health and human services facilities, correctional facilities, maintenance buildings, and warehouses.

Department of Transportation

The Department of Transportation manages all County streetlights, traffic signals, traffic count stations, and flashing school signs. The utilities expenditures for these devices are budgeted here as this Department designs, installs, controls, and maintains them. In addition, minimal utility costs for the Operations Center and Highway Maintenance Depots are budgeted in the Traffic Engineering component of the General Fund non-departmental account.

Division of Transit Services - Mass Transit

The Department of Transportation Mass Transit Facilities Fund supports all utilities associated with the Ride On transit centers and Park and Ride Lots.

Department of Recreation

The Department of Recreation funds all utility costs for its recreational facilities located throughout the County, such as swimming pools, community recreation centers, and senior citizen centers.

Urban Districts

Urban District utilities are supported by Urban District Funds, which are included in the operating budget for Regional Services Centers.

NON-TAX SUPPORTED

Fleet Management Services

The Department of General Services - Fleet Management Services utility expenditures are displayed in the Special Fund Agencies - Non-Tax Supported section, to reflect that Fleet Management Services expenditures are not appropriated directly but in the budgets of other departments.

The Department of General Services - Fleet Management Services Motor Pool Internal Service Fund supports all utilities associated with the vehicle maintenance garages in Rockville, Silver Spring, and Gaithersburg. Fuel for the County's fleet is also budgeted in that special fund, but these costs are not included in the utilities expenditures displayed in this section.

Parking Districts

The Parking Districts funds utility expenditures associated with the operation of all County-owned parking garages and parking lots.

Liquor Control

The Department of Liquor Control funds utility expenditures associated with the operation of the liquor warehouse, administrative offices, and the County-owned and contractor-operated retail liquor stores.

Department of Environmental Protection, Solid Waste Services

Solid Waste Services funds utility expenditures associated with the operation of the County's Solid Waste Management System. Utilities expenditures associated with the operation of the Oaks Sanitary Landfill maintenance building, the County's Recycling Center, the Resource Recovery Facility, and most of the Solid Waste Transfer Station are currently the responsibility of the operators. Only the site office and maintenance depot costs continue to be budgeted as an identifiable utilities expenditure in the Solid Waste Disposal Fund.

Other Agencies

Utilities for MCPS, Montgomery College, WSSC (bi-county), and M-NCPPC are displayed in the charts on the following pages. These are the amounts requested in the budgets of those agencies.

Linkage to County Result Areas

While this program area supports all eight of the County Result Areas, the following are emphasized:



An Effective and Efficient Transportation Network



Safe Streets and Secure Neighborhoods

Program Contacts

Contact Angela Dizelos of the Utilities at 240.777.6028 or Jed Millard of the Office of Management and Budget at 240.777.2769 for more information regarding this department's operating budget.

Budget Summary

| | Actual FY15 | Budget FY16 | Estimate FY16 | REC FY17 | %Chg Bud/Rec |
|--|-------------------|-------------------|-------------------|-------------------|-----------------|
| COUNTY GENERAL FUND | | | | | |
| EXPENDITURES | | | | | |
| Salaries and Wages | 0 | 0 | 0 | 0 | — |
| Employee Benefits | 0 | 0 | 0 | 0 | — |
| County General Fund Personnel Costs | 0 | 0 | 0 | 0 | — |
| Operating Expenses | 24,534,314 | 25,121,891 | 25,121,891 | 25,930,493 | 3.2 % |
| County General Fund Expenditures | 24,534,314 | 25,121,891 | 25,121,891 | 25,930,493 | 3.2 % |
| PERSONNEL | | | | | |
| Full-Time | 0 | 0 | 0 | 0 | — |
| Part-Time | 0 | 0 | 0 | 0 | — |
| FTEs | 0.00 | 0.00 | 0.00 | 0.00 | — |

FY17 Recommended Changes

| | Expenditures | FTEs |
|---|-------------------|-------------|
| COUNTY GENERAL FUND | | |
| FY16 ORIGINAL APPROPRIATION | 25,121,891 | 0.00 |
| Other Adjustments (with no service impacts) | | |
| Increase Cost: Unit costs and consumption changes | 966,402 | 0.00 |
| Increase Cost: New Buildings Opening in FY17 | 519,728 | 0.00 |
| Decrease Cost: ESCO Utility Savings | (4,972) | 0.00 |
| Decrease Cost: Clean Energy Purchase (Bill 9-14, Environmental Sustainability - Renewable Energy - County Purchase) | (102,803) | 0.00 |
| Decrease Cost: Savings from Contract Negotiations | (569,753) | 0.00 |
| FY17 RECOMMENDED | 25,930,493 | 0.00 |

Future Fiscal Impacts

| Title | CE RECOMMENDED (\$000s) | | | | | |
|---|-------------------------|---------------|---------------|---------------|---------------|---------------|
| | FY17 | FY18 | FY19 | FY20 | FY21 | FY22 |
| COUNTY GENERAL FUND | | | | | | |
| EXPENDITURES | | | | | | |
| FY17 Recommended | 25,930 | 25,930 | 25,930 | 25,930 | 25,930 | 25,930 |
| No inflation or compensation change is included in outyear projections. | | | | | | |
| ESCO Utility Savings | 0 | (5) | (10) | (16) | (21) | (21) |
| ESCO Utility Savings | 0 | (5) | (10) | (16) | (21) | (21) |
| Subtotal Expenditures | 25,930 | 25,925 | 25,920 | 25,914 | 25,909 | 25,909 |

| COUNTY UTILITIES EXPENDITURES | | | | | | | |
|--|-------------------|--------------------|--------------------|--------------------|---------------------|--------------------|----------------------|
| EXPENDITURES BY DEPARTMENT/AGENCY | | | | | | | |
| | ACTUAL FY13 | ACTUAL FY14 | ACTUAL FY15 | APPROVED FY16 | RECOMMENDED FY17 | CHANGE BUD/APPR | % CHANGE REC/APPR |
| COUNTY GOVERNMENT TAX SUPPORTED OPERATIONS | | | | | | | |
| NON-DEPARTMENTAL ACCOUNT | | | | | | | |
| Facilities | 13,487,035 | 15,372,911 | 15,740,149 | 16,128,223 | 16,936,825 | 808,602 | 5.0% |
| Traffic Signals and Streetlighting | 9,193,413 | 9,126,957 | 8,741,684 | 8,993,668 | 8,993,668 | 0 | 0.0% |
| GENERAL FUND NDA EXPENDITURES | 22,680,448 | 24,499,868 | 24,481,833 | 25,121,891 | 25,930,493 | 808,602 | 3.2% |
| OTHER TAX SUPPORTED OPERATIONS | | | | | | | |
| Transit Services | 73,694 | 291,007 | 180,519 | 276,200 | 276,200 | 0 | 0.0% |
| Recreation | 2,755,137 | 3,116,581 | 3,229,581 | 3,433,229 | 3,560,245 | 127,016 | 3.7% |
| SUBTOTAL | 2,828,831 | 3,407,588 | 3,410,100 | 3,709,429 | 3,836,445 | 127,016 | 3.4% |
| TOTAL TAX SUPPORTED | 25,509,279 | 27,907,456 | 27,891,933 | 28,831,320 | 29,766,938 | 935,618 | 3.2% |
| COUNTY GOVERNMENT NON-TAX SUPPORTED OPERATIONS | | | | | | | |
| Fleet Management Services | 1,069,366 | 1,350,157 | 628,198 | 1,630,392 | 1,630,392 | 0 | 0.0% |
| Parking Districts | 2,183,187 | 2,290,158 | 2,304,797 | 2,598,489 | 2,598,489 | 0 | 0.0% |
| Liquor Control | 852,105 | 899,856 | 748,158 | 865,810 | 865,810 | 0 | 0.0% |
| Solid Waste Services | 132,380 | 156,874 | 150,030 | 173,933 | 173,954 | 21 | 0.0% |
| TOTAL NON-TAX SUPPORTED | 4,237,038 | 4,697,045 | 3,831,183 | 5,268,624 | 5,268,645 | 21 | 0.0% |
| SUMMARY - COUNTY GOVERNMENT | | | | | | | |
| TOTAL TAX SUPPORTED | 25,509,279 | 27,907,456 | 27,891,933 | 28,831,320 | 29,766,938 | 935,618 | 3.2% |
| TOTAL NON-TAX SUPPORTED | 4,237,038 | 4,697,045 | 3,831,183 | 5,268,624 | 5,268,645 | 21 | 0.0% |
| TOTAL COUNTY GOVERNMENT | 29,746,317 | 32,604,501 | 31,723,116 | 34,099,944 | 35,035,583 | 935,639 | 2.7% |
| OUTSIDE AGENCIES TAX AND NON-TAX SUPPORTED OPERATIONS | | | | | | | |
| Montgomery County Public Schools | 35,779,753 | 39,444,381 | 36,492,289 | 37,706,974 | 38,716,618 | 1,009,644 | 2.7% |
| Montgomery College | 7,096,728 | 6,992,988 | 7,500,177 | 7,840,755 | 8,053,295 | 212,540 | 2.7% |
| Washington Suburban Sanitary Commission | 23,062,585 | 24,934,389 | 23,246,536 | 23,783,400 | 23,992,400 | 209,000 | 0.9% |
| M-NCPPC | 2,819,826 | 2,915,931 | 3,191,795 | 3,634,166 | 3,519,447 | (114,719) | -3.2% |
| TOTAL OTHER AGENCIES EXPENDITURES | 68,758,892 | 74,287,689 | 70,430,797 | 72,965,295 | 74,281,760 | 1,316,465 | 1.8% |
| TOTAL UTILITIES EXPENDITURES | 98,505,209 | 106,892,190 | 102,153,913 | 107,065,239 | 109,317,343 | 2,252,104 | 2.1% |

