T&E COMMITTEE #3
April 7, 2014

Worksession

MEMORANDUM

April 4, 2014

TO: Transportation, Infrastructure, Energy & Environment Committee

FROM: Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Worksession: FY15 Operating Budget**: Utilities Non-Departmental Account (NDA)

Council Staff recommends approval of the Utilities NDA as recommended by the County Executive.

Council Staff also recommends that, after budget, the T&E Committee discuss:

- **County Government energy procurement approaches**
- **Environmental sustainability efforts, benchmarking, and reporting requirements across all agencies.**

NOTE: Agency utility budgets could be revised, depending on Council action on the Energy Tax.

Attachments to this Memorandum

- County Executive's FY15 Recommended Budget Section for Utilities (©1-7)
- Memorandum: Transfer of Appropriation for Energy Efficiency Project (©8)
- Resolution 17-762 Excerpt: Paragraph 67 (payment of financing costs for ESCO projects) (©9)
- List of New Construction Projects by Utility Type – DGS (©10-11)
- Excerpts from Agency Resource Conservation Plans and Other Documents
  - Montgomery College: ©12-14
  - Montgomery County Public Schools (MCPS): ©15-27
  - Maryland-National Park and Planning Commission (M-NCPPC): ©28-40
  - Washington Suburban Sanitary Commission (WSSC): ©41-49

Meeting Participants Include:

Department of General Services

- David Dise, Director
- Greg Ossont, Deputy Director
- Beryl Feinberg, Deputy Director
- Ernie Lunsford, Chief – Building Design and Construction
- Richard Jackson, Chief – Facilities Maintenance
- Eric Coffman, Chief – Office of Energy and Sustainability

Outside Agencies

- Sean Gallagher, Assistant Director, Department of Facilities Management, Montgomery County Public Schools
- James Poore, Division Chief, Facilities Management Division, Maryland-National Capital Park and Planning Commission
- Michael Whitcomb, Energy Manager, Central Facilities, Montgomery College
- Rob Taylor, Energy Manager, Washington Suburban Sanitary Commission

Background

As part of the annual Operating Budget review process, the Council reviews utility costs across all agencies and policy issues associated with utility[1] costs. This review covers utility costs for electricity, natural gas, water & sewer, fuel oil, and propane for the County Government, the College, MCPS, M-NCPPC, and the entire bi-County area of WSSC.

Utility costs associated with County Government General Fund departments are included in the Utilities Non-Departmental Account. Utility costs associated with Tax and Non-Tax Supported Special Funds, as well as with the outside agencies, are budgeted separately in each of those funds and agencies. The "Utilities" section from the Recommended Operating Budget is attached on ©1-7.

Agency representatives meet periodically through the Interagency Committee on Energy and Utilities Management (ICEUM) to discuss energy issues. Given the volatility of energy and fuel prices, and the unique circumstances of each agency in terms of its short- and long-term contracting practices for energy, adopting specific rates applicable to all agencies is not feasible. Each agency develops its own energy budget based on assumptions specific to that agency.

Utility budgets are based on rate assumptions as well as on projected changes in energy consumption at existing facilities and estimated energy requirements for new facilities coming on-line during FY15. Energy efficiency measures are taken into account as well. It is important to note that energy use is also greatly affected by the severity of weather conditions in a given year. The utilities budgets presented here assume a typical weather year.

The outside agency and County Government resource conservation plans are in varying stages of completion. Excerpts from three draft plans (MCPS, M-NCPPC, and WSSC) are attached. Other agency materials are attached as well. Council Staff suggests that a more detailed review of these plans (as well as other related plans under development by the agencies[2]) be done by T&E after budget. Agency staff will be available at the T&E meeting to provide their perspectives on their agency's energy procurement experience and energy conservation and retrofit work.

[1] Motor fuel costs are not included in the numbers presented in this memorandum. General Fund costs for motor fuels are budgeted in the Department of General Services-Division of Fleet Management Services. Motor fuel costs are also included in the various special funds and outside agency budgets.

[2] WSSC is developing a 10 year Strategic Energy Plan that should be completed by July, 2014. MCPS is finalizing an Environmental Sustainability Management Plan for transmittal to the Board of Education within the next few weeks.

Fiscal Summary
(All Agencies)

The FY15 budgets for utilities by agency as presented in the County Executive's FY15 Recommended Budget are summarized below. *NOTE: In several cases, agency staff have noted some discrepancies in the numbers included for their agencies in the County Executive's Recommended Budget.*

Table 1:
Utility Costs by Agency

	Actual	Approved	Approved	CE Rec	Change (FY15 vs. FY14)	
Agency	FY12	FY13	FY14	FY15	$$	%
County Government	36,069,997	33,664,982	34,598,984	34,221,564	(377,420)	-1.1%
MCPS	41,687,370	38,315,819	36,792,003	35,692,609	(1,099,394)	-3.0%
Montgomery College	8,467,370	6,560,471	7,096,728	7,613,648	516,920	7.3%
WSSC	25,644,000	24,582,052	23,910,000	23,246,536	(663,464)	-2.8%
M-NCPPC	4,018,250	3,830,300	5,388,300	3,951,897	(1,436,403)	-26.7%
Total	**115,886,987**	**106,953,624**	**107,786,015**	**104,726,254**	**(3,059,761)**	**-2.8%**

Overall, utility costs are recommended to decrease by $3.1 million (-2.8 percent). However, the trends vary greatly by agency, with M-NCPPC projecting a large decrease (26.7 percent), MCPS, County Government, and WSSC showing small decreases, and Montgomery College showing an increase (7.3 percent).[3]

Montgomery College's increase is the result of the scheduled opening of the Germantown Bioscience Education Center this fall (145,000 gross square feet; estimated energy cost of $448,300) and a 2.5 percent projected increase in electricity costs and increases in other fuel categories as well (total increase of $250,232). *NOTE: Montgomery College staff are using an Approved FY14 total cost of $7,139,046, which results in a smaller increase between FY14 and FY15.*

M-NCPPC staff noted that its fluctuations have been the result of several factors, including: weather fluctuations which can dramatically affect water usage in Parks, as well as significant cost decreases in energy unit costs in FY13 followed by substantial increases in energy unit costs in FY14.

Agency staff will be available at the T&E meeting to elaborate on their agency's specific cost and usage trends.

The following chart presents utility costs by type.

Table 2:
Utility Costs by Type (All Agencies)

	Actual	Approved	Actual	Approved	CE Rec	FY15	Change (FY15 vs. FY14)	
Type of Utility	FY12	FY13	FY13	FY14	FY15	% of Total	$$	%
Electricity	94,921,239	87,036,454	81,373,607	87,927,180	85,598,421	81.7%	(2,328,759)	-2.6%
Water and Sewer	6,933,850	7,597,771	6,596,903	7,015,301	7,270,576	6.9%	255,275	3.6%
Fuel Oil	537,903	1,074,780	453,420	2,023,151	561,100	0.5%	(1,462,051)	-72.3%
Natural Gas	13,168,338	11,481,609	9,831,287	10,473,847	10,972,661	10.5%	498,814	4.8%
Propane	325,657	318,410	249,992	346,536	323,496	0.3%	(23,040)	-6.6%
Total	**115,886,987**	**107,509,024**	**98,505,209**	**107,786,015**	**104,726,254**	**100.0%**	**(3,059,761)**	**-2.8%**

[3] Comparisons between agencies are problematic, given the differences in each agency's energy usage profile, differing opportunities to achieve energy savings, and energy purchasing processes. Comparing a particular agency over time is a fairer measure of progress.

As in past years, electricity costs (81.7 percent of the total) and natural gas costs (10.5 percent of the total) account for the bulk of all utility costs. Across all agencies, electricity costs from FY14 approved levels are projected to decrease, while natural gas costs are projected to increase. Water and sewer expenditures are also projected to increase from approved levels.