| COUNTY UTILITIES EXPENDITURES | | | | | | | |
|--|-------------------|--------------------|--------------------|--------------------|---------------------|----------------------|------------------------|
| EXPENDITURES BY ENERGY SOURCE | | | | | | | |
| | ACTUAL FY13 | ACTUAL FY14 | ACTUAL FY15 | APPROVED FY16 | RECOMMENDED FY17 | CHANGE BUDGET/REC | % CHANGE BUDGET/REC |
| COUNTY GOVERNMENT TAX SUPPORTED OPERATIONS | | | | | | | |
| NON-DEPARTMENTAL ACCOUNT | | | | | | | |
| Electricity | 19,560,557 | 20,756,510 | 20,546,268 | 21,446,120 | 21,915,452 | 469,332 | 2.2% |
| Water & Sewer | 1,528,193 | 1,630,635 | 1,778,860 | 1,650,938 | 1,815,096 | 164,158 | 9.9% |
| Fuel Oil | 83,127 | 132,406 | 183,403 | 205,905 | 205,905 | 0 | 0.0% |
| Natural Gas | 1,478,902 | 1,928,192 | 1,921,777 | 1,760,098 | 1,930,638 | 170,540 | 9.7% |
| Propane | 29,669 | 52,125 | 51,525 | 58,830 | 63,402 | 4,572 | 7.8% |
| GENERAL FUND NDA EXPENDITURES | 22,680,448 | 24,490,868 | 24,481,833 | 25,121,891 | 25,930,493 | 808,602 | 3.2% |
| OTHER TAX SUPPORTED OPERATIONS | | | | | | | |
| Electricity | 1,805,671 | 2,126,218 | 2,213,695 | 2,436,881 | 2,563,897 | 127,016 | 5.2% |
| Water & Sewer | 472,923 | 539,650 | 561,637 | 525,138 | 525,138 | 0 | 0.0% |
| Fuel Oil | 81,133 | 78,790 | 9,177 | 96521 | 96521 | 0 | 0.0% |
| Natural Gas | 437,411 | 590,644 | 559,755 | 591,314 | 591,314 | 0 | 0.0% |
| Propane | 31,693 | 72,286 | 65,836 | 59,575 | 59,575 | 0 | 0.0% |
| SUBTOTAL | 2,828,831 | 3,407,588 | 3,410,100 | 3,709,429 | 3,836,445 | 127,016 | 3.4% |
| TOTAL TAX SUPPORTED | 25,509,279 | 27,907,456 | 27,891,933 | 28,831,320 | 29,766,938 | 935,618 | 3.2% |
| NON-TAX SUPPORTED OPERATIONS | | | | | | | |
| Electricity | 3,762,544 | 4,179,447 | 3,391,727 | 4,603,914 | 4,603,935 | 21 | 0.0% |
| Water & Sewer | 99,596 | 107,825 | 104,179 | 211,590 | 211,590 | 0 | 0.0% |
| Fuel Oil | 0 | 2,918 | 161 | 4,000 | 4,000 | 0 | 0.0% |
| Natural Gas | 374,898 | 406,855 | 335,116 | 448,080 | 448,080 | 0 | 0.0% |
| Propane | 0 | 0 | 0 | 1,040 | 1,040 | 0 | 0.0% |
| TOTAL NON-TAX SUPPORTED | 4,237,038 | 4,697,045 | 3,831,183 | 5,268,624 | 5,268,645 | 21 | 0.0% |
| SUMMARY - COUNTY GOVERNMENT | | | | | | | |
| Electricity | 25,128,772 | 27,062,175 | 26,151,690 | 28,486,915 | 29,083,284 | 596,369 | 2.1% |
| Water & Sewer | 2,100,712 | 2,278,110 | 2,444,676 | 2,387,666 | 2,551,824 | 164,158 | 6.9% |
| Fuel Oil | 164,260 | 214,114 | 192,741 | 306,426 | 306,426 | 0 | 0.0% |
| Natural Gas | 2,291,211 | 2,925,691 | 2,816,648 | 2,799,492 | 2,970,032 | 170,540 | 6.1% |
| Propane | 61,362 | 124,411 | 117,361 | 119,445 | 124,017 | 4,572 | 3.8% |
| TOTAL COUNTY GOVERNMENT | 29,746,317 | 32,604,501 | 31,723,116 | 34,099,944 | 35,035,583 | 935,639 | 2.7% |
| OUTSIDE AGENCIES TAX AND NON-TAX SUPPORTED OPERATIONS | | | | | | | |
| Electricity | 56,244,835 | 62,598,187 | 57,271,461 | 58,448,742 | 59,778,256 | 1,329,514 | 2.3% |
| Water & Sewer | 4,496,191 | 3,567,374 | 4,745,064 | 5,335,165 | 5,834,237 | 499,072 | 9.4% |
| Fuel Oil | 289,160 | 231,536 | 256,028 | 262,734 | 115,142 | (147,592) | -56.2% |
| Natural Gas | 7,540,076 | 7,674,647 | 7,900,336 | 8,670,368 | 8,286,049 | (384,319) | -4.4% |
| Propane | 188,630 | 215,945 | 257,908 | 248,286 | 268,076 | 19,790 | 8.0% |
| SUBTOTAL | 68,758,892 | 74,287,689 | 70,430,797 | 72,965,295 | 74,281,760 | 1,316,465 | 1.8% |
| TOTAL UTILITIES EXPENDITURES | | | | | | | |
| Electricity | 81,373,607 | 89,660,362 | 83,423,151 | 86,935,657 | 88,861,540 | 1,925,883 | 2.2% |
| Water & Sewer | 6,596,903 | 5,845,484 | 7,189,740 | 7,722,831 | 8,386,061 | 663,230 | 8.6% |
| Fuel Oil | 453,420 | 445,650 | 448,769 | 569,160 | 421,568 | (147,592) | -25.9% |
| Natural Gas | 9,831,287 | 10,600,338 | 10,716,984 | 11,469,860 | 11,256,081 | (213,779) | -1.9% |
| Propane | 249,992 | 340,356 | 375,269 | 367,731 | 392,093 | 24,362 | 6.6% |
| TOTAL UTILITIES EXPENDITURES | 98,505,209 | 106,892,190 | 102,153,913 | 107,065,239 | 109,317,343 | 2,252,104 | 2.1% |

67. This resolution appropriates \$25,121,891 to the Utilities Non-Departmental Account (NDA) for the cost of electricity, natural gas, and other energy-related use and operating costs. When the County executes an Energy Services Agreement for capital renovations to energy related equipment to produce long-term utility savings in County facilities, the County Executive may transfer up to \$5 million from this Account to the Debt Service Fund to pay principal and interest related to the energy-related equipment. The following conditions apply to the use of this transfer authority:
- (a) The program must not require any new FY 2016 tax-supported appropriation or future tax-supported funds.
 - (b) The Department of Finance evaluates whether annual savings provided under the Energy Services Agreement should be guaranteed by the Energy Services Company that the County contracts with and the savings and any additional revenue that result from the Energy Services Agreement are equal to or greater than the debt service costs related to the capital renovations over the life of the project financing.
 - (c) The Executive must notify the Council in writing within 30 days after each transfer.
68. This resolution appropriates \$683,790 for inflation adjustments for tax-supported contractors with the Department of Health and Human Services (DHHS) and to eligible contractors with the Department of Housing and Community Affairs that are providing Special Needs Housing programs. Any inflation adjustment awarded under this paragraph must not exceed 2% of the total contract price. Any contract funded by a non-County grant is not eligible for an inflation adjustment under this paragraph. Each contractor must meet the following eligibility criteria.
- (a) Non-profit service provider, public entity, or
 - (b) Contract that provides meals on wheels, court appointed special advocates, direct mental health services to seniors, and homeless outreach.
 - (c) The increase is to the General Fund value of the contract (Grant Fund value not included).
 - (d) The contract must not be in its first year, unless a new contract has been executed as part of a DHHS administrative review, or have an automatic inflation adjustment built into the contract.
 - (e) This increase does not apply to contracts for Montgomery Cares (except administration) or Care for Kids (except for the services associated with the Latino Health Initiative) as their budgets have been adjusted for expected FY 2016 levels of service.
 - (f) This increase does not apply to contracts that are a specific match to a grant.
 - (g) This increase does not apply to contracts covered by the DD Supplement. This resolution appropriates \$1,116,108 to increase the DD Supplement.
 - (h) This increase does not apply to contracts covered by the Residential Treatment Provider Supplement. This resolution appropriates \$20,950 to increase the Residential Treatment Provider Supplement.

| Planned Energy Conservation Measures FY17 | | | | | |
|--|-----------------------------|------------|---------------|------------------------------------|---|
| This table shows information on resource conservation measures planned to be implemented in FY17 (July 1, 2016 through June 30, 2017) | | | | | |
| Energy Conservation Measures/ ESCO Projects- (Note: The majority of savings from ESCO projects support principal and interest payments and should not be deducted from NDA) | | | | | |
| Project | Projected Completion | kWh | Therms | Project Cost/ Incentive | Energy Savings (see note on ESCO projects) |
| 1301 Piccard/ DHHS- Lighting, HVAC and Controls Upgrade (Ameresco - ESCO) | FY17 | TBD. | TBD | \$3,533,466 | \$187,309/ \$4,385,726 (After 18 years) |
| Pre-Release Center- Lighting, VFD, Boiler, CHP (ESG - ESCO) | FY17 | 877,365 | 41,349 | \$2,513,304/ \$TBD | \$183,317 |
| Longwood CC- Lighting, Controls Upgrade, Boiler (ESG - ESCO) | FY17 | 76,688 | 2805 | \$408,476 | \$12,945 |
| Kensington Library- Lighting, Controls Upgrade, Boiler (ESG - ESCP) | FY17 | 53,972 | 760 | \$338,060 | \$7,489 |
| Twinbrook Library- Lighting, HVAC Upgrade, Building Envelope (ESG - ESCO) | FY17 | 34,821 | 759 | \$92,416 | \$4,901 |
| 8818 Georgia Avenue- Lighting, VFD (ESG - ESCO) | FY17 | 169,160 | 645 | \$395,592 | \$25,117 |
| Up County Gov. Center (Ameresco- ESCO) | FY17 | TBD | TBD | TBD | TBD |
| Olney Swim Center- (Ameresco - ESCO) | FY17 | TBD | TBD | TBD | TBD |
| Aspen Hill Library- (Ameresco - ESCO) | FY17 | TBD | TBD | TBD | TBD |
| Bethesda Library- (Ameresco - ESCO) | FY17 | TBD | TBD | TBD | TBD |
| Davis Library- Lighting, Controls Upgrade- (Ameresco - ESCO) | FY17 | TBD | TBD | TBD | TBD |
| Quince Orchard Library- (Ameresco - ESCO) | FY17 | TBD | TBD | TBD | TBD |
| White Oak Library- (Ameresco - ESCO) | FY17 | TBD | TBD | TBD | TBD |
| Sources: April 2016 Building CIP Report AND "MCG-ESG-Final IGA Costs Savings 113015" | | | | | |
| Note: | | | | | |
| - Most ESCO projects are still in scoping, savings numbers will be determined as part of the Investment Grade Audit. | | | | | |
| | | | | | |

Current Energy Conservation Measures FY16

This table shows information on resource conservation measures planned to be implemented in FY16 (July 1, 2015 through June 30, 2016)

Energy Conservation Measures- Capital Improvement Projects

| Project | Projected Completion | kWh (Savings) | Therms | Project Cost/ Incentive | Energy Savings |
|--|-----------------------------|----------------------|---------------|--------------------------------|-----------------------|
| AFI- Lighting (Energy Conservation CIP) | FY16 | TBD | N/A | TBD | TBD |
| Aspen Hill Library- Lighting (Grant) | FY16 | 11,033 | N/A | \$22,329/ \$3,180 | \$1,353 |
| Brookeville Maintenance Facility- Lighting (Energy Conservation CIP) | FY16 | TBD | N/A | TBD | TBD |
| EOB 11 th Floor- Lighting (Energy Conservation CIP) | FY16 | TBD | N/A | TBD | TBD |
| Damascus Library / Senior Center Pole Lighting (Grant) | FY16 | 25,391 | N/A | \$25,988/\$4,000 | \$3,908 |
| Detention Center- Seven Locks- Lighting (Grant) | FY16 | 100,447 | N/A | \$76,654/ \$13,400 | \$15,461 |
| Germantown Swim Center- Lighting (Energy Conservation CIP) | FY16 | 175,266 | N/A | \$49,650 | \$21,488 |
| Little Falls Library- Controls Upgrade (Energy Conservation CIP) | FY16 | 44,861 | N/A | \$90,000 | \$5,500 |
| Potomac Community Center- Lighting (Grant) | FY16 | 47,858 | N/A | \$62,778/ \$8,115 | \$5,867 |
| Potomac Library- Lighting (Grant) | FY16 | 20,811 | N/A | \$19,426/ \$4,500 | \$2,551 |
| Public Safety Headquarters- Lighting (Energy Conservation CIP) | FY16 | 17,332 | N/A | TBD | \$2,124 |
| Rothgeb Workers Center- Lighting (Grant) | FY16 | 10,278 | N/A | \$27,337/ \$5,350 | \$1,260 |
| Strathmore Concert Hall- Lighting (Grant) | FY16 | TBD | N/A | TBD | TBD |

Energy Conservation Measures/ ESCO Projects- (Note: The majority of savings from ESCO projects support principal and interest payments and should not be deducted from NDA)

Previous Energy Conservation Measures FY15

This table shows information on resource conservation measures planned to be implemented in FY15 (July 1, 2014 through June 30, 2015)

Energy Conservation Measures- Capital Improvement Projects

| Project | Projected Completion | kWh | Therms e | Project Cost | Energy Savings |
|--|----------------------|--------|----------|--------------|----------------|
| Fire and Rescue Service Center FS 35 & FS 21 | FY15 | 39,092 | N/A | \$56,790 | \$4,792 |
| Potomac Library- Controls Upgrade | FY15 | 34,375 | N/A | \$90,000 | \$4,214 |

Energy Conservation Measures/ ESCO Projects- (Note: The majority of savings from ESCO projects support principal and interest payments and should not be deducted from NDA)

| Project | Projected Completion | kWh | Therms | Project Cost | Energy Savings (see note on ESCO projects) |
|---|----------------------|-----|--------|--------------|---|
| 401 Hungerford- Lighting, HVAC and Controls Upgrade (JCI) | FY15 | | | \$4,100,000 | \$159,000 |

Energy Conservation Measures/ ESCO Projects- (Note: The majority of savings from ESCO projects support principal and interest payments and should not be deducted from NDA)

MCPS UTILITIES - FY13-17

AGENCY
MCPS

JUSTIFICATION/DESCRIPTION:

Cost+Use based on
Mar '16' budget forecast

| UTILITY TYPE | Actual FY13 | Actual FY14 | Actual FY15 | Budgeted FY16 | Projected FY16 - | Estimate FY17 |
|------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| ELECTRICITY | | | | | | |
| COST | \$26,016,973 | \$30,298,469 | \$26,365,677 | \$26,525,752 | \$26,727,635 | \$27,399,801 |
| KWH's (000's) | 219,894,411 | 234,747,040 | 235,208,724 | 232,121,867 | 230,763,536 | 234,795,407 |
| COST/KWH | 0.124 | 0.135 | 0.112 | 0.125 | 0.119 | 0.121 |
| WATER AND SEWER | | | | | | |
| COST | \$3,603,277 | \$2,822,355 | \$3,864,984 | \$4,268,644 | \$4,085,989 | \$4,757,650 |
| GALLONS (000's) | 404,310 | 383,404 | 410,587 | 405,962 | 395,431 | 409,876 |
| COST/GALLON | 7.75 | 7.36 | 9.41 | 9.71 | 10.33 | 10.90 |
| FUEL OIL #2 | | | | | | |
| COST | \$53,870 | \$149,094 | \$72,000 | \$170,784 | \$30,623 | \$87,742 |
| GALLONS | 16,823 | 45,921 | 31,179 | 31,179 | 30,010 | 31,179 |
| COST/GALLON | 3.33 | 3.20 | 2.31 | 2.75 | 1.04 | 2.76 |
| NATURAL GAS | | | | | | |
| COST | \$6,050,604 | \$6,114,326 | \$6,137,672 | \$6,664,508 | \$5,390,435 | \$6,397,819 |
| THERMS (000's) | 5,755,217 | 6,269,869 | 6,439,621 | 6,196,707 | 5,052,089 | 6,223,352 |
| COST/THERM | 1.03 | 0.98 | 0.95 | 1.05 | 0.98 | 1.02 |
| PROPANE | | | | | | |
| COST | \$55,998 | \$60,096 | \$51,956 | \$77,286 | \$32,811 | \$73,806 |
| GALLONS | 36,688 | 39,771 | 37,963 | 36,803 | 33,199 | 36,803 |
| COST/GALLON | 1.51 | 2.42 | 1.37 | 2.00 | 0.99 | 2.00 |
| TOTAL COSTS | \$35,779,722 | \$39,444,340 | \$36,492,289 | \$37,706,974 | \$36,267,493 | \$38,716,619 |

mcps

Growth and Rate Analysis
FY16 to FY15 Comparison

| | Electric | No. 2 Oil | Natural Gas | Propane | Water & Sewer | Subtotal | Total |
|---|---------------------|-------------------|--------------------|------------------|--------------------|-----------|---------------------|
| FY 16 Budgeted | \$26,525,752 | \$170,784 | \$6,664,508 | \$77,286 | \$4,268,644 | | \$37,706,974 |
| Growth/Consumption \$ Rate/Other | \$730,555 | \$0 | \$90,576 | \$0 | \$100,576 | \$921,707 | \$921,707 |
| | \$143,494 | (\$83,042) | (\$357,265) | (\$3,680) | \$388,430 | \$87,937 | \$87,937 |
| | | | | | | | |
| | | | | | | | |
| Total Change \$ | \$874,049 | (\$83,042) | (\$266,689) | (\$3,680) | \$489,006 | | \$1,009,645 |
| | | | | | | | |
| FY 17 Requested | \$27,399,801 | \$87,742 | \$6,397,819 | \$73,606 | \$4,757,650 | | \$38,716,619 |
| Percent Increase/Decrease | 3% | -49% | -4% | -5% | 11% | | 3% |

Growth due to increase of square feet from REV/EX and addition projects.

MCS

Montgomery College
Office of Central Facilities
FY 2017
Utility Projection Report
December 18, 2015

| | ACTUAL FY 2007 | ACTUAL FY 2008 | ACTUAL FY 2009 | ACTUAL FY2010 (9) | ACTUAL FY2011 | ACTUAL FY2012 | ACTUAL FY2013 | ACTUAL FY2014 | ACTUAL FY2015 (1) | PROJECTED FY2016 (1) | CONS.CHNG. FY16-17 | UNIT.CHNG. FY16-17 | PROJECTED FY2017 (1) |
|---|-------------------|-------------------|-------------------|----------------------|------------------|------------------|------------------|------------------|----------------------|-------------------------|-----------------------|-----------------------|-------------------------|
| ELECTRICITY | | | | | | | | | | | | | |
| kWh | 33,089,460 | 33,540,204 | 34,761,200 | 36,078,995 | 38,465,527 | 40,088,577 | 41,050,962 | 43,235,645 | 45,311,646 | 45,839,000 | 1,818,446 | 45,839,000 | 47,657,446 |
| Cost (\$) | 4,069,169 | 4,332,987 | 4,963,699 | 5,676,658 | 6,263,080 | 6,254,507 | 5,362,803 | 5,723,494 | 6,043,713 | 5,999,200 | 237,990 | 262,410 | 6,510,010 |
| UNIT(\$/kWh) | 0.1230 | 0.1292 | 0.1428 | 0.1573 | 0.1628 | 0.1560 | 0.1306 | 0.1324 | 0.1334 | 0.1309 | 0.1309 | 0.0057 | 0.1366 |
| N.GAS(Firm) | | | | | | | | | | | | | |
| Therms(thm) | 161,870 | 176,404 | 257,069 | 232,517 | 349,253 | 369,409 | 438,338 | 540,878 | 623,522 | 561,000 | 476,071 | 561,000 | 1,037,071 |
| Cost (\$) | 251,023 | 270,682 | 367,550 | 338,415 | 480,084 | 427,656 | 427,246 | 518,208 | 634,288 | 583,440 | 495,114 | (67320.17) | 954,105 |
| Unit (\$/therm) | 1.55 | 1.53 | 1.43 | 1.46 | 1.37 | 1.16 | 0.97 | 0.96 | 1.02 | 1.04 | 1.04 | (0.12) | 0.92 |
| N.GAS(Trate) | | | | | | | | | | | | | |
| Therms(thm) | 435,747 | 411,052 | 442,200 | 425,119 | 393,165 | 384,121 | 371,190 | 358,797 | 406,849 | 414,000 | (414,000) | 414,000 | 0 |
| Cost (\$) | 618,717 | 579,337 | 564,648 | 537,805 | 523,477 | 362,790 | 312,933 | 278,361 | 348,925 | 356,000 | (356,040) | 0 | 0 |
| Unit (\$/therm) | 1.42 | 1.41 | 1.28 | 1.27 | 1.33 | 0.94 | 0.84 | 0.78 | 0.86 | 0.86 | 0.86 | (0.86) | 0 |
| WATER | | | | | | | | | | | | | |
| kilogallons | 28,000 | 29,164 | 29,795 | 29,184 | 32,889 | 39,546 | 34,530 | 30,903 | 31,565 | 42,478 | (9,378) | 42,478 | 33,100 |
| Cost (\$) | 87,252 | 98,299 | 119,029 | 136,169 | 185,050 | 262,548 | 242,172 | 226,908 | 253,787 | 410,355 | (90,595) | (6390.50) | 314,780 |
| Unit (\$/kgal) | 3.12 | 3.37 | 3.99 | 4.67 | 5.63 | 6.64 | 7.01 | 7.34 | 8.04 | 9.66 | 9.66 | (0.15) | 9.51 |
| SEWER | | | | | | | | | | | | | |
| kilogallons | 21,306 | 24,075 | 23,523 | 23,024 | 26,184 | 29,665 | 25,649 | 22,133 | 22,488 | 31,701 | (6,701) | 31,701 | 25,000 |
| Cost (\$) | 101,894 | 122,585 | 128,733 | 132,631 | 166,029 | 200,955 | 198,861 | 201,888 | 208,906 | 303,366 | (62,250) | 31,181 | 263,830 |
| Unit (\$/kgal) | 4.78 | 5.09 | 5.47 | 5.76 | 6.34 | 6.77 | 7.75 | 9.12 | 9.29 | 9.57 | 9.29 | 1 | 10.55 |
| NO. 2 FUEL OIL | | | | | | | | | | | | | |
| Gallons(gal) | 29,952 | 24,000 | 42,100 | 29,048 | 28,393 | 30,054 | 9,503 | 9,563 | 0 | 3,500 | (3,500) | 3,500 | 0 |
| Cost (\$) | 63,099 | 74,775 | 84,345 | 76,477 | 84,321 | 102,671 | 30,487 | 33,850 | 0 | 11,000 | (11,550) | (11,000) | 0 |
| Unit (\$/gal) | 2.11 | 3.12 | 2.00 | 2.63 | 2.97 | 3.42 | 3.21 | 3.54 | 0.00 | 3.14 | 3.30 | (3.14) | 0 |
| PROPANE | | | | | | | | | | | | | |
| Gallons(gal) | 2,569 | 2,687 | 2,575 | 2,249 | 2,817 | 1,964 | 2,452 | 2,926 | 3,495 | 3,500 | 5 | 3,500 | 3,500 |
| Cost (\$) | 6,235 | 9,504 | 8,510 | 6,854 | 9,527 | 7,086 | 7,341 | 10,279 | 10,558 | 10,570 | 15 | 0 | 10,570 |
| Unit (\$/gal) | 2.43 | 3.54 | 3.30 | 3.05 | 3.38 | 3.61 | 2.99 | 3.51 | 3.02 | 3.02 | 3.02 | 0.00 | 3.02 |
| TOTAL COST | 5,197,389 | 5,488,169 | 6,236,514 | 6,905,009 | 7,711,568 | 7,618,213 | 6,581,843 | 6,992,988 | 7,500,177 | 7,755,156 | 224,233 | 208,880 | 8,053,295 |
| Wind Power | (3) | (3) | (4) | (5) | (6) | (7) | (8) | (10) | (11) | (12) | N/A | N/A | (13) |
| Total Cost | 5,197,389 | 5,488,169 | 6,236,514 | 6,905,009 | 7,711,568 | 7,618,213 | 6,581,843 | 6,992,988 | 7,500,177 | 7,755,156 | 224,233 | 208,880 | 8,053,295 |
| Approved Bud | 5,710,675 | 5,937,126 | 6,753,482 | 7,514,720 | 8,321,690 | 8,467,369 | 6,940,471 | 7,139,046 | 7,613,648 | 7,840,755 | | | 8,053,295 |
| Suplus/(Def) | 513,286 | 448,957 | 516,968 | 609,711 | 610,122 | 849,156 | 358,628 | 146,058 | 113,471 | 85,599 | | | 0 |
| NOTES: | | | | | | | | | | | | | |
| 1. Projections based upon 12/18/2015 Utility Rates. | | | | | | | | | | | | | |
| 2. FY2005 & 2006 Electrical includes \$19,269 for 5% Wind Power Purchase @ 1.498 cents/kWh | | | | | | | | | | | | | |
| 3. FY2007 & FY2008 Electrical includes \$46,974 for 10% Wind Power Purchase @ 1.498 cents/kWh | | | | | | | | | | | | | |
| 4. FY2009 Electrical includes \$32,055 for 71 % Wind Power Purchase @ 0.13 cents/kWh | | | | | | | | | | | | | |
| 5. FY2010 Electrical includes \$48,159.00 for 75% Wind Power Purchase @ 0.18 cents/kWh | | | | | | | | | | | | | |
| 6. FY2011 Electrical includes \$8,188 for 20% Wind Power Purchase @ 0.106 cents/kWh | | | | | | | | | | | | | |
| 7. FY2012 Electrical includes \$9,734 for 20% Wind Power Purchase @ 0.117 cents/kWh | | | | | | | | | | | | | |
| 8. FY2013 Electrical includes \$7,802.00, 20% Wind Power Purchase @ 0.094 cents/kWh. | | | | | | | | | | | | | |
| 9. FY2010 Does Not Include \$87,500 PEPCO Generation Credit. Surplus actually \$695,869. | | | | | | | | | | | | | |
| 10. FY2014 Electrical includes \$9,545.00 for 20% Wind Power Purchase @ \$0.115 cents/kWh | | | | | | | | | | | | | |
| 11. FY2015 Electrical includes \$55,350 for 100% Wind Power Purchase @ \$0.123 cents/kWh | | | | | | | | | | | | | |
| 12. FY2016 Electrical includes \$60,000 for 131% Wind Power Purchase @ 0.067 cents/kWh | | | | | | | | | | | | | |
| 13. FY2017 Electrical includes \$65,000 for 136% Wind Power Purchase @ 0.071 cents/kWh | | | | | | | | | | | | | |

Montgomery College

UTILITY RATES
December 18, 2015
FY 2016 - FY 2017

| | Actual | Actual | Budget | Projected | Projected |
|--------------------------|---|--|--|---|---|
| <u>Utilities</u> | <u>Fy14</u> | <u>Fy15</u> | set 12/4/14 <u>FY16</u> | <u>FY16</u> | <u>FY17</u> |
| Electricity | \$0.1324 per kWh | \$0.1334 per kWh | \$0.1333 per kWh | \$0.1309 per kWh | \$0.1366 per kWh |
| #2 Fuel Oil | \$3.54 per gallon | no usage | \$3.30 per gallon | no usage | no usage |
| Natural Gas | \$0.88 per therm | \$0.95 per therm | \$1.00 per therm | \$0.96 per therm | \$0.92 per therm |
| Propane | \$3.51 per gallon | \$3.02 per gallon | \$3.00 per gallon | \$3.00 per gallon | \$3.02 per gallon |
| Water & Sewer | 10.1% increase over Actual Fy13 \$8.06/kgal | 5.9% increase over Actual Fy14 \$8.56/kgal | 26.7% increase over Actual Fy14 \$10.24/kgal | 11.1% increase over Actual Fy15 \$9.51/kgal | 17.9% increase over Actual Fy15 \$10.09/kgal |