Fiscal Summary:
(General Fund Non-Departmental Account)

The County owns, operates, and/or maintains 412 facilities totaling 9,687,923 square feet. The Department of General Services manages the payment for 770 separately metered utility accounts for these facilities. The Utilities NDA budget funds 447 of these accounts, in addition to 68,426 streetlights and 822 traffic-controlled signalized intersections.

For the General Fund NDA (which accounts for the tax-supported General Fund portion of the County Government's utility costs), utilities are recommended to increase by about $367,000 (or 1.4 percent), as shown in the following chart.

Table 3:
NDA Utility Costs by Type (General Fund Only)

	Actual	Approved	Actual	Approved	CE Rec	FY15	Change (FY15 vs. FY14)	
Type of Utility	FY12	FY13	FY13	FY14	FY15	% of Total	$$	%
Electricity	23,761,843	22,630,630	19,560,557	22,113,482	22,320,160	85.6%	206,678	0.9%
Water and Sewer	1,520,404	2,090,500	1,528,193	1,831,663	1,676,271	6.4%	(155,392)	-8.5%
Fuel Oil	109,726	210,000	83,127	210,000	210,000	0.8%	-	0.0%
Natural Gas	1,303,010	1,168,730	1,478,902	1,481,502	1,797,702	6.9%	316,200	21.3%
Propane	20,424	60,000	29,669	60,000	60,000	0.2%	-	0.0%
Total	**26,715,407**	**26,159,860**	**22,680,448**	**25,696,647**	**26,064,133**	**100.0%**	**367,486**	**1.4%**

Electricity (which makes up 85.6 percent of all expenditures) and natural gas (which makes up 6.9% of all expenditures) are both up (.9 percent and 21.3 percent respectively).

Interestingly, the FY13 actuals were about $3.5 million (13.3 percent) below the FY13 Approved Budget. The FY14 budget number is about 1.8 percent below the FY13 Approved Budget but is 13.3 percent above the FY13 actual. The FY15 Recommended Budget is 1.4% above the FY14 Approved but is almost 15 percent above the FY13 actual. It would be helpful to hear from DGS about the FY13 actual being much lower than budget, what trends DGS is seeing in FY14, and what the implications are for FY15.

The Executive's Recommended Budget provides a crosswalk from FY14 to FY15 (see chart at the bottom of the page on ©4). The major changes include:

- $387,431 decrease in streetlight utilities: Council Staff has asked DGS for more information on these savings.

- $695,008 increase for new and renovated buildings in FY15: DGS provided detail sheets (see ©10-11) breaking out the square footage, estimated energy usage, and costs for DGS' new construction projects.

- $219,693 increase in costs based on estimated consumption and unit costs: These savings are based on preliminary 3rd quarter analysis for FY14 and an extrapolation of the impact on the FY15 base budget as a result.

- $159,784 in cost savings from ESCO contracts. This savings is related to the retrofit work done

at 401 Hungerford Drive and was provided by the ESCO contractor Johnson Controls.[4]

Discussion

Clean Energy Procurement

The County's Energy Policy (established under Resolution 16-757 in October 2008) called for the County to achieve 20 percent or more of its energy portfolio from clean energy purchases by 2011, which all of the County agencies achieved. For the last several years, County Government has achieved a 30 percent level of clean energy purchases, which it plans to achieve in FY14 and FY15 as well. Montgomery College and MCPS both are assuming to meet the 20 percent goal each year. M-NCPPC is at 30 percent, with a goal to go to 40 percent by 2020. WSSC purchases about 30% of its power through a direct purchase agreement with a wind power supplier.

On January 28, Councilmember Berliner introduced a package of environmental bills. Included in this package is Bill 9-14, Environmental Sustainability - Renewable Energy County Purchase. This bill would require County Government to achieve 50 percent of its energy portfolio from clean energy purchases by 2015 and 100 percent by 2020. According to Executive staff, the fiscal impact from increasing from 30 percent to 50 percent in FY15 would be about $48,500. The fiscal impact to go up to 100 percent in FY15 would be an additional $121,000.

If the outside agencies were to correspondingly increase their clean energy purchases as well, then the volume of purchases would increase substantially, as would the fiscal impact.

The T&E Committee discussed this bill on February 26 and expressed support for the bill. Council action is scheduled for April 22.

Electricity and Natural Gas Procurement for County Government

As noted last year, the County has a fixed price electricity procurement contract in place through January 2015. The County manages 1,013 electricity accounts, of which 695 are streetlights or traffic signals.

Last year, the Committee agreed that during this current fixed price period, DGS should consider different electricity purchasing options that County Government could adopt in the future and how these would compare in cost and operation to the current fixed price approach of the County. The Committee was particularly interested in the potential for cooperative energy purchasing, as well as wholesale block purchasing (which MCPS and WSSC utilize). DGS provided the following information on its work to date:

> *DGS has been actively reviewing opportunities to procure power at the most cost-effective and environmentally sustainable manner possible. This includes evaluating the benefits of procuring energy supply via full requirement/fixed price contracts, block purchasing, and other hedging*

[4]In February, an FY14 transfer of $17,782.20 from the Utilities NDA to the Debt Service Fund was processed to cover financing costs associated with the energy retrofit work at 401 Hungerford Drive. This transfer is consistent with the FY14 County Government Appropriation Resolution (Paragraph 67), which allows transfers to the Debt Service Fund to cover the financing of energy-related equipment where the energy savings are guaranteed by an energy services contract and the savings are equal to or greater than the debt service costs.

strategies. Block purchasing would expose the County to the benefits and risks of the wholesale electricity market.

A more comprehensive review will be included as part of the DGS utility purchasing strategy. However, there are certain issues to resolve/implement before pursuing a block energy purchasing strategy.

A. Organizations that are successful in purchasing utilities via block/trade have optimized their energy management strategies to reduce consumption and demand. DGS is enhancing its management strategies to reduce consumption through energy efficiency projects (e.g., energy performance contracting), reducing demand through expansions of energy management systems and demand response programs. In addition, DGS is reviewing proposals to identify a vendor to provide on-site solar at fixed rates and onsite combined heat and power (CHP), reducing the amount of energy the County would need to procure via wholesale markets. Collectively, these activities would provide the County tools to control consumption when energy prices are high, reducing the risk of volatile power markets.

B. Data on whether the County would benefit, based on comparable organizations is not readily available. Most municipal/government organizations in the DC metro area are currently purchasing electricity via fixed contracts.

C. Recent energy market events raise risk concerns where electricity costs are exposed to wholesale markets. During the winter of 2013/2014 the Eastern seaboard experienced record electricity demand. Electricity on the regional grid (PJM) exceeded six times its nominal day-ahead price. These variations contributed to the failure of one Montgomery County based competitive energy supplier (Clean Currents). If the County had been purchasing electricity via the wholesale market, the County could have experienced significant budget implications. DGS is seeking data from other organizations, with block purchasing arrangements to evaluate the risk of budget impact and what hedging strategy they would use in future years to minimize risk.

DGS will continue evaluating energy purchasing alternatives during the development of its utility purchasing strategy.

While there are some differences in purchasing practices, similar risks due to price volatility exist for natural gas purchases. DGS will continue to evaluate alternatives for purchasing natural gas as part of its purchasing strategy.

Council Staff recommends that the issue of County Government energy procurement be revisited by the T&E Committee after budget.

Fuel/Energy Tax Sunset Issue

In 2010, the Council approved a major increase to the Fuel/Energy Tax. The increase had been scheduled (by legislation) to sunset after FY12. However, the County Executive's FY13 Recommended Budget (including the NDA for Utilities) assumed the sunset did not occur in FY13. The Council ultimately approved an FY13 Energy Tax that included a 10 percent reduction off of the 2010 increase. A similar scenario in FY14 played out with the Executive recommending no change in the energy tax rate and the Council approving a 10 percent reduction off of the 2010 increase.

For FY15, the County Executive is again recommending no change in the energy tax rate and the agency utility budgets assume no change in the rate.

On April 1, the Council introduced legislation to again reduce the revenue received from the 2010 energy tax by up to 10 percent. If this reduction is approved, County revenue would be reduced by an estimated $11.5 million, although there would be some offsetting savings in agency utility budgets. Council Staff has asked the agencies (MCPS, Montgomery College, WSSC, and DGS) to provide an estimate of potential savings. According to agency staff, a savings of approximately $700,000 across all agencies would be realized.

Depending on the outcome of the energy tax legislation, agency energy budgets, County Government special funds, and the Utilities NDA could see some savings.

Energy Usage Trends

In past years, the Committee has discussed energy usage trends with agency staff during its discussion of the Utilities NDA budget. These trends have looked at agency energy consumption over time and at how the agencies compare to national averages.

This year, draft Resource Conservation Plans and other energy usage information came to County Staff too late for this kind of analysis as part of the Utilities budget review.

MCPS will be transmitting a new sustainability plan to the Board of Education in the near future that includes much of what is included in the current resource conservation plans. Additionally, with the potential for the passage of several energy-related bills in the near future, and the potential for the creation of sustainability offices in DGS and DEP, **a T&E Committee discussion of benchmarking and reporting (for energy as well as other sustainability-related issues) across all agencies would be worthwhile.**

County Government Facility Retrofits

DGS' ESCO pilot project (at 401 Hungerford Drive) will be substantially complete by the end of April 2014. This project involved a number of measures, including:

- *Replacement of interior and exterior lighting fixtures*
- *Installation of lighting occupancy sensors*
- *Replacement of restroom fixtures*
- *Building weatherization*
- *Transformer replacements*
- *Chiller replacement*
- *Installation of variable flow chilled water*
- *Replacement of chilled water pump motors*
- *Installation of Variable Frequency Drives on Cooling Tower*
- *Refurbishment of Air Handler Units (AHU) and re-commissioning of Variable Air Volume (VAV) boxes*
- *Installation of gas-fired Boilers and conversion of VAV boxes to hot water*
- *Extension of Generator stacks*

- *Installation of sub-meter for Cooling Tower make-up water*
- *Replacement of exhaust fans*

A number of other smaller projects also underway in FY14 include:

1. *1301 Piccard Outdoor lighting: Savings 4,160 KWH (times hours of operation ~ 16 hours * 65 days). Project cost: $54,750.00 which includes addition of 4 newly pole-mounted lights to upgrade safety and night-time security.*
2. *Fire & Rescue Apparatus Repair Shop: (annual) Savings 39,092 KWH, $8,120.00, Project cost: $56,119.25 – Conversion of 170 6-CFL hi-bay fixtures to induction bulb.*
3. *Shriver Aquatics (Indoor swim center): (annual) Savings 200,688 KWH, $33,406.74, Project cost: $43,519.50 – Conversion of 51 1000/400W HID fixtures to induction bulb and replacing 4 non-operable staircase fixtures to LED.*
4. *Germantown Library: (annual) Savings 119,468 KWH, $20,371.58, Project cost: $59,854.34 – Upgrading of 42 hi-bay 400 watt high intensity discharge (HID) fixtures to induction bulb, replacing 90 of non-operable fixtures & adding controls for "day-light" harvesting*
5. *Blackrock Center for Arts: (annual) Savings 37,408 KWH, $6,179.71, Project cost $30,383.00 – Replacement of 22 theatre (non-reachable) ceiling fixtures and conversion of 128 incandescent and CFL fixtures to LED.*
6. *White Oak Library chiller replacement cost is $99,954.88. Estimated kW savings 4,079, estimated kWh savings 17,725*
7. *Chevy Chase Library chiller replacement cost is $154,177.80. Estimated kW savings 4,079, estimated kWh savings 17,725*

Future projects in FY15 and beyond are intended to be done via the ESCO model either as stand-alone projects or batched with other projects. These projects include:

1. ***Council Office Building***
2. ***1301 Piccard Drive***
3. ***Pre-Release Center***
   Longwood CRC
4. ***MLK Pool***
   Twinbrook Library
   Kensington Park Library
5. ***Olney Pool***
   Holiday Park Senior Center
   Quince Orchard Library
6. ***8818 Georgia Avenue***
7. ***Shriver Aquatic Center***
   Davis Library
   Bushey Drive Rec Headquarters
8. ***Strathmore Hall***
9. ***Upper County Region Services Center***
   White Oak Library
   Potomac Community Center
10. ***Red Brick Courthouse***
    Chevy Chase Library
    Lawton Community Center
11. ***PSHQ***
12. ***Grey Brick Courthouse***
    Little Falls Library
    Coffield CRC
13. ***Germantown Library***
    Long Branch CRC
    5th District Police Station

The financing costs for these projects (up to $5 million) can be paid out of the Utilities NDA per the conditions noted in Paragraph 67 of the FY14 County Government Appropriation Resolution (see ©9). The 401 Hungerford ESCO was the first project to involve such a payment (see ©8).

Council Staff is supportive of including Paragraph 67 in the FY15 and future appropriation resolution documents.

Council Staff Recommendations

Accurately predicting energy costs from year to year is problematic given the many moving parts (unit costs for energy, changes in gross square feet of conditioned space, aging of equipment and buildings, the impacts of energy conservation efforts and retrofit projects, and major changes in weather conditions). While additional information and reporting from DGS and DOT would be helpful here, Council Staff is not in a position to confirm whether the County Executive's recommended funding level for the Utilities NDA is the "correct" amount to budget or not.

However, since the Utilities NDA is the subject of a direct appropriation, the Council is assured that the funding approved for this NDA is going for energy procurement or for the financing of ESCO projects. Excess funding (if any) will revert to General Fund balance. Assuming DGS is successful in the implementation of many more ESCO projects, the amount of dollars transferred out of the NDA for that purpose will rise and County energy usage (and costs paid out of the NDA to purchase energy) will decline.

Council Staff recommends approval of the Utilities NDA as recommended by the County Executive.

Council Staff also recommends that, after budget, the T&E Committee discuss:

- **County Government energy procurement approaches**
- **Environmental sustainability efforts, benchmarking, and reporting requirements across all agencies.**

Attachments

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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 412 facilities totaling 9,687,923 square feet. The Department of General Services manages the payment for 770 separately metered utility accounts for these facilities. The Utilities non-departmental account (NDA) budget funds 447 of these accounts, in addition to 68,426 streetlights, and 822 traffic-controlled signalized intersections.

BUDGET OVERVIEW

The FY15 Recommended Budget for the tax-supported Utilities NDA is $26,064,133, an increase of $367,486 or 1.4 percent above the FY14 Approved Budget of $25,696,647. Allocation of these utilities expenditures is approximately: electricity, 85.6 percent; natural gas, 6.9 percent; water and sewer, 6.4 percent; fuel oil, 0.8 percent, and propane, 0.2 percent.

The FY15 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 $70,504,690 which includes the entire bi-county area of WSSC.

The FY15 Recommended tax-supported budget for Utilities Management, including both the General Fund NDA ($26,064,133) and the other tax supported funds ($2,831,872), is $28,896,005, an increase of $367,486 or approximately 1.3 percent above the FY14 Approved utilities budget. The FY15 Recommended Budget for non-tax supported utilities expenditures is $5,325,559, a decrease of $744,906 or 12.3 percent under the FY14 Approved Budget.