Notes:

1. All Utilities: Unit cost- Agency unit cost should be equal to or lower than unit cost in this table.
2. All Utilities except w/s: Unit Cost includes energy tax rates set by the Montgomery County Council on 5/22/14 and left unchanged on 5/13/15
3. 2.5% increase (in electricity) to cover charges such as:
 - a. PEPCO Grid Resiliency Charge (GRC)- Began 1/14/14; increased 30.8% for MGT accounts 6/15/15
 - b. PEPCO- Distribution Rate increase of 2.2%, approved 7/2/14; nothing currently pending
 - c. PEPCO- Empower- increased 54.6/173.8/46.2% GS/MGT accounts effective February 2014/2015/2016
 - d. PEPCO- Universal Service Charge (USC) decreased about 14% effective February 2014; not changed since
 - e. PEPCO- monthly changes in Bill Stabilization Adjustment
 - f. Washington Gas- STRIDE (System Improvement fee) 3/21/14; new rates effective 10/26/15
 - g. Washington Gas- Empower- new rates effective 10/26/15
4. 136% renewable energy certificates (REC) from wind energy for FY17
5. Electricity- Supply Contract rate decrease effective 2/2017 and thru FY19
6. Natural Gas- Supply Contract decrease effective 6/2016 thru 5/31/18
7. Water/Sewer- 6.4% increase in FY17 for WSSC and 3.0/12.0% for City of Rockville
8. City of Rockville Storm Water Management Utility Fee is not included.
9. Oil/Propane- Based upon commodity futures

| 2014 | | | | | | | | | | |
|--|---------------|---------------|---------------|---------------|--------------|-------------------|----------------------|----------------------|---------------|---------------|
| | | Budget kWh | Actual kWh | Budget G&T | Budget Dist | Budget Energy Tax | Facility Adjustments | Budget TOTAL | Actual TOTAL | |
| ELECTRICITY | | | | | | | | | | |
| | WTP | 100,207,540 | 100,085,012 | \$ 7,870,300 | \$ 1,142,366 | \$ 1,810,416 | \$ - | \$ 10,823,083 | \$ 11,341,586 | |
| | WWTP | 77,793,472 | 69,800,395 | \$ 5,907,228 | \$ 1,187,711 | \$ 811,717 | \$ (192,000) | \$ 7,714,655 | \$ 7,531,821 | |
| | WWPS | 15,704,518 | 13,709,219 | \$ 1,233,151 | \$ 179,032 | \$ 155,506 | | \$ 1,567,688 | \$ 1,711,190 | |
| | WPS | 15,500,000 | 10,411,036 | \$ 1,217,370 | \$ 176,700 | \$ 180,470 | | \$ 1,574,540 | \$ 1,348,296 | |
| | FO | 16,000,000 | 16,794,827 | \$ 1,256,420 | \$ 182,400 | \$ 225,562 | | \$ 1,664,382 | \$ 2,192,037 | |
| | TANK | 850,000 | 830,690 | \$ 66,725 | \$ 9,690 | \$ 11,983 | | \$ 88,398 | \$ 120,233 | |
| | DAM | 250,000 | 213,274 | \$ 19,625 | \$ 2,850 | \$ 3,524 | | \$ 25,999 | \$ 31,778 | |
| | VALVE | 125,000 | 202,055 | \$ 9,813 | \$ 1,425 | \$ 1,762 | | \$ 13,000 | \$ 32,153 | |
| Electricity SUBTOTALS | | 226,430,530 | 212,046,508 | \$ 17,580,632 | \$ 2,882,173 | \$ 3,200,941 | \$ (192,000) | \$ 23,471,746 | \$ 24,309,093 | |
| Electricity TOTALS Electricity Unit Price | | | | | | | | Adjustments: | \$ - | \$ - |
| | | | | | | | | Total Cost: \$/kWh | \$ 23,471,746 | \$ 24,309,093 |
| OTHER FUEL | | | | | | | | | | |
| | | Budget Therms | Actual Therms | Budget Supply | Budget Dist | Budget Energy Tax | | Budget TOTAL | Actual TOTAL | |
| Natural Gas | | | | | | | | | | |
| | Interruptible | 228,399 | 18 | \$ 100,267 | \$ 19,048 | \$ 13,635 | | \$ 132,951 | \$ 165.38 | |
| | Firm (Small) | 316,744 | 343,937 | \$ 182,128 | \$ 115,928 | \$ 38,413 | | \$ 336,469 | \$ 323,603.97 | |
| Natural Gas TOTALS Natural Gas Unit Price | | 545,143 | 343,955 | \$ 282,395 | \$ 134,977 | | | \$ 469,420 | \$ 323,769 | |
| | | | | | | | | Adjustments: | \$ - | \$ - |
| | | 545,143 | 343,955 | 282,395 | 134,977 | | | Total Cost: \$/Therm | \$ 469,420 | \$ 323,769 |
| | | | | | | | | \$ 0.8611 | \$ 0.9413 | |
| | | Budget Gal | Actual Gal | Budget Rate | Actual Rate | | | Budget TOTAL | Actual TOTAL | |
| Other Fuels | | | | | | | | | | |
| | Fuel Oil #2 | 22,000 | 12,000 | \$ 4.000 | \$ 3.583 | | | \$ 88,000 | \$ 43,000 | |
| | Diesel Fuel | 48,000 | 15,000 | \$ 4.500 | \$ 4.000 | | | \$ 216,000 | \$ 60,000 | |
| | Propane | 10,000 | 3,000 | \$ 3.000 | \$ 3.000 | | | \$ 30,000 | \$ 9,000 | |
| | | | | | | | | \$ 334,000 | \$ 112,000 | |
| | | | | | | | | Adjustments: | \$ - | \$ - |
| Other Fuel TOTALS | | 80,000 | 30,000 | | | | Total Cost: \$/gal | \$ 334,000 | \$ 112,000 | |
| Other Fuel Unit Price | | | | | | | | \$ 4.18 | \$ 4 | |
| GRAND TOTAL | | | | | | | | \$ 24,275,166 | \$ 24,744,863 | |

WSC

| | | 2015 | | | | | | | |
|------------------------|---------------|---------------|---------------|---------------|--------------|-------------------|----------------------|---------------|---------------|
| | | Budget kWh | Actual kWh | Budget G&T | Budget Dist | Budget Energy Tax | Facility Adjustments | Budget TOTAL | Actual TOTAL |
| ELECTRICITY | | | | | | | | | |
| | WTP | 101,886,100 | 97,674,355 | \$ 7,274,668 | \$ 1,528,292 | \$ 1,778,240 | \$ - | \$ 10,581,199 | \$ 10,878,798 |
| | WWTP | 76,244,850 | 62,683,717 | \$ 5,422,149 | \$ 1,298,199 | \$ 773,819 | \$ - | \$ 7,494,167 | \$ 6,879,048 |
| | WWPS | 15,699,672 | 12,973,626 | \$ 1,131,868 | \$ 235,495 | \$ 150,671 | | \$ 1,518,034 | \$ 1,614,953 |
| | WPS | 15,500,000 | 10,286,126 | \$ 1,106,700 | \$ 232,500 | \$ 175,712 | | \$ 1,514,912 | \$ 1,300,421 |
| | FO | 15,500,000 | 15,912,385 | \$ 1,115,500 | \$ 232,500 | \$ 211,490 | | \$ 1,559,490 | \$ 1,820,082 |
| | TANK | 850,000 | 2,138,691 | \$ 62,050 | \$ 12,750 | \$ 11,598 | | \$ 86,398 | \$ 185,804 |
| | DAM | 5,000 | 218,987 | \$ 365 | \$ 75 | \$ 68 | | \$ 508 | \$ 40,966 |
| | VALVE | 6,300 | 123,132 | \$ 460 | \$ 95 | \$ 86 | | \$ 640 | \$ 24,748 |
| Electricity SUBTOTALS | | 225,691,922 | 202,011,020 | \$ 16,113,759 | \$ 3,539,905 | \$ 3,101,684 | \$ - | \$ 22,755,348 | \$ 22,744,819 |
| | | Adjustments: | | | | | | \$ - | \$ - |
| Electricity TOTALS | | Total Cost: | | | | | | \$ 22,755,348 | \$ 22,744,819 |
| Electricity Unit Price | | \$/kWh | | | | | | \$ 0.1008 | \$ 0.1126 |
| OTHER FUEL | | | | | | | | | |
| Natural Gas | | Budget Therms | Actual Therms | Budget Supply | Budget Dist | Budget Energy Tax | | Budget TOTAL | Actual TOTAL |
| | Interruptible | - | - | \$ - | \$ - | \$ - | | \$ - | \$ 357.12 |
| | Firm (Small) | 319,716 | 362,419 | \$ 223,801 | \$ 63,943 | \$ 9,444 | | \$ 297,188 | \$ 356,377.34 |
| | | 319,716 | 362,419 | \$ 223,801 | \$ 63,943 | | | \$ 297,188 | \$ 356,734 |
| | | Adjustments: | | | | | | \$ - | \$ - |
| Natural Gas TOTALS | | 319,716 | 362,419 | 223,801 | 63,943 | | Total Cost: | \$ 297,188 | \$ 356,734 |
| Natural Gas Unit Price | | \$/Therm | | | | | | \$ 0.9295 | \$ 0.9843 |
| | | | | | | | | | |
| Other Fuels | | Budget Gal | Actual Gal | Budget Rate | Actual Rate | | | Budget TOTAL | Actual TOTAL |
| | Fuel Oil #2 | 20,000 | 13,500 | \$ 4.000 | \$ 2.422 | | | \$ 80,000 | \$ 32,700 |
| | Diesel Fuel | 22,000 | 8,112 | \$ 4.500 | \$ 3.267 | | | \$ 99,000 | \$ 26,500 |
| | Propane | 5,000 | 9,500 | \$ 3.000 | \$ 1.737 | | | \$ 15,000 | \$ 16,500 |
| | | | | | | | | \$ 194,000 | \$ 75,700 |
| | | Adjustments: | | | | | | \$ - | \$ - |
| Other Fuel TOTALS | | 47,000 | 31,112 | | | | Total Cost: | \$ 194,000 | \$ 75,700 |
| Other Fuel Unit Price | | \$/gal | | | | | | \$ 4.13 | \$ 2 |
| GRAND TOTAL | | | | | | | | \$ 23,246,537 | \$ 23,177,254 |