In both the tax and non-tax supported funds, 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; decreases in utility expenditures result primarily from reductions in consumption. 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 FY15 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 Erika Lopez-Finn of the Office of Management and Budget at 240.777.2771 for more information regarding this department's operating budget.

PROGRAM DESCRIPTIONS

Utilities (for All General Fund Departments)

The Utilities non-departmental account provides the General Fund utilities operating expense appropriations for the facilities maintained by the Department of General Services and the Department of Transportation. The utilities expenditures for other non-tax supported operations and other agencies are appropriated within their respective department or agency.

BUDGET SUMMARY

	Actual FY13	Budget FY14	Estimated FY14	Recommended FY15	% 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	22,680,448	25,696,647	25,676,960	26,064,133	1.4%
Capital Outlay	0	0	0	0	—
County General Fund Expenditures	***22,680,448***	***25,696,647***	***25,676,960***	***26,064,133***	***1.4%***
PERSONNEL					
Full-Time	0	0	0	0	—
Part-Time	0	0	0	0	—
FTEs	0.00	0.00	0.00	0.00	—
GRANT FUND MCG					
EXPENDITURES					
Salaries and Wages	0	0	0	0	—
Employee Benefits	0	0	0	0	—
Grant Fund MCG Personnel Costs	***0***	***0***	***0***	***0***	—
Operating Expenses	0	0	0	0	—
Capital Outlay	0	0	0	0	—
Grant Fund MCG Expenditures	***0***	***0***	***0***	***0***	—
PERSONNEL					
Full-Time	0	0	0	0	—
Part-Time	0	0	0	0	—
FTEs	0.00	0.00	0.00	0.00	—
DEPARTMENT TOTALS					
Total Expenditures	**22,680,448**	**25,696,647**	**25,676,960**	**26,064,133**	**1.4%**
Total Full-Time Positions	**0**	**0**	**0**	**0**	—
Total Part-Time Positions	***0***	***0***	***0***	***0***	—
Total FTEs	***0.00***	***0.00***	***0.00***	***0.00***	—
Total Revenues	***0***	***0***	***0***	***0***	—

FY15 RECOMMENDED CHANGES

	Expenditures	FTEs
COUNTY GENERAL FUND		
FY14 ORIGINAL APPROPRIATION	**25,696,647**	**0.00**
Other Adjustments (with no service impacts)		
Increase Cost: Utility costs for new and renovated buildings	695,008	0.00
Increase Cost: Estimated consumption and unit costs	219,693	0.00
Decrease Cost: ESCO contract utility savings	-159,784	0.00
Decrease Cost: Streetlight utilities	-387,431	0.00
FY15 RECOMMENDED:	**26,064,133**	**0.00**

FUTURE FISCAL IMPACTS

Title	CE REC. FY15	FY16	FY17	($000's) FY18	FY19	FY20
This table is intended to present significant future fiscal impacts of the department's programs.						
COUNTY GENERAL FUND						
Expenditures						
FY15 Recommended	**26,064**	**26,064**	**26,064**	**26,064**	**26,064**	**26,064**
No inflation or compensation change is included in outyear projections.						
Subtotal Expenditures	***26,064***	***26,064***	***26,064***	***26,064***	***26,064***	***26,064***

COUNTY UTILITIES EXPENDITURES

EXPENDITURES BY DEPARTMENT/AGENCY

	ACTUAL FY12	ACTUAL FY13	APPROVED FY14	RECOMMENDED FY15	CHANGE BUD/APPR	% CHANGE REC/APPR
COUNTY GOVERNMENT TAX SUPPORTED OPERATIONS						
NON-DEPARTMENTAL ACCOUNT						
Facilities	17,102,414	13,487,035	15,136,684	15,891,601	754,917	5.0%
Traffic Signals and Streetlighting	9,612,993	9,193,413	10,559,963	10,172,532	(387,431)	-3.7%
GENERAL FUND NDA EXPENDITURES	26,715,407	22,680,448	25,696,647	26,064,133	367,486	1.4%
OTHER TAX SUPPORTED OPERATIONS						
Transit Services	90,394	73,694	91,730	91,730	0	0.0%
Recreation	3,382,220	2,755,137	2,740,142	2,740,142	0	0.0%
SUBTOTAL	3,472,614	2,828,831	2,831,872	2,831,872	0	0.0%
TOTAL TAX SUPPORTED	30,188,021	25,509,279	28,528,519	28,896,005	367,486	1.3%
COUNTY GOVERNMENT NON-TAX SUPPORTED OPERATIONS						
Fleet Management Services	1,288,141	1,069,366	1,630,392	1,630,392	0	0.0%
Parking Districts	3,513,100	2,183,187	3,120,058	2,598,489	(521,569)	-16.7%
Liquor Control	950,804	852,105	1,093,810	865,810	(228,000)	-20.8%
Solid Waste Services	129,931	132,380	226,205	230,868	4,663	2.1%
TOTAL NON-TAX SUPPORTED	5,881,976	4,237,038	6,070,465	5,325,559	(744,906)	-12.3%
SUMMARY - COUNTY GOVERNMENT						
TOTAL TAX SUPPORTED	30,188,021	25,509,279	28,528,519	28,896,005	367,486	1.3%
TOTAL NON-TAX SUPPORTED	5,881,976	4,237,038	6,070,465	5,325,559	(744,906)	-12.3%
TOTAL COUNTY GOVERNMENT	36,069,997	29,746,317	34,598,984	34,221,564	(377,420)	-1.1%
OUTSIDE AGENCIES TAX AND NON-TAX SUPPORTED OPERATIONS						
Montgomery County Public Schools	41,687,370	35,779,753	36,792,003	35,692,609	(1,523,816)	-3.0%
Montgomery College	8,467,370	7,096,728	7,096,728	7,613,648	536,257	7.3%
Washington Suburban Sanitary Commission	25,644,000	23,062,585	23,910,000	23,246,536	(672,052)	-2.8%
M-NCPPC	4,018,250	2,819,826	5,388,300	3,951,897	1,558,000	-26.7%
TOTAL OTHER AGENCIES EXPENDITURES	79,816,990	68,758,892	73,187,031	70,504,690	(101,611)	-3.7%
TOTAL UTILITIES EXPENDITURES	115,886,987	98,505,209	107,786,015	104,726,254	(479,031)	-2.8%

COUNTY UTILITIES EXPENDITURES

EXPENDITURES BY ENERGY SOURCE

	ACTUAL FY12	BUDGET FY13	APPROVED FY14	RECOMMENDED FY15	CHANGE BUDGET/REC	% CHANGE BUDGET/REC
COUNTY GOVERNMENT TAX SUPPORTED OPERATIONS						
NON-DEPARTMENTAL ACCOUNT						
Electricity	23,761,843	19,560,557	22,113,482	22,320,160	206,678	0.9%
Water & Sewer	1,520,404	1,528,193	1,831,663	1,676,271	(155,392)	-8.5%
Fuel Oil	109,726	83,127	210,000	210,000	0	0.0%
Natural Gas	1,303,010	1,478,902	1,481,502	1,797,702	316,200	21.3%
Propane	20,424	29,669	60,000	60,000	0	0.0%
GENERAL FUND NDA EXPENDITURES	26,715,407	22,680,448	25,696,647	26,064,133	367,486	1.4%
OTHER TAX SUPPORTED OPERATIONS						
Electricity	2,462,135	1,805,671	1,832,172	1,832,172	0	0.0%
Water & Sewer	519,967	472,923	360,090	360,090	0	0.0%
Fuel Oil	12,007	81,133	0	0	0	0.0%
Natural Gas	450,172	437,411	639,610	639,610	0	0.0%
Propane	28,333	31,693	0	0	0	0.0%
SUBTOTAL	3,472,614	2,828,831	2,831,872	2,831,872	0	0.0%
TOTAL TAX SUPPORTED	30,188,021	25,509,279	28,528,519	28,896,005	367,486	1.3%
NON-TAX SUPPORTED OPERATIONS						
Electricity	5,447,371	3,762,544	5,394,024	4,685,740	(708,284)	-13.1%
Water & Sewer	103,449	99,596	223,212	186,590	(36,622)	-16.4%
Fuel Oil	2,670	0	0	0	0	0.0%
Natural Gas	328,486	374,898	452,189	452,189	0	0.0%
Propane	0	0	1,040	1,040	0	0.0%
TOTAL NON-TAX SUPPORTED	5,881,976	4,237,038	6,070,465	5,325,559	(744,906)	-12.3%
SUMMARY - COUNTY GOVERNMENT						
Electricity	31,671,349	25,128,772	29,339,678	28,838,072	(501,606)	-1.7%
Water & Sewer	2,143,820	2,100,712	2,414,965	2,222,951	(192,014)	-8.0%
Fuel Oil	124,403	164,260	210,000	210,000	0	0.0%
Natural Gas	2,081,668	2,291,211	2,573,301	2,889,501	316,200	12.3%
Propane	48,757	61,362	61,040	61,040	0	0.0%
TOTAL COUNTY GOVERNMENT	36,069,997	29,746,317	34,598,984	34,221,564	(377,420)	-1.1%
OUTSIDE AGENCIES TAX AND NON-TAX SUPPORTED OPERATIONS						
Electricity	63,249,890	56,244,835	58,587,502	56,760,349	(1,827,153)	-3.1%
Water & Sewer	4,790,030	4,496,191	4,600,336	5,047,625	447,289	9.7%
Fuel Oil	413,500	289,160	1,813,151	351,100	(1,462,051)	-80.6%
Natural Gas	11,086,670	7,540,076	7,900,546	8,083,160	182,614	2.3%
Propane	276,900	188,630	285,496	262,456	(23,040)	-8.1%
SUBTOTAL	79,816,990	68,758,892	73,187,031	70,504,690	(2,682,341)	-3.7%
TOTAL UTILITIES EXPENDITURES						
Electricity	94,921,239	81,373,607	87,927,180	85,598,421	(2,328,759)	-2.6%
Water & Sewer	6,933,850	6,596,903	7,015,301	7,270,576	255,275	3.6%
Fuel Oil	537,903	453,420	2,023,151	561,100	(1,462,051)	-72.3%
Natural Gas	13,168,338	9,831,287	10,473,847	10,972,661	498,814	4.8%
Propane	325,657	249,992	346,536	323,496	(23,040)	-6.6%
TOTAL UTILITIES EXPENDITURES	115,886,987	98,505,209	107,786,015	104,726,254	(3,059,761)	-2.8%

ENV & ENERGY

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DEPARTMENT OF FINANCE

Isiah Leggett
County Executive

Joseph F. Beach
Director

MEMORANDUM

March 13, 2014

TO: Craig Rice, President
Montgomery County Council

FROM: Joseph F. Beach, Director
Department of Finance

SUBJECT: Transfer of Appropriation for Energy Efficiency Project

RECEIVED
MONTGOMERY COUNTY
2014 MAR 14 AM 9:27

This memorandum is notice to the County Council, pursuant to Paragraph #67 of Council Resolution 17-762, Approval and Appropriation for the FY2014 Operating Budget of Montgomery County Government. On February 25, 2014 the County Government transferred $17,782.20 from the Utilities Non Departmental Account to the Debt Service Fund in order to pay outstanding principal and interest for the financing of energy efficiency improvements at the County facility at 401 Hungerford in Rockville.

As required under the resolution, this payment did not require any new FY14 tax supported appropriation and the annual utility savings are at least equal to the annual debt service costs.

Let me know if you need additional information concerning this matter.

copies
Bonnie Kirkland, Assistant Chief Administrative Officer
David Dise, Director, Department of General Services

Resolution 17-762: Approval of and Appropriation for the FY 2014 Operating Budget of the Montgomery County Government

Paragraph 67

This resolution appropriates $25,696,647 to the Utilities Non-Departmental Account (NDA) for the cost of electricity, natural gas, and other energy-related operating costs. If 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 NDA to the Debt Service Funds 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 2014 tax-supported appropriation or future tax-supported funds.

(b) The annual savings provided under the Energy Services Agreement are guaranteed by the Energy Services Company that the County contracts with and the annual savings are equal to or greater than the annual debt service costs related to the capital renovations.

(c) The Executive must notify the Council in writing within 30 after each transfer.

New Construction Projects by Utility Type - DGS

ELECTRICITY	Net Area (Sq. Ft.)	Energy Use (kWh/SqFt)	Occupied Year	FY	FY14 PrRte factor	FY15 PrRte factor	FY 2014 Change (KwH)	FY 2015 Change (KwH)
Gaithersburg Library	20,000	18.00	12/22/2013	FY14	6/12	6/12	180,000	180,000
Olney Library Renovation and Addition-Construction	4,260	18.00	1/15/2014	FY14	5/12	7/12	31,950	44,730
Animal Services and Adoption Center	34,365	32.00	12/7/2013	FY14	7/12	5/12	641,480	458,200
Wheaton Volunteer Rescue Squad,	29,000	25.00	11/15/2013	FY14	8/12	4/12	483,333	241,667
3rd District Police Station	14,226	25.00	2/7/2014	FY14	5/12	7/12	148,188	207,463
Travilah Fire Station #32	26,000	25.00	2/5/2014	FY14	5/12	7/12	270,833	379,167
Kensington Fire Station # 25 Additions	12,000	25.00	1/12/2014	FY14	5/12	7/12	125,000	175,000
Clarksburg Fire Station (deferred)	22,640	25.00	3/1/2014	FY14	0/12	0/12	0	0
Scotland Neighborhood Recreation Center	7,315	19.00	8/10/2014	FY15	0/12	10/12	0	115,821
Judicial Center Annex	203,000	20.00	3/18/2014	FY14	4/12	8/12	1,353,333	2,706,667
Silver Spring Library	63,327	18.00	12/3/2014	FY15	0/12	6/12	0	569,943
Plum Gar	*8,764*	19.00	10/30/2013	FY14	9/12	3/12	124,887	41,629
SubTotal	**444,897**						**3,359,005**	**5,120,285**

NATURAL GAS	Net Area (Sq. Ft.)	Therms/Ft2 ESTIMATED	Occupied Year	FY	FY14 PrRte factor	FY15 PrRte factor	FY 2014 New Usage (Therms)	FY 2015 New Usage (Therms)
Gaithersburg Library	20,000	0.48	12/22/2013	FY14	6/12	6/12	4,800	4,800
Olney Library Renovation and Addition-Construction	4,260	0.48	1/15/2014	FY14	5/12	7/12	852	1,193
Animal Services and Adoption Center	34,365	0.60	12/7/2013	FY14	7/12	5/12	12,028	8,591
Wheaton Volunteer Rescue Squad,	29,000	0.53	11/15/2013	FY14	8/12	4/12	10,247	5,123
3rd District Police Station	14,226	0.53	2/7/2014	FY14	5/12	7/12	3,142	4,398
Travilah Fire Station #32	26,000	0.53	2/5/2014	FY14	5/12	7/12	5,742	8,038
Kensington Fire Station # 25 Additions	12,000	0.53	1/12/2014	FY14	5/12	7/12	2,650	3,710
Clarksburg Fire Station (deferred)	22,640	0.53	3/1/2014	FY14	0/12	0/12	0	0
Scotland Neighborhood Recreation Center	7,315	0.50	8/10/2014	FY15	0/12	10/12	0	3,048
Judicial Center Annex	203,000	0.52	3/18/2014	FY14	4/12	8/12	35,187	70,373
Silver Spring Library	63,327	0.45	12/3/2014	FY15	0/12	6/12	0	14,249
Plum Gar	8,764	0.5	10/30/2013	FY14	9/12	3/12	3,287	1,096
SubTotal	**444,897**						**77,933**	**124,619**