WSSC

| | | 2016 | | | | | | | |
|------------------------|---------------|---------------|---------------|---------------|--------------|-------------------|----------------------|---------------|---------------|
| | | Budget kWh | Actual kWh | Budget G&T | Budget Dist | Budget Energy Tax | Facility Adjustments | Budget TOTAL | Actual TOTAL |
| ELECTRICITY | | | | | | | | | |
| | WTP | 101,548,840 | 19,324,984 | \$ 7,482,119 | \$ 1,523,233 | \$ 1,764,957 | \$ - | \$ 10,770,309 | \$ 7,216,407 |
| | WWTP | 71,470,285 | 10,491,801 | \$ 5,516,212 | \$ 1,212,696 | \$ 799,449 | \$ - | \$ 7,528,357 | \$ 4,252,378 |
| | WWPS | 15,557,063 | 2,274,836 | \$ 1,276,896 | \$ 233,356 | \$ 170,193 | | \$ 1,680,446 | \$ 1,087,809 |
| | WPS | 10,304,000 | 1,400,003 | \$ 759,199 | \$ 154,560 | \$ 133,960 | | \$ 1,047,719 | \$ 1,191,180 |
| | FO | 16,800,000 | 1,539,902 | \$ 1,334,220 | \$ 252,000 | \$ 235,434 | | \$ 1,821,654 | \$ 1,014,716 |
| | TANK | 850,000 | 375,379 | \$ 76,755 | \$ 12,750 | \$ 11,912 | | \$ 101,417 | \$ 134,460 |
| | DAM | 225,000 | 17,055 | \$ 20,318 | \$ 3,375 | \$ 3,153 | | \$ 26,846 | \$ 19,617 |
| | VALVE | 200,000 | 11,238 | \$ 18,060 | \$ 3,000 | \$ 2,803 | | \$ 23,863 | \$ 17,493 |
| Electricity SUBTOTALS | | 216,955,188 | 35,435,198 | \$ 16,483,778 | \$ 3,394,970 | \$ 3,121,861 | \$ - | \$ 23,000,609 | \$ 14,934,060 |
| | | Adjustments: | | | | | | \$ 344,000 | \$ - |
| Electricity TOTALS | | Total Cost: | | | | | | \$ 23,344,609 | \$ 14,934,060 |
| Electricity Unit Price | | \$/kWh | | | | | | \$ 0.1076 | \$ 0.4214 |
| OTHER FUEL | | | | | | | | | |
| | | Budget Therms | Actual Therms | Budget Supply | Budget Dist | Budget Energy Tax | | Budget TOTAL | Actual TOTAL |
| Natural Gas | | | | | | | | | |
| | Interruptible | - | - | \$ - | \$ - | \$ - | | \$ - | \$ 714.06 |
| | Firm (Small) | 322,732 | 5,751 | \$ 209,776 | \$ 93,592 | \$ 37,969 | | \$ 341,337 | \$ 105,225.15 |
| | | 322,732 | 5,751 | \$ 209,776 | \$ 93,592 | | | \$ 341,337 | \$ 105,939 |
| | | Adjustments: | | | | | | \$ - | \$ - |
| Natural Gas TOTALS | | 322,732 | 5,751 | 209,776 | 93,592 | | Total Cost: | \$ 341,337 | \$ 105,939 |
| Natural Gas Unit Price | | \$/Therm | | | | | | \$ 1.0577 | \$ 18.4226 |
| | | | | | | | | | |
| | | Budget Gal | Actual Gal | Budget Rate | Actual Rate | | | Budget TOTAL | Actual TOTAL |
| Other Fuels | | | | | | | | | |
| | Fuel Oil #2 | 20,000 | - | \$ 4.000 | \$ - | | | \$ 80,000 | \$ - |
| | Diesel Fuel | - | - | \$ - | \$ - | | | \$ - | \$ - |
| | Propane | 5,000 | - | \$ 3.500 | \$ - | | | \$ 17,500 | \$ - |
| | | | | | | | | \$ 97,500 | \$ - |
| | | Adjustments: | | | | | | \$ - | \$ - |
| Other Fuel TOTALS | | 25,000 | - | | | | Total Cost: | \$ 97,500 | \$ - |
| Other Fuel Unit Price | | \$/gal | | | | | | \$ 3.90 | \$ - |
| GRAND TOTAL | | | | | | | | \$ 23,783,446 | \$ 15,040,000 |

WSSC

| | | 2017 | | | | | | | |
|------------------------|---------------|------------------|------------------|------------------|----------------|----------------------|-------------------------|-----------------|-----------------|
| | | Budget kWh | Actual kWh | Budget G&T | Budget Dist | Budget Energy Tax | Facility Adjustments | Budget TOTAL | Actual TOTAL |
| ELECTRICITY | | | | | | | | | |
| | WTP | 100,676,950 | - | \$ 7,461,460 | \$ 1,590,696 | \$ 1,767,709 | \$ - | \$ 10,819,864 | \$ - |
| | WWTP | 73,663,205 | - | \$ 5,680,053 | \$ 1,301,708 | \$ 859,515 | \$ - | \$ 7,841,276 | \$ - |
| | WWPS | 18,888,487 | - | \$ 1,512,997 | \$ 298,438 | \$ 221,701 | | \$ 2,033,137 | \$ - |
| | WPS | 10,230,400 | - | \$ 758,205 | \$ 161,640 | \$ 136,454 | | \$ 1,056,298 | \$ - |
| | FO | 16,450,000 | - | \$ 1,279,504 | \$ 259,910 | \$ 235,235 | | \$ 1,774,649 | \$ - |
| | TANK | 850,000 | - | \$ 71,995 | \$ 13,430 | \$ 12,155 | | \$ 97,580 | \$ - |
| | DAM | 219,000 | - | \$ 18,549 | \$ 3,460 | \$ 3,132 | | \$ 25,141 | \$ - |
| | VALVE | 150,000 | - | \$ 12,705 | \$ 2,370 | \$ 2,145 | | \$ 17,220 | \$ - |
| Electricity SUBTOTALS | | 221,128,042 | - | \$ 16,795,467 | \$ 3,631,652 | \$ 3,238,045 | \$ - | \$ 23,665,164 | \$ - |
| | | Adjustments: | | | | | | \$ - | \$ - |
| Electricity TOTALS | | Total Cost: | | | | | | \$ 23,665,164 | \$ - |
| Electricity Unit Price | | \$/kWh | | | | | | \$ 0.1070 | \$ - |
| OTHER FUEL | | | | | | | | | |
| | | Budget Therms | Actual Therms | Budget Supply | Budget Dist | Budget Energy Tax | | Budget TOTAL | Actual TOTAL |
| Natural Gas | | | | | | | | | |
| | Interruptible | - | - | \$ - | \$ - | \$ - | | \$ - | \$ - |
| | Firm (Small) | 325,793 | - | \$ 187,396 | \$ 88,616 | \$ 38,949 | | \$ 314,960 | \$ - |
| | | 325,793 | - | \$ 187,396 | \$ 88,616 | | | \$ 314,960 | \$ - |
| | | Adjustments: | | | | | | \$ - | \$ - |
| Natural Gas TOTALS | | 325,793 | - | 187,396 | 88,616 | | Total Cost: | \$ 314,960 | \$ - |
| Natural Gas Unit Price | | \$/Therm | | | | | | \$ 0.9668 | \$ - |
| | | | | | | | | | |
| | | Budget Gal | Actual Gal | Budget Rate | Actual Rate | | | Budget TOTAL | Actual TOTAL |
| Other Fuels | | | | | | | | | |
| | Fuel Oil #2 | 15,000 | - | \$ 1.800 | \$ - | | | \$ 27,000 | \$ - |
| | Diesel Fuel | 10,000 | - | \$ 1.900 | \$ - | | | \$ 19,000 | \$ - |
| | Propane | 11,000 | - | \$ 2.500 | \$ - | | | \$ 27,500 | \$ - |
| | | | | | | | | \$ 73,500 | \$ - |
| | | Adjustments: | | | | | | \$ - | \$ - |
| Other Fuel TOTALS | | 36,000 | - | | | | Total Cost: | \$ 73,500 | \$ - |
| Other Fuel Unit Price | | \$/gal | | | | | | \$ 2.04 | \$ - |
| GRAND TOTAL | | | | | | | | \$ 26,174,218 | \$ - |

MSM

M-NCPPC

Budget Projection for Fiscal Year 2016:

| | Cost as of November 2015* | Projection July 2015 to June 2016 | Budget 2016 | Projected Difference |
|---------------------------|---------------------------------|---|-------------|-------------------------|
| DEPARTMENT OF PLANNING | \$68,093 | \$210,600 | \$239,800 | \$19,939 |
| DEPARTMENT OF PARKS | \$595,911 | \$1,868,600 | \$2,108,345 | \$200,049 |
| ENTERPRISE | \$403,828 | \$1,230,700 | \$1,162,200 | \$99,982 |
| TOTALS | \$1,067,832 | \$3,309,900 | \$3,510,345 | \$319,970 |

**Data Based on Financial Reports Provided by Divisions*

Budgeted expenditures for Fiscal Year 2016:

| | |
|-----------------------------|--------------|
| Programs Energy Management: | \$44,400.00 |
| Projects CIP: | \$40,000.00 |
| Projects Local: | \$37,000.00 |
| Projects Non-local: | \$40,000.00 |
| Total in FY 2016: | \$161,400.00 |

MNCPPC

Budget Proposal for Fiscal Year 2017 is:

| | Proposed Budget 2017 (Note 1) |
|------------------------|-------------------------------|
| DEPARTMENT OF PLANNING | \$224,000 |
| DEPARTMENT OF PARKS | \$2,108,345 |
| ENTERPRISE | \$1,170,600 |
| TOTALS | \$3,502,945 |

Note 1 - The proposed budget for Fiscal Year 2017 assumes the following:

- The Department of Planning will remain at the current location in Silver Spring until July 2017
- Central Offices for the Department of Parks will remain at the current location at the Parkside Headquarters Building until July 2017
- The Department of Parks Facilities Maintenance operation at the Shady Grove Center will remain at the current location until July 2017

Proposed budget expenditures for Fiscal Year 2017:

| | |
|-----------------------------|--------------------|
| Programs Energy Management: | \$45,300.00 |
| Projects Local: | \$37,000.00 |
| <u>Projects Non-local:</u> | <u>\$40,000.00</u> |
| Total in FY 2017: | \$122,300.00 |

MANC PPC

Fiscal Year 2017

Utility Budget Projection by Fund/Cost

| DEPARTMENT OF PLANNING | | <u>Proposed 2017 Budget</u> |
|--|-----------------|------------------------------------|
| 2220 | Electricity | \$185,600 |
| 2210 | Natural Gas | \$28,000 |
| 2230 | Water and Sewer | \$7,400 |
| 1903 | Propane | -0- |
| | Wind Energy Fee | \$3,000 |
| | Sub Total | \$224,000 |
| | | |
| DEPARTMENT OF PARKS | | <u>Proposed 2017 Budget</u> |
| 2220 | Electricity | \$1,165,945 |
| 2210 | Natural Gas | \$380,000 |
| 2230 | Water and Sewer | \$408,000 |
| 1903 | Propane | \$137,400 |
| | Wind Energy Fee | \$17,000 |
| | Sub Total | \$2,108,345 |
| | | |
| DEPARTMENT OF PARKS -ENTERPRISE | | <u>Proposed 2017 Budget</u> |
| 2220 | Electricity | \$828,900 |
| 2210 | Natural Gas | \$231,400 |
| 2230 | Water and Sewer | \$60,800 |
| 1903 | Propane | \$37,500 |
| | Wind Energy Fee | \$12,000 |
| | Sub Total | \$1,170,600 |
| | | |
| Overall Totals | | \$3,502,945 |

FY17 MCPS Resource Conservation Plan
Operating Cost/Consumption Summary Table

| Agency | Montgomery County Public Schools, Maryland | | | | |
|--------------------------------------|---|--|---------------------------------------|-----------------------------------|--|
| Number of Facilities | 233 | Change in number of facilities | 0 | | |
| Total square feet | 24,691,846 | Change in total square feet | 261,357 | | |
| Average annual operating hours | 3,220 | Change in average annual operating hours | 0 | | |
| Changes effecting energy consumption | <p>Expanding Community Use of Schools: MCPS schools are used for a growing number of outside groups scheduled through the Community Use of Public Facilities (CUPF). Annual operating hours are on the rise.</p> <p>Increasing Summer Use of Schools: Schools have been fully air-conditioned and are used over the summer for an increasing number of academic, extended learning opportunities (ELO), recreational, and community activities.</p> | | | | |
| | Units | Total Consumption (Actual FY 2015) | Percent Change from Actual FY 2014 | Total Cost (Actual FY 2015) \$ | Percent Change from Actual FY 2014 |
| Electricity | kWh | 236,597,129 | 0.8% | 27,979,110 | -7.7% |
| Natural Gas | therms | 6,447,534 | 2.8% | 6,332,466 | 3.6% |
| Fuel Oil #2 | gallons | 31,179 | -32.1% | 65,891 | -55.8% |
| Propane | gallons | 37,963 | -4.5% | 44,102 | -26.6% |
| Water/Sewer | kgallons | 410,587 | 7.1% | 3,055,972 | 8.3% |
| Total | | | | \$37,477,541 | -5.0% |

FY17 MCPS Resource Conservation Plan
ECM Cost-Benefit Summary Table

| One-Time Projects | Completion Year | Implementation Cost | Annual Cost Savings | Average Simple Payback (Years) |
|--|-----------------|---------------------|---------------------|--------------------------------|
| New Measures | FY16 | \$2,834,754 | \$629,497 | 4.5 |
| Existing Measures | FY07 - FY15 | \$14,312,401 | \$6,080,796 | 2.4 |
| Planned Measures | FY17 | \$1,669,354 | \$591,363 | 3.8 |
| Subtotal | | \$18,816,509 | \$7,301,656 | 2.6 |
| | | | | |
| Annual Operations Programs | | Annual Cost | Annual Cost Savings | Payback |
| School Energy and Recycling Teams | FY17 | \$984,266 | \$2,073,598 | 215% |
| Peak Load Management | FY17 | \$120,000 | \$934,000 | 778% |
| Utility Bill Accounting | FY17 | \$50,000 | \$350,000 | 700% |
| Retrocommissioning | FY17 | \$100,000 | \$400,000 | 400% |
| Solar PV PPAs | FY17 | \$0 | \$206,000 | |
| Subtotal | | \$1,234,266 | \$3,963,598 | 321% |
| | | | | |
| Grand Total MCPS Annual Savings | | | \$10,673,891 | |