WATER & SEWER	Net Area (Sq. Ft.)	KGal/Ft2 ESTIMATED	Occupied Year	FY	FY14 PrRte factor	FY15 PrRte factor	FY 2014 New Usage (kGal)	FY 2015 New Usage (kGal)
Gaithersburg Library	20,000	0.012	12/22/2013	FY14	6/12	6/12	120	120
Olney Library Renovation and Addition-Construction	4,260	0.012	1/15/2014	FY14	5/12	7/12	21	30
Animal Services and Adoption Center	34,365	0.025	12/7/2013	FY14	7/12	5/12	501	358
Wheaton Volunteer Rescue Squad,	29,000	0.020	11/15/2013	FY14	8/12	4/12	387	193
3rd District Police Station	14,226	0.020	11/15/2013	FY14	5/12	7/12	119	166
Travilah Fire Station #32	26,000	0.020	2/7/2014	FY14	5/12	7/12	217	303
Kensington Fire Station # 25 Additions	12,000	0.020	2/5/2014	FY14	5/12	7/12	100	140
Clarksburg Fire Station (deferred)	22,640	0.020	1/12/2014	FY14	0/12	0/12	0	0
Scotland Neighborhood Recreation Center	7,315	0.019	3/1/2014	FY15	0/12	10/12	0	0
Judicial Center Annex	203,000	0.015	8/10/2014	FY14	4/12	8/12	1,015	2,538
Silver Spring Library	63,327	0.017	3/18/2014	FY15	0/12	6/12	0	718
Plum Gar	8,764	0.019	10/30/2013	FY14	9/12	3/12	125	42
SubTotal	**444,897**						**2,604**	**4,608**

Montgomery College

Summary of New Buildings, Renovations & Projects – RCP 2015

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 1st floor, 2nd floor leased by Montgomery County
2007	TP/SS	The Morris and Gwendolyn Caftritz 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	39063	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(4)	TP/SS	Pavilion Three - Renovation	15,013	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 2015 (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	N/A	Lighting Replacement	Parking lot renovation & resurfacing. New lighting design using super pulse start metal halide lighting, replaces low pressure sodium lighting.
2014	RV	Science West Building – Renovation & Addition	41,988	BEPS & LEED Gold Targeted	Renovation & 3rd floor addition. Classrooms, computer laboratories, offices. Envelope, lighting, HVAC, 20 kW photovoltaic.
2014-2015	CW	Collegewide (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.
2014-2018	GT	Science & Applied Studies – Renovation & Addition	65,146+ 29,330	BEPS & LEED Gold Silver Targeted	Renovation of 2nd floor and addition. Classrooms, computer laboratories, dry laboratories & offices. Envelope, lighting, HVAC & evaluation of photovoltaic.
2014-2016	RV	North Garage - New	N/A	BEPS, LEED & Green Parking Targets	New 800+ space parking structure. Sustainable design, lighting, photovoltaic evaluation, & electric vehicle charging stations.
2014-2018	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. 2006 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.
   Science East Building construction started Winter 2012, completion scheduled for Winter 2014.
2. Lighting – A 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
Office of Central Facilities FY2015
Utility Projection Report
January 4, 2014

	ACTUAL FY 2005 (2)	ACTUAL FY 2006 (2)	ACTUAL FY 2007	ACTUAL FY 2008	ACTUAL FY 2009	ACTUAL FY2010 (9)	ACTUAL FY2011	ACTUAL FY2012	ACTUAL FY2013	PROJECTED FY2014	CONS.CHNG. FY14-15	UNIT.CHNG. FY14-15	PROJECTED FY2015 (1)
ELECTRICITY													
kWh	28,281,748	30,231,974	33,089,460	33,540,204	34,761,200	36,078,995	38,465,527	40,088,577	41,050,962	42,551,000	2,370,000	42,551,000	44,921,000
Cost($)	2,520,601	2,902,255	4,069,169	4,332,987	4,963,699	5,676,658	6,263,080	6,254,507	5,362,805	5,659,285	323,031	140,416	6,122,732
UNIT($/kWh)	0.0891	0.0960	0.1230	0.1292	0.1428	0.1573	0.1628	0.1560	0.1306	0.1330	0.1363	0.0033	0.1363
N.GAS(Firm)													
Therms(thm)	176,630	173,961	161,870	176,404	257,069	232,517	349,253	369,409	438,338	488,500	91,000	488,500	579,500
Cost($)	229,998	316,092	251,023	270,682	367,550	338,415	480,084	427,656	427,245	444,535	91,000	43,965	579,500
Unit($/therm)	1.302	1.82	1.55	1.53	1.43	1.46	1.37	1.16	0.97	0.91	1.00	0.09	1.00
N.GAS(Irate)													
Therms(thm)	440,090	440,205	435,747	411,052	442,200	425,119	393,165	384,121	371,190	380,000	0	380,000	380,000
Cost($)	473,948	707,298	618,717	579,337	564,648	537,805	523,477	362,790	312,933	301,240	0	25,560	326,800
Unit($/therm)	1.077	1.61	1.42	1.41	1.28	1.27	1.33	0.94	0.84	0.79	0.86	0.07	0.86
WATER													
kilogallons	18,926	27,070	28,000	29,164	29,795	29,184	32,889	39,546	34,333	35,333	2,000	35,333	37,333
Cost($)	58,871	77,419	87,252	98,299	119,029	136,169	185,050	262,548	240,856	266,330	16,233	20,452	303,015
Unit($/kgal)	3.11	2.86	3.12	3.37	3.99	4.67	5.63	6.64	7.02	7.54	8.12	0.58	8.12
SEWER													
kilogallons	11,869	19,663	21,306	24,075	23,523	23,024	26,184	29,665	24,105	25,105	2,000	25,105	27,105
Cost($)	58,709	89,802	101,894	122,585	128,733	132,631	166,029	200,955	184,392	206,528	18,034	19,839	244,401
Unit($/kgal)	4.95	4.57	4.78	5.09	5.47	5.76	6.34	6.77	7.65	8.23	9.02	0.79	9.02
NO.2 FUEL OIL													
Gallons(gal)	35,005	38,519	29,952	24,000	42,100	29,048	28,393	30,054	9,503	9,000	0	9,000	9,000
Cost($)	56,163	80,092	63,099	74,775	84,345	76,477	84,321	102,671	30,487.00	29,700.00	0	0.00	29,700
Unit($/gal)	1.60	2.08	2.11	3.12	2.00	2.63	2.97	3.42	3.21	3.30	3.21	0.00	3.30
PROPANE													
Gallons(gal)	2,637	2,954	2,569	2,687	2,575	2,249	2,817	1,964	2,452	2,500	0	2,500	2,500
Cost($)	8,124	9,410	6,235	9,504	8,510	6,854	9,527	7,086	7,341	7,500	0	0	7,500
Unit($/gal)	3.08	3.19	2.43	3.54	3.30	3.05	3.38	3.61	2.99	3.00	2.99	0.00	3.00
TOTAL COST($)	3,406,414	4,182,368	5,197,389	5,488,169	6,236,514	6,905,009	7,711,568	7,618,213	6,566,059	6,915,118	448,298	250,232	7,613,648
Wind Power	19,269	19,269	(3)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	N/A	N/A	(11)
Total Cost	3,425,683	4,201,637	5,197,389	5,488,169	6,236,514	6,905,009	7,711,568	7,618,213	6,566,059	6,915,118	448,298	250,232	7,613,648
Approved Budget	3,548,980	4,310,468	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
Suplus/(Deficit)	123,297	108,831	513,286	448,957	516,968	609,711	610,122	849,156	374,412	223,928			0

NOTES:

1. Projections based upon 11/14/2013 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
10. FY2015 Electrical includes $9,545.00 for 20% Wind Power Purchase @ $0.115 cents/kWh

MCPS UTILITIES - FY12-15

AGENCY
MCPS

JUSTIFICATION/DESCRIPTION:

UTILITY TYPE	Actual FY12	Actual FY13	Budget FY14	Projected * FY14	Estimated FY15
Electricity					
COST	$26,901,447	$27,562,712	$27,091,132	$29,509,132	$25,366,177
KWH's (000's)	217,010,471	219,894,411	219,194,767	228,501,100	220,370,892
COST/KWH	0.124	0.123	0.130	0.135	0.120
WATER AND SEWER					
COST	$2,779,790	$3,055,972	$3,422,355	$3,440,335	$3,884,805
GALLONS (000's)	457,619	404,310	410,038	392,841	406,507
COST/GALLON	6.07	7.56	8.19	8.52	8.84
FUEL OIL #2					
COST	$160,002	$14,383	$174,094	$135,062	$142,000
GALLONS	32,950	4,205	32,950	38,418	25,000
COST/GALLON	3.52	2.94	3.80	3.40	3.90
NATURAL GAS					
COST	$6,959,959	$6,062,834	$6,014,326	$7,214,326	$6,207,672
THERMS (000's)	5,049,227	5,755,217	5,765,484	6,394,548	5,877,095
COST/THERM	1.38	1.05	1.15	1.16	1.05
PROPANE					
COST	$73,771	$50,477	$90,096	$63,481	$91,956
GALLONS	36,708	35,688	36,109	43,506	34,520
COST/GALLON	2.01	1.41	2.42	2.07	2.66
TOTAL COSTS	**$36,874,970**	**$36,746,378**	**$36,792,003**	**$40,362,336**	**$35,692,610**

MCPS Cost and Usage Trends

MCPS RCP Excerpt

Resource Conservation Plan
FY 2015

Summary
Facilities owned or operated
by MCPS as of the end of **FY 2013 (June 30, 2013)**

Agency	**Montgomery County Public Schools, Maryland**		
Number of Facilities	223	Change in number of facilities	0
Total square feet	24,430,489	Change in total square feet	376,281
Average annual operating hours	3,220	Change in average annual operating hours	0
Changes effecting energy consumption	**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.		
	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.		

	Units	Total Consumption (Actual FY 2013)	Percent Change from Actual FY 2012	Total Cost ($) (Actual FY 2013)	Percent Change from Actual FY 2012
Electricity	kWh	219,894,411	0.9%	27,562,712	2.5%
Natural Gas	therms	5,755,217	-11.8%	6,062,834	-13%
Fuel Oil #2	gallons	4,205	-87.2%	14,383	-88%
Propane	gallons	34,520	-3.4%	50,477	-31.6%
Water/Sewer	kgallons	404,310	0.8%	3,055,972	10%
Total				$36,746,377	-0.2%

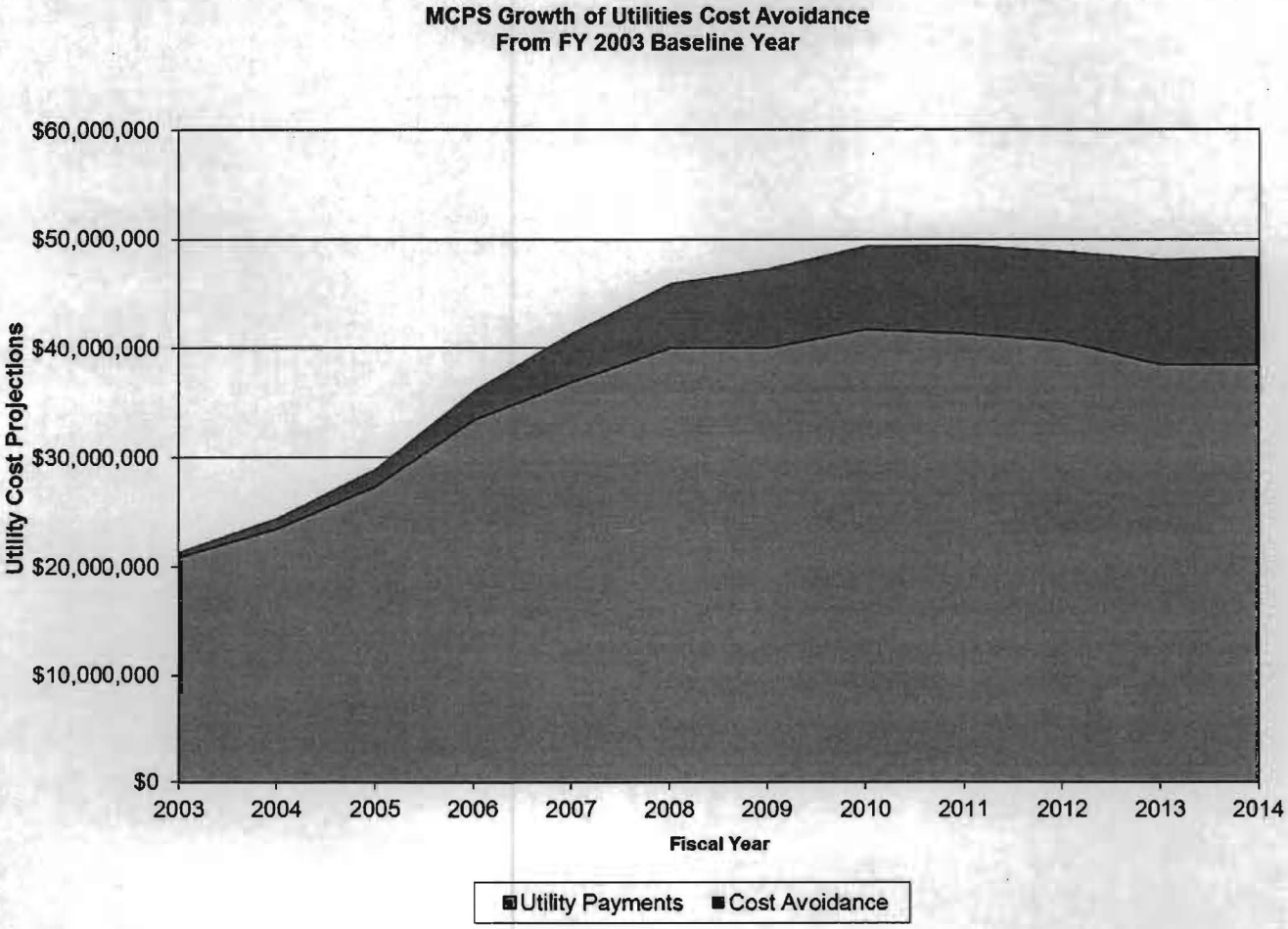
(16)

Resource Conservation Plan
Fiscal Year (FY) 2015
Summary

One-Time Projects	Completion Year	Implementation Cost	Annual Cost Savings	Average Simple Payback (Years)
New Measures	FY 2014	$1,668,358	$557,050	3
Existing Measures	FY 2004 To FY 2013	$12,679,493	$5,836,445	2.2
Planned Measures	FY 2015	$2,207,092	$669,712	3.3
Subtotal		$16,554,943	$7,063,207	2.3
Recurring Annual Operations Programs		Annual Cost	Annual Cost Savings	Return on Investment
School Energy and Recycling Teams		$964,266	$1,911,153	198%
Peak Load Management		$120,000	$1,700,000	1417%
Subtotal		$1,084,266	$3,611,153	333%
Grand Total MCPS Annual Savings			$10,674,361	

Summary

Without the energy programs and conservation measures implemented by the Department of Facilities Management (DFM) since FY 2004, the FY 2014 utility request would be higher by approximately $10,600,000. The chart below tracks the cost avoidance achieved by DFM each year of that time period. Despite the continued rapid growth of the school system, the MCPS energy program has succeeded in leveling the annual cost of utilities and is working toward reducing future request levels through procurement and consumption reduction strategies.