FY17 MCPS Resource Conservation Plan
FY17 ECM Cost-Benefit Table

| Measures - Planned: | Projected Completion Date (mo/yr) | Projected Initial Cost (\$) - After Rebates | Projected Annual Net Impact on Maintenance Cost (\$) (-) | Fuel Type(s) Affected And Units | Estimated Units Saved Per Year | Projected Annual Cost Savings (\$) |
|---------------------------------------|-----------------------------------|---|--|---------------------------------|--------------------------------|------------------------------------|
| Energy Projects: | | | | | | |
| Energy Management Upgrades | Jun-17 | \$1,312,600 | (\$50,000) | Elect kWh | 1,476,809 | \$188,025 |
| | | | | NG Therm | 38,652 | \$40,718 |
| Lighting Retrofits | Jun-17 | \$356,754 | (\$178,377) | Elect kWh | 521,834 | \$62,620 |
| | | | | | | |
| Subtotal Elec KWH | | | | Elect kWh | 1,998,643 | |
| Subtotal NG Therm | | | | NG Therm | 38,652 | |
| FY 2017 Page Totals | | \$1,669,354 | (\$228,377) | | | \$291,363 |
| Operations and Maintenance: | | | | | | |
| Motors and Lights | | | | | | |
| HVAC Replacement Program | | | | Elect kWh | 2,086,957 | \$ 240,000 |
| | | | | NG Therm | 56,956 | \$ 60,000 |
| Subtotal - Energy Projects plus O & M | | | | Elect kWh | 4,142,555 | |
| | | | | NG Therm | 95,607.71 | |
| | | | | | | |
| FY 2017 Page Totals | | \$1,669,354 | (\$228,377) | | | \$591,363 |

FY17 MCPS Resource Conservation Plan
FY16 ECM Cost-Benefit Table

| Measures - Planned: | Projected Completion Date (mo/yr) | Projected Initial Cost (\$) - After Rebates | Projected Annual Net Impact on Maintenance Cost (\$)(-) | Fuel Type(s) Affected And Units | Estimated Units Saved Per Year | Projected Annual Cost Savings (\$) |
|---------------------------------------|-----------------------------------|---|---|---------------------------------|--------------------------------|------------------------------------|
| Energy Projects: | | | | | | |
| Energy Management Upgrades | Jun-16 | \$2,478,000 | (50,000.00) | Elect kWh | 2,788,004 | \$354,964 |
| | | | | NG Therm | 72,969 | \$83,912 |
| Lighting Retrofits | Jun-16 | \$356,754 | (178,377.00) | Elect kWh | 521,834 | \$62,620 |
| | | | | | | |
| Subtotal Elec KWH | | | | Elect kWh | 3,309,837 | |
| Subtotal NG Therm | | | | NG Therm | 72,969 | |
| FY 2016 Page Totals | | \$2,834,754 | (228,377.00) | | | \$501,497 |
| Operations and Maintenance: | | | | | | |
| Motors and Lights | | | | | | |
| HVAC Replacement Program | | | | Elect kWh | 1,113,043 | \$ 128,000 |
| | | | | NG Therm | 30,376 | \$32,000 |
| Subtotal - Energy Projects plus O & M | | | | Elect kWh | 4,422,880.68 | |
| | | | | NG Therm | 103,346 | |
| FY 2016 Page Totals | | \$2,834,754 | (228,377.00) | | | \$629,497 |

FY17 MCPS Resource Conservation Plan
Existing Measures FY07-15 Summary Table

Existing Energy Measures

| Existing Measures Project Types | Completion Year | Implementation Cost | Annual Cost Savings | Average Simple Payback (Years) |
|---|-----------------|---------------------|---------------------|-----------------------------------|
| All Types | FY2015 | \$1,149,550 | \$968,907 | 1.2 |
| All Types | FY2014 | \$1,668,358 | \$444,599 | 3.8 |
| All Types | FY2013 | \$832,933 | \$632,095 | 1.3 |
| All Types | FY2012 | \$2,302,083 | \$263,886 | 8.7 |
| All Types | FY2011 | \$722,743 | \$126,224 | 5.7 |
| All Types | FY2010 | \$747,734 | \$248,074 | 3.0 |
| All Types | FY 2009 | \$1,700,000 | \$490,560 | 3.5 |
| All Types | FY 2008 | \$2,420,000 | \$984,510 | 2.5 |
| All Types | FY 2007 | \$2,769,000 | \$1,921,940 | 1.4 |
| Existing Measures Grand Totals | | \$14,312,401 | \$6,080,796 | 2.4 |

EXECUTIVE SUMMARY

The Resource Conservation Plan (RCP) has been prepared by Montgomery College's Office of Central Facilities to support the College's Fiscal Year (FY) 2017 Energy Conservation Capital Improvements Program (CIP) and Utility Operating Budget requests for funding. Published annually this plan provides historical background and discusses FY2015-FY2016 accomplishments and FY2016-2017 plans.

This document describes the Montgomery College Resource Conservation Program that includes master planning, utility management, benchmarking, sustainable building design, energy conservation activities, transportation fleet management, waste stream management and program outreach and awareness. Included are descriptions of the resource conservation organization, discussion of current and historical utility consumption and costs, resource conservation program accomplishments and future plans. Tables and graphs present information on historical utility consumption and utility budget estimates while Capital Improvement Program (CIP) Project Description Forms (PDF) that relate to the College's Resource Conservation efforts are discussed and included in the appendices.

Since 2002 the College has seen a 63% increase in building space as the College continues to expand to meet the demands of its educational programs. The table summarizes recent and active construction projects.

| Campus | Building | Gross Square Feet (GSF) | New (N) Renovated (R) Expansion (E) | Status | Open date | LEED Certification |
|--------------|--|-------------------------|---|--------------|----------------|--|
| G | Bioscience Center (BE) | 139,982 | N | Opened | August 2014 | Gold August 2015 |
| T | Pavilion Three (P3) | 17,000 (+2,000) | R, E | Opened | January 2016 | Silver Targeted |
| R | North Garage (NG) | 310,000 (918 spaces) | N | Construction | September 2016 | Green Garage Certification 20 EV Charging Stations |
| R | Science West (SW) | 70,164 (+28,176) | R,E | Construction | January 2017 | Gold Targeted |
| G | Science and Applied Studies (SA) Phase 1 | 99,648 (+35,502) | R,E | Construction | March 2018 | Gold Targeted |
| R | New Student Services | 126,756 | N | Design | January 2019 | Gold Targeted |
| Total | | 643,416 | | | | |

Historically, all buildings regardless of function have been optimized to meet the project requirements while minimizing environmental impacts. The College plans to achieve the U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Gold certification that exceeds the County Legislated LEED Silver as well as surpassing the requirements of the 1985 Building Energy Performance legislation.

The College continues to implement recommendations in the college-wide Master Plans and Utility Master Plans on all three campuses while at the same time preparing new and expanded master plans for the out-years. Master planning is an important tool using Integrated Lifecycle Management (ILM) practices to

ensure that sustainability issues are fully examined and properly integrated into the fabric of the institution. The College participates in the joint agency procurement of deregulated electricity, natural gas and wind generated renewable energy certificates (REC). In FY 2016 the College purchased 130% of its electricity in the form of wind RECs and has committed to purchase 136% in FY 2017.

The College continues to participate as a member of various County sponsored sustainability and energy committees and national engineering and professional society committees. The College encourages faculty, staff, student and public participation in our sustainability efforts via social media, electronic newsletter articles and the student sponsored MC Green Club. Interdepartmental coordination continues to increase, providing more opportunities for College stakeholders to participate. In fall 2011 the College organized the MC Green Team, tasked with expanding resource conservation program outreach efforts throughout the College community. The College offers credit and non-credit academic and continuing education courses in subjects related to green collar jobs, sustainable design, green business practices and the LEED Rating System.

Montgomery College is requesting \$125,000 for the FY2017 College Energy Management Capital Improvements Program (CIP) which funds the Utility Analyst position and various energy projects while the FY 2017 operating budget includes funding for one Energy Manager Position. These requests are the same as in past fiscal years. Energy and sustainability opportunities are also integrated into various building renovation and equipment replacement projects which are funded by various capital and operating budgets. The FY 2017 utility operating budget request \$8,053,295 a 2.71% increase from the FY 2016 request, primarily due to increased unit costs and increased consumption due to new building construction.

Montgomery College is dedicated to implementing and maintaining a sustainable, life cycle cost-effective, low risk resource conservation program. Although all energy conservation and environmentally friendly opportunities are considered, only those opportunities which are of the appropriate level of technology, have a high probability of success and meet the lowest net present value criteria will be implemented. To ensure that the resource conservation program is operating as predicted, measurement and verification protocol are implemented and appropriate databases are maintained and buildings are benchmarked. The goal of the program is to provide safe, comfortable, economical and environmentally friendly facilities, which will enhance the learning environment and contribute to student success at Montgomery College.



Rockville Campus North Garage (NG) Construction January 2016 Opening Fall 2016

Summary of New Buildings, Renovations & Projects – RCP FY 2017

| Year | Campus | Building Name | Gross Square Feet | Green Building Certification (1) | Features |
|-----------|--------|---|-------------------|----------------------------------|---|
| 2004 | TP/SS | Health Sciences Center - New | 98,038 | BEPS | Classrooms, Offices, Laboratories 33 kW photovoltaic. |
| 2006 | TP/SS | Charlene R. Nunley Student Services Center - New | 110,504 | BEPS | Classrooms, Offices, Bookstore, Cafeteria, East Campus Central Plant, Ammonia Refrigeration, Ice Storage. |
| 2006 | GT | Goldenrod Building Purchased/Renovated | 68,826 | BEPS | Classrooms, Offices on 1 st floor, 2 nd floor leased by Montgomery County |
| 2007 | TP/SS | The Morris and Gwendolyn Catritz Foundation Arts Center - Redevelopment | 134,748 | BEPS | Art Labs, Offices, Bookstore, West Campus Central Plant, Ammonia Refrigeration, Ice Storage. 4000 GSF, Information and Technology Operations Center added Spring 2009. |
| 2009 | TP/SS | The Cultural Arts Center - New | 57,243 | BEPS | Performing arts studios, classrooms, Auditorium. Connection to West Campus Central Plant. |
| 2009 | TP/SS | The Commons - Renovation | 30,235 | BEPS | Classrooms, offices. Connection to East Campus Central Plant. |
| 2010 | TP/SS | West Garage - New | 159,795 | BEPS | 5 level, 300+ space parking garage. High efficiency lighting, west plant ice modules installed. |
| 2011 | RV | Science Center - New | 140,700 | BEPS & LEED Gold | Classrooms, Laboratories, Offices, satellite plant, frictionless chillers, 25 kW photovoltaic, vegetative roof. |
| 2013 | TP/SS | Falcon Hall | 39,063 | Equipment Replacement | Removal of original equipment, ageing, No. 2 Oil Fueled boilers by connection to central plant hot water distribution system. |
| 2012 | GT | Child Care Center - New | 5,000 | BEPS | Child care facility. Central plant connection. |
| 2013(4) | TP/SS | Pavilion Four HVAC Renovation | 15,837 | BEPS | Major HVAC replacement, connection to central plant, removal of underground fuel oil storage tank. |
| 2013 | GT | Humanities & Social Sciences, Physical Education | 75,700 & 36,770 | Equipment Replacement | Replaced ageing pulse combustion boilers with high efficiency condensing boilers and new controls. New high efficiency pumps. |
| 2013 | GT | Physical Education | 36,770 | Equipment Replacement | Replaced original air handling system in natatorium with high performance dehumidification heat pump w/heat recovery. |
| 2013 | GT | High Technology | 36,770 | Equipment Replacement | Replaced ageing pulse combustion boilers with high efficiency condensing boilers and new controls |
| 2013 | RV | Parking Lot 1 | N/A | Lighting Replacement | Parking lot renovation & resurfacing. New lighting design using super pulse start metal halide lighting, replaces low pressure sodium lighting. |
| 2014-2016 | TP/SS | Pavilion Three - Renovation | 17,000 | BEPS & LEED Silver Targeted | Classrooms, computer laboratories, & offices. New envelope, lighting, HVAC, etc. Conversion from all electric heating and cooling to central plant connection. |
| 2014 | GT | Bioscience Education Center – New | 145,139 | BEPS & LEED Gold Targeted | Classrooms, Laboratories, Offices, satellite plant, ammonia refrigeration, ice storage, frictionless chiller, heat recovery. 35kW photovoltaic, 6 kW wind, vegetative roof, bio retention area. |

| Summary of New Building, Renovations & Projects - RCP 2017 (cont'd) | | | | | |
|---|--------|---|-------------------|------------------------------------|---|
| Year | Campus | Building Name | Gross Square Feet | Green Building Certification (1) | Features |
| 2014 | RV | Science East Building – Renovation | 53,737 + 7,056 | BEPS & LEED Gold Targeted | Renovation & addition. Classrooms, computer laboratories, & offices. Envelope, lighting, HVAC & 20 kW photovoltaic. |
| 2014 | RV | Parking Lot 5 & 6 | N/A | Lighting Replacement | Parking lot renovation & resurfacing. New lighting design using super pulse start metal halide lighting, replaces low pressure sodium lighting. Selection based upon life cycle cost analysis. |
| 2014-2016 | RV | Science West Building – Renovation & Addition | 35,502 | BEPS & LEED Gold Targeted | Renovation & 3 rd floor addition. Classrooms, computer laboratories, offices. Envelope, lighting, HVAC, 20 kW photovoltaic. |
| 2014-2017 | CW | college-wide (CW) | N/A | PEPCO Rebate Program | Various energy upgrades, i.e. lighting, lighting controls, etc. Involves numerous College buildings. |
| 2014-16 | TP/SS | Falcon Hall | 39,063 | Equipment Replacement | Major HVAC & lighting multi-year replacements. Replacing ageing HVAC equipment, connection to central plant for heating and cooling. Elimination of No. 2 Fuel Oil fired equipment and fuel oil storage tank. |
| 2014-16 | TP/SS | Resource Center | 44,906 | Equipment Replacement | Major HVAC & lighting multi-year replacements. Replacing ageing HVAC equipment, connection to central plant for heating and cooling. Elimination of electrical heating and cooling systems. |
| 2015-2016 | RV | North Garage - New | N/A | BEPS, LEED & Green Parking Targets | New 918 space parking structure. Sustainable design, lighting, photovoltaic evaluation, & 20 electric vehicle charging stations. |
| 2014-2018 | GT | Science & Applied Studies – Renovation & Addition | 99,648 +35,502 | BEPS, LEED Gold Targeted | Renovation of 2 nd floor and addition. Classrooms, computer laboratories, dry laboratories & offices. Envelope, lighting, HVAC & evaluation of photovoltaic. |
| 2016-2019 | RV | Student Services Center – New | 120,400 | BEPS, LEED Gold Targeted | Classrooms, registration areas, counseling, security office, new high performance central hot water plant which will replace ageing central plant boilers in the existing Humanities Building central plant. |

Notes:

1. 1985 County Council legislation mandated Building Energy Performance Standards (BEPS). Which requires all county agency buildings to meet energy standards and perform energy analysis and life cycle cost. 2007 County Council legislation requires all county agency buildings to meet U.S. Green Building Council (USGBC) LEED Silver rating. Equipment replacements are based upon technical evaluation and life cycle cost analysis.
2. Lighting – All lighting involves selection of the appropriate source based upon national standards and technical evaluation of the application. Analysis is performed to determine lighting layouts and life cycle cost effectiveness.
3. Central Plant – All campuses have central heating and cooling plants which have been determined to be cost effective based upon utility planning and life cycle cost analysis. The plants contain high efficient ammonia refrigeration cooling systems with ice thermal storage for electrical demand management, co-generation/co-process equipment with heat recovery and high efficient natural gas fired boilers.

Montgomery College

Existing Measures

Resource conservation measures implemented prior to FY 2016 (FY1998 TO FY2015)

| Measures | Date Implemented (mo/yr) | Initial Cost (\$) | Annual Net Impact On Maintenance Cost (\$) | Fuel Type Affected And Units | Units Saved Per Year | Annual Cumulative Cost Savings (\$) |
|--------------------------|--------------------------|-------------------|--|------------------------------|---|-------------------------------------|
| Lighting | Various | 375,000 | (12,000) | Electricity | 1,374,423 kWh Maint. | 212,708 12,000 |
| HVAC & Controls | Various | 1,205,000 | (28,800) | Elect., N. Gas & Fuel Oil | 877,307 kWh 52,187 therms (Th) Maint. | 84,267.5 75,780 27,600 |
| New Building Design | Various | 1,900,000 | (24,250) | Elect., N. Gas & Fuel Oil | 1,689,229 kWh 54,375 Th Maint. | 222,134 52,200 19,750 |
| Central Plant Technology | Various | 900,000 | (32,000) | Elect., N. Gas & Fuel Oil | 963,877 kWh 19,870 Th Maint. | 126,749.8 19,075.2 32,000 |
| Total | | 4,380,500 | (97,050) | | 4,904,836 kWh 126,432 Th | 884,264.5 Av. Payback 4.3 yrs |

Existing measures consist of Lighting, HVAC & Controls, New Building and Renovated Building Design and Central Plant Technologies that reduce energy cost, reduce energy consumption and reduce maintenance costs.

New Measures

Resource conservation measures implemented during FY 2016 (July 1, 2015 through June 30, 2016)

| Measures | Date Implemented (mo/yr) | Initial Cost (\$) | Annual Net Impact On Maintenance Cost (\$) | Fuel Type Affected And Units | Units Saved Per Year | Annual Cost Savings (\$) |
|-----------------------|--------------------------|-------------------|--|------------------------------|-------------------------|--------------------------|
| Lighting | Various | 18,000 | (1,000) | Elect. | 32,000 kWh | 10,400 1,000 |
| HVAC | Various | 18,000 | (1,500) | Elect., N.Gas & Fuel Oil | 10,000 kWh, 16,000Th | 3,250 5,600 1,500 |
| Controls | Various | 9,000 | (1,700) | Elect.N.Gas & Fuel Oil | 4,000 kWh 800 Th | 2,600 5,600 1,000 |
| Total | | 45,000 | (4,200) | | | 27,970 |
| Simple Payback | | | | | | 4.5 yrs |

New measures consist of Lighting, HVAC & Controls, which reduce energy cost, reduce energy consumption and reduce maintenance costs.

This was funded from PLAR. The lighting project is expected to save 100,000 kWh/yr and save approximately \$20,000/year in operating costs. Participation in the PEPCO rebate program for FY2016-FY2017 will supplement College funds.

Planned Measures

This table shows information on resource conservation measures planned to be implemented in FY 2016 (July 1, 2015 through June 30, 2016)

| Measures | Date Implemented (mo/yr) | Initial Cost (\$) | Annual Net Impact On Maintenance Cost (\$) | Fuel Type Affected And Units | Units Saved Per Year | Annual Cost Savings (\$) |
|--------------------------------------|--------------------------|-------------------|--|------------------------------|-----------------------------------|--------------------------|
| Capital Improvement Projects: | | | | | | |
| Lighting, HVAC & Controls | July 2016 | 45,000 | (4,000) | Elect., N.Gas & Fuel Oil | 200,000 kWh 8,000 Th Maint. | 5,000 2,520 2,000 |
| Utility Analyst | July 2016 | 80,000 | 0 | 0 | 0 | 0 |
| Total | | 125,000 | 0 | | | 9,520 |
| Simple Payback | | | | | | 13.1 yrs. |

Initial investment in Utility Analyst salary is eventually expected to save 2-5% of utility budget as implementation of additional energy efficiency measures become effective.



**WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2017
RESOURCE CONSERVATION PLAN**

Summary

The information on this page reflects the facilities owned or operated
By WSSC as of the end of FY 15 (June 30, 2015)

| | | | |
|--|-----------------|-----------------------------------|-----|
| Number of Facilities | 213 | Change in number of facilities | +3 |
| Total square feet | N/A | Change in total ft ² | N/A |
| Average operating hrs/year | N/A (most 24/7) | Change in avg. operating hrs/year | N/A |
| Other changes effecting energy consumption | See Narrative | | |

| Utilities: | units | total consumption (actual FY 15) | percent change from actual FY 14 | total cost (actual FY 15) \$ | percent change from actual FY 14 |
|--------------------------|---------|-------------------------------------|-------------------------------------|---------------------------------|-------------------------------------|
| Electricity | kWh | 202,691,900 | -5% | \$22,744,800 | -6% |
| Natural Gas (firm) | therms | 362,400 | +5% | \$356,400 | +10% |
| Natural Gas (Irate) | therms | 0 | N/A | \$0 | N/A |
| Diesel Fuel (generators) | gallons | 8,100 | -46% | \$26,500 | -56% |
| Fuel Oil #2 | gallons | 13,500 | +13% | \$32,700 | -24% |
| Propane | gallons | 9,500 | +200% | \$16,500 | +83% |
| Water/Sewer | gallons | N/A | N/A | N/A | N/A |
| Total | | | | \$24,742,000 | |



**WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2017
RESOURCE CONSERVATION PLAN**

Existing Measures- Prior to FY'15

This table shows information on resource conservation measures implemented prior to FY 15
(July 1, 2004 through June 30, 2014)

| Measures - Existing: (implemented from FY 04 to FY 14) | date implemented (mo/yr) | initial cost (\$) | annual net impact on maint. cost (\$) | fuel type(s) effected and units | units saved per year | annual cost savings (\$) |
|---|--------------------------------|-------------------------------------|--|---------------------------------------|-------------------------------|-----------------------------|
| Capital Improvement Projects: | | | | | | |
| Variable Frequency Drives | FY 03 | \$250,000 | (\$10,000) | Electricity | 1,000,000 kWh 1,000 kW | \$50,000 |
| Energy Performance Project- Phase IIA | FY 05 | \$10,300,000 | (\$50,000) | Electricity | 9,000,000 kWh | \$1,100,000 |
| Energy Performance Project- Phase IIB | 1/08 Seneca WWTP | \$2,370,000 E-G Peak- Shaving | (\$20,000) | Electricity | 1,000 kW | \$120,000 |
| Energy Performance Project- Phase IIB | 9/09 Anac. II WWPS | \$2,000,000 New Pumps | (\$20,000) | Electricity | 3,100,000 kWh 1,000 kW | \$350,000 |
| Total, CIP | | \$14,920,000 | (\$100,000) | Electricity | 13,100,000 kWh 2,000 kW | \$1,620,000 |
| Operations and Maintenance: | | | | | | |
| Load Curtailment | FY 03 | \$0 | \$0 | Electricity | 5,000 kW | \$500,000 |
| Pump Turbine Utilization (Rocky Gorge) | FY 03 | \$0 | \$0 | Electricity | 2,000,000 kWh | \$200,000 |
| Derceto Water Pumping Optimiz. System - Load Shifting & Effic. Optimiz. | Start-up 4/06 | \$100,000 | (\$200,000) | Electricity | 1000 kW 2,000,000 kWh | \$200,000 |
| Energy Performance Project- Phase IIC- Elect. Supply- 28% wind | 4/08 Wind farm Start-up | \$0 | \$0 | Electricity | N/A | \$200,000 |
| Total, O&M | | \$0 | (\$200,000) | Electricity | 4,000,000 kWh 6,000 kW | \$1,100,000 |
| Page Total | | \$15,020,000 | (\$300,000) | Electricity | 17,100,000 kWh 8,000 kW | \$2,720,000 |



**WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2017
RESOURCE CONSERVATION PLAN**

Existing Measures- FY'15

This table shows information on resource conservation measures implemented during FY 15
(July 1, 2014 through June 30, 2015)

| Measures - New: (Implemented during FY 15) | date implemented (mo/yr) | initial cost (\$) | annual net impact on maint. cost (\$) | fuel type(s) effected and units | units saved per year | annual cost savings (\$) |
|---|--------------------------------|----------------------|--|--|------------------------------|--------------------------------|
| Capital Improvement Projects: | | | | | | |
| Pump Turbine Utilization (Rocky Gorge) | 1/13 Turbines rebuilt | \$1,500,000 | \$0 | Electricity | 2,000,000 kWh | \$200,000 |
| Energy Performance Project- Phase IID (Potomac Pump Upgrade) | 11/13 6 pumps | \$6,200,000 | \$0 | Electricity | 5,900,000 kWh | \$650,000 |
| Total, CIP | | \$7,700,000 | \$0 | Electricity | 7,900,000 kWh | \$750,000 |
| Operations and Maintenance: | | | | | | |
| Energy Performance Project- Phase IIC- Electric Supply with 28% wind power | 4/08 Wind farm Start-up | \$0 | \$0 | Electricity | N/A | (\$200,000) |
| PJM Demand Response Program | 7/13-9/14 | \$0 | \$0 | Electricity | 5,000 kW load shedding | \$300,000 |
| Solar PV PPA- Seneca & Western Branch | 10/31/13 | \$0 | \$0 | Electricity | 4,000 kW | \$157,000 |
| Total, O&M | | \$0 | \$0 | Electricity | 9,000 kW | \$257,000 |
| Page Total | | \$7,700,000 | \$0 | Electricity | 7,900,000 kWh 9,000 kW | \$1,007,000 |
| Description of Activities: | | | | | | |
| See narrative | | | | | | |



WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2017
RESOURCE CONSERVATION PLAN

New Measures

This table shows information on resource conservation measures planned
To be implemented in FY 16 (July 1, 2015 through June 30, 2016)

| Measures - Planned: (for FY16) | projected completion date (mo/yr) | projected initial cost (\$) | projected annual net impact on maint cost (\$) | fuel type(s) effected and units | estimated units saved per year | projected annual cost savings (\$) |
|--|--|--------------------------------|---|--|--------------------------------------|--|
| Capital Improvement Projects: | | | | | | |
| Total, CIP | | \$0 | \$0 | Electricity | 0 | \$0 |
| Operations and Maintenance: | | | | | | |
| PJM Emergency Demand Response Program- Potomac & Western Branch | 9/30/15 | \$0 to WSSC | \$0 | Electricity | 0 | \$320,000 |
| Total, O&M | | \$0 | \$0 | Electricity | | \$320,000 |
| Page Total | | \$0 | | Electricity | 0 | \$320,000 |
| Description of Activities: | | | | | | |
| See narrative | | | | | | |



WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2017
RESOURCE CONSERVATION PLAN

Planned Measures

This table shows information on resource conservation measures planned
To be implemented in FY 17 (July 1, 2016 through June 30, 2017)

| Measures - Planned: (for FY17) | projected completion date (mo/yr) | projected initial cost (\$) | projected annual net impact on maint. cost (\$) | fuel type(s) effected and units | estimated units saved per year | projected annual cost savings (\$) |
|---|--|-----------------------------------|--|--|---|--|
| Capital Improvement Projects: | | | | | | |
| Total, CIP | | \$0 | \$0 | Electricity | 0 | \$0 |
| Operations and Maintenance: | | | | | | |
| Solar PV PPA- Ph. II: Seneca & Offsite (5 MW total) | 6/30/16 | \$0 to WSSC | \$0 | Electricity | 0 | \$500,000 |
| PJM Emergency Demand Response Program- Potomac | 9/30/16 | \$0 to WSSC | \$0 | Electricity | 0 | \$300,000 |
| Total, O&M | | \$0 | \$0 | Electricity | 0 | \$800,000 |
| Page Total | | \$0 | \$0 | Electricity | 0 | \$800,000 |
| Description of Activities: | | | | | | |
| See narrative | | | | | | |
| | | | | | | |

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, 2015 and the plans for the balance of the 2016 Fiscal Year.

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 2016.

The report establishes plans for the 2017 Fiscal Year to conserve energy and water resources as part of a comprehensive Resource Conservation Plan.

2. FISCAL YEAR RESULTS – 2015

July 2014 to June 2015

Goals Achieved:

- Implemented projects focused on heating and air conditioning system replacements for equipment in operation for over 20 years
- Expansion of the building automation controls and energy management systems capabilities in the primary staff office, support, and maintenance buildings
- Expanded the exterior lighting retrofit program to use LED technology
- Integrated program as part of the Sustainability Practice
- Implemented an opportunity to construct two solar renewable energy projects

Projects and Programs Completed Fiscal Year 2015

- Saddlebrook - Installed two Variable Frequency Drives on the Large Circulating pumps on the Hydronic heating system
- Saddlebrook - Installed a Tekmar outside reset control that lowers the operating water temperature according to outside temperature
- Colesville Recreation Building - Installed two high efficiency ductless heat pumps, rated at 20 SEER
- Locust Grove Nature Center - Installed a high efficiency ductless heat pump rated at 20 SEER
- Property Management Unit on Piedmont Road- Installed a ductless heat pump rated at 20 SEER
- Installed 103 Ecobee Wi-Fi Energy Management thermostats.
- East Norbeck Local Park – Exterior Lighting replacements with LED fixtures
- Elsworth Local Park – Exterior Lighting replacements with LED fixtures
- Seneca Lodge - Installed a high efficiency Heat Pump system 18 SEER for cooling and a 9.5 HSPF for heating
- Rockwood Hoover Room - Installed a two stage 95% condensing furnace along with an 18 SEER air conditioning unit
- Rockwood Caroline Cottage - Installed a two stage 95% condensing furnace along with an 18 SEER air conditioning unit
- Exterior Lighting replacements with LED fixtures
 - East Norbeck - Six Fixtures
 - Elsworth - Eight Fixtures

3. RESULTS TO DATE - FISCAL YEAR 2016

July 2015 to June 2016

The results of the current program year as of December 2015 is as follows:

Goals:

- Commence the Implementation of solar renewable energy projects
- Expand the exterior lighting retrofit program to use LED technology
- Integrate program as part of the Sustainability Practice
- Seek project grant opportunities

Status to Date: Projects and Programs for Fiscal Year 2016

- Meadowbrook Maintenance - Installed evacuated solar tube collectors to provide hot water to the car wash unit
- Meadowbrook Maintenance - Installed a new high efficiency HVAC system, efficiency rating was 18 SEER
- Meadowbrook Recreation Building - Installed a new 18 SEER air conditioning system with variable speed blower
- Armstrong House - Installed a mod con boiler rated at 95% efficiency
- Cabin John Park Administration - Installed a high efficiency ductless HVAC unit rated at 20 SEER
- Darby Store Project – Installed two high efficiency Heat Pump systems. Efficiency rating of 18 SEER for cooling and 9.5 HSPF for heating. Adding ECM blowers in the air handlers.
- Exterior Lighting replacements with LED fixtures
 - Georgian Forest - Eight Fixtures
 - Bucks Branch - Five Fixtures
 - Blueberry Hill - Seven Fixtures
 - Ednor - Four Fixtures
 - Leaman - Four Fixtures
 - Wall Park – Twenty Six Fixtures
 - Flower Avenue - Six Fixtures
 - Seven Locks - Five Fixtures

4. PLANNED RESOURCE CONSERVATION PLAN – FISCAL YEAR 2017

July 2016 to June 2017

The proposed program for Fiscal Year 2017 is as follows:

Goals:

- Complete the implementation of solar renewable energy projects by December 31, 2016
- Evaluate additional renewable energy projects
- Complete the exterior lighting retrofit program to use LED technology
- Expand the program as part of the Sustainability Practice
- Commence Planning for the transfer of staff and maintenance operations to new facilities beginning July 2017

Projects and Programs for Fiscal Year 2017

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

Park Facilities – Continue HVAC Replacements

Recreation Centers - Install LED interior lighting and exterior wall lighting

Exterior Lighting - Install additional LED parking lot and area lighting

- Westmore Hills - Five Fixtures
- Cabin John - Three Fixtures
- Randolph Hills - Six Fixtures
- Glenmont - Twelve Fixtures
- Pinecrest - Two Fixtures
- Nolte - Six Double Fixtures
- Clarksburg - Two Fixtures
- Waverly Schylhil - Six Fixtures
- Tobytown - Three Fixtures
- Spencerville – Seven Fixtures

RESOURCE CONSERVATION PLAN Summary

| | | | |
|--|--|------------------------------------|------|
| Agency | Maryland-National Capital Park and Planning Commission | | |
| Number of Facilities | 398 Facilities that have utilities | Change in number of facilities | 0 |
| Total square feet | 1,205,420 | Change in total ft ² | 0 |
| Average operating hrs./year | Varies | Change in avg. operating hrs./year | None |
| Other changes effecting energy consumption | <p>The implementation of a comprehensive energy management and water conservation program for the Department of Parks by the three operating Divisions: North Parks Region, South Parks Region, and Enterprise Operations contributed to additional consumption reductions at the following park facilities:</p> <p>Acres of Parkland: 35,266 Total Developed Acres: 8,950 Total Set Aside for Preservation: 26,316</p> <p>Parks: 418 Stream Valley: 38 Regional: 5 Recreational: 11 Conservation: 20 Neighborhood Conservation Areas: 40 Recreation/non-recreation facilities: 6</p> <p>Park Facilities Event Centers: 5 Lakes: 4 Boating Facilities: 2 Paved Trails: 73.5 miles Natural Surface Trails: 138.9 miles Campgrounds: 2 Formal Gardens: 2 Nature Centers: 4 Park Activity Buildings: 20 Permitted Picnic Shelters: 193 Historic Resources: 157 Playgrounds: 291 Maintenance Facilities: 10</p> <p>Urban: 27 Neighborhood: 95 Local: 149 Special: 25 Historical/Cultural: 2</p> <p>Ice Rinks: 2 Gymnasium: 1 Exercise Courses: 13 Tennis Centers Indoors: 2 Tennis Courts: 307 Athletic Fields: 299 Football/Soccer: 64 Basketball Courts: 207 Equestrian Centers: 6 Open Picnic Areas: 117 Miniature Trains: 2 Carousel: 1</p> | | |

Existing Measures
Programs and Projects Completed - Fiscal Years 2000 to June 2015

| Measures - Existing: (implemented from FY 2000 to FY 2015) | 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 2015 | \$485,000 est. | \$120,000 on Annual Service Costs | Electricity, Natural Gas, and Propane | 744,000 kWh, 45,600 therm & 6,100 Pounds | \$148,000 est. Annual Cost Avoidance |
| <u>Equipment Retrofit Projects</u> Includes MEA Grant in 2010 and DOE Grant in 2012 | FY 2000 to FY 2015 | \$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 2015 | \$140,000 est. | NA | Electricity and Natural Gas | 284,000 kWh & 21,000 therm | \$85,000 est. Annual Cost Avoidance |
| <u>Lighting Projects</u> Includes MEA Grant in 2010 and DOE Grant in 2012 | FY 2000 to FY 2015 | \$425,000 est. | NA | Electricity | 329,800 kWh | \$190,000 est. Annual Cost Avoidance |
| CIP Projects Sub-total | | \$1,171,000 est. | | | 1,548,000 kWh, 78,100 therm & 6,700 Pounds | \$470,600 est. Annual Cost Avoidance |
| Operations and Maintenance: | | | | | | |
| Operations and Maintenance Best Management Practice and Programs | FY 2000 to FY 2015 | \$412,500 | \$5,000 annual | Electricity, Natural Gas, and Propane | 743,000 kWh, 39,100 therm & 6,800 Pounds | \$149,000 est. Annual Cost Avoidance |
| Totals | | \$1,583,500 | | | 2,291,000 kWh, 117,200 therm & 13,500 pounds | \$619,600 est. Annual Cost Avoidance 2.5 yrs. ROI |

Resource Conservation Measures Fiscal Year 2016
Being Implemented 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 Projects Local & Non-Local | Entire Year | \$41,000 est. | \$3,000 on Annual Service Costs | Electricity, Natural Gas, and Propane | 90,000 kWh, 4,000 therm | \$10,000 est. Annual Cost Avoidance |
| Lighting Projects Local & Non-Local | Entire Year | \$76,000 est. | NA | Electricity, and Natural Gas | 160,000 kWh | \$18,000 est. Annual Cost Avoidance |
| CIP Projects Sub-total | | \$117,000 | \$3,000 | | | \$28,000 |
| Operations and Maintenance: | | | | | | |
| Best Management Practices & Sustainability Programs | Entire Year | \$24,400 | NA | Electricity, Natural Gas, and Propane | 21,000 kWh, 400 therm | \$3,000 Annual Cost Avoidance |
| Operations and Maintenance Improvement Programs | Entire Year | \$20,000 | NA | Electricity, Natural Gas, and Propane | 9,000 kWh, 300 therm & 100 Pounds | \$3,000 est. Annual Cost Avoidance |
| O&M Total | | \$44,400 | NA | | | \$6,000 |
| Totals | | \$161,400 | \$3,000 | | | \$34,000 4.7 yr. ROI |

Planned Resource Conservation Measures Fiscal Year 2017
July 1, 2016 through June 30, 2017

| <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 | \$26,000 est. | \$2,000 on Annual Service Costs | Electricity, Natural Gas, and Propane | 20,000 kWh, 2,000 therm | \$4,000 est. Annual Cost Avoidance |
| Lighting Projects- Local & Non-Local | Entire Year | \$52,000 est. | NA | Electricity | 55,000 kWh | \$15,000 est. Annual Cost Avoidance |
| CIP Projects Sub-total | | \$77,000 | \$5,000 | | | \$19,000 |
| Operations and Maintenance | | | | | | |
| Best Management Practices and Sustainability Programs | Entire Year | \$25,300 | NA | Electricity, Natural Gas, and Propane | 22,000 kWh, 500 therm & 100 Pounds | \$3,000 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 | \$2,000 est. Annual Cost Avoidance |
| O&M Total | | \$45,300 | NA | | | \$5,600 |
| Totals | | \$122,300 | \$5,000 | | | \$24,600 5.0 yrs. ROI |