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New Measures

The **New Measures** table in this section lists and describes energy retrofit activities occurring in the current fiscal year. Other new measures in ongoing MCPS processes are described below.

Smart Grid Compatibility and Peak Load Reduction: MCPS currently is working with Pepco and other electric utilities in the upgrade of electricity meters to Smart Grid technology. In addition to the utilities' upgrades, MCPS specified KYZ outputs on all of its new meters so that it can fully implement access to near real-time electric data for each MCPS facility. The access to near real-time data will enable MCPS to be more responsive to reducing electric loads during peak grid hours in the summertime. Furthermore, the collection and management of more detailed data will allow for the development of consumption trends to identify additional energy conservation measures.

EnergyStar Portfolio Tracking: MCPS leadership is committed to benchmarking for the purpose of continuously pursuing excellence for all services provided to the students of the school system. MCPS has had a long-standing program of successfully tracking its energy consumption internally. Benchmarking has been more difficult due to the lack of similarly situated institutions that provide systemwide building energy performance data. In FY 2014, MCPS will be able to successfully load data for all of its facilities into the U.S. Environmental Protection Agency's (EPA's) EnergyStar's Portfolio Manager system. This is a time consuming task that will be evaluated to decide the value of continual updating the EPA system.

New Construction: The implementation of energy efficient design and construction generate substantial energy savings in each MCPS construction project. New construction measures are not listed in this table due to the large number of measures involved and because the cost and benefits of these measures are integrated into the building design.

The scope of the MCPS commitment to lean and green construction is exemplified by use of ground source heat pumps as a standard heating and cooling system and the goal of receiving above Silver certification on all new schools and modernization projects, through the Leadership in Energy and Environmental Design (LEED) Program.

MCPS provides the designers new building design guidelines to standardize the energy efficient design. More recent adoptions by MCPS in its design guidelines include the incorporation of Variable Refrigerant Flow (VRF) technology into all new administrative spaces. In addition, MCPS standards require that Demand Based Ventilation (DBV) be incorporated into all assembly areas, such as auditoriums, cafeterias, and multipurpose rooms.

VRF technology allows the effective waste heat recovery of one space to be transferred to another space within the same facility. This allows

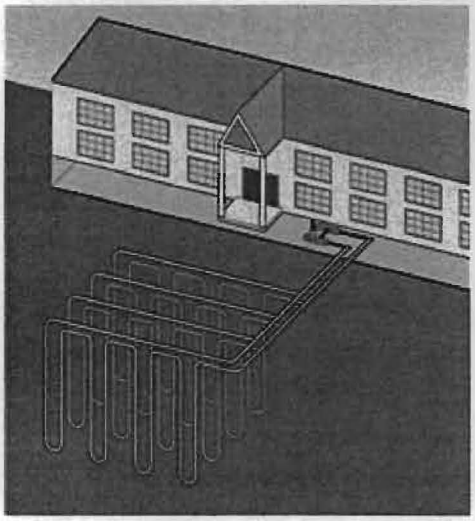
simultaneous heating and cooling to occur from a common condenser, which can be used more accurately and more efficiently to service a space as it helps to mitigate external environmental factors. VRF will be considered during new construction and modernization projects. The feasibility of this technology is being investigated for classrooms located in the core of a structure for future applications.

DBV technology takes advantage of savings opportunities made possible by a change to the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) ventilation standard 62.1, which allows reduced outside air intake into spaces while they are not fully occupied. This is performed by controlling outside air dampers based on continuously monitored CO_2 levels in the school system's newly constructed assembly areas. DBV also is being investigated for retrofitting purposed in existing facilities.

Facility	Year of Operation
Matsunaga ES	2001
Great Seneca Creek ES	2006
Little Bennett ES	2006
Richard Montgomery HS	2007
Bells Mill ES	2009
Cashell ES	2009
Francis Scott Key MS	2009
Gibbs ES	2009
Carderock Springs ES	2010
Cresthaven ES	2010
Cabin John MS	2011
Cannon Road ES	2012
Flora Singer ES	2012
Garrett Park ES	2012
Paint Branch HS	2012
Seven Locks ES	2012
Beverly Farms ES	2013
Gaithersburg HS	2013
Glenallan ES	2013
Hoover MS	2013
Weller Road	2013
Bel Pre ES	2014
Candlewood ES	2014
Clarksburg Cluster ES	2014
Rock Creek Forest ES	2014

Ground Source Heat Pumps:

Spark M. Matsunaga Elementary School opened in 2001 with the first ground source heat pump (GSHP) system in MCPS. This highly efficient heating and cooling system is standard on MCPS new schools and modernizations wherever ground conditions permit. GSHPs exchange heat with the earth through fields of closed-loop bore holes and reduce annual heating and cooling energy by 30 percent compared to conventional Heating, Ventilation, and Air Conditioning (HVAC) systems. The adjacent table list the GSHP system installations to date.



LEED Certification: In concert with energy conservation measures, MCPS seeks to be environmentally responsible in all aspects of facility design and operation. To comply with the *Montgomery County Green Buildings Law of 2006* for new buildings, all new schools and modernizations (excluding simple additions) that started design in FY 2008 or later will be certified by the United States Green Building Council under the LEED rating system. LEED directs sustainable design in the categories of: (1) Site Selection, (2) Efficient Use of Water, (3) Energy and Atmosphere, (4) Materials and Resources, (5) Indoor Environmental Quality, and (6) Innovative Design. Below is a table of MCPS schools affected by the LEED initiative through the construction phase.

LEED Certifications

Facility	Certification Level	Date Achieved
Great Seneca Creek ES (new)	Gold	2007
Francis Scott Key MS (replacement)	Gold	2009
Wm. B. Gibbs ES (new)	Gold	2010
Cashell ES (replacement)	Gold	2010
Carderock Springs ES (replacement)	Gold	2011
Cresthaven ES (replacement)	Gold	2011
Cabin John MS (replacement)	Gold	2012
Farmland ES (replacement/renov)	Gold	2012
Paint Branch HS (replacement)	Gold	2013
Cannon Road ES (replacement)	Gold	2012
Seven Locks ES (replacement)	Gold	2012
Flora M Singer ES (new)	Gold	2013
Glenallan ES (replacement)	Gold	2014

Utility Procurement: MCPS controls utility costs through competitive procurement of deregulated energy supplies. Since 2007, MCPS procures electricity in preplanned blocks of on-peak, off-peak, and around-the-clock products for various times of year. This is all managed through a wholesale account with the PJM Independent System Operator. PJM operates the electric grid for a large portion of the eastern United States. MCPS has recently adopted a similar methodology for the procurement of natural gas. The transition to the new method became effective in July 2012. This method of procurement risk management helps to insulate MCPS from market volatility while providing access to lower wholesale pricing.

Solar Power Purchase Agreements: MCPS has established power purchase agreements (PPA) for onsite electric renewable energy generation that extend to 20 years. These contracts hold a stabilized rate below the cost of conventional grid electricity and provide additional risk management for electric rates well into the future.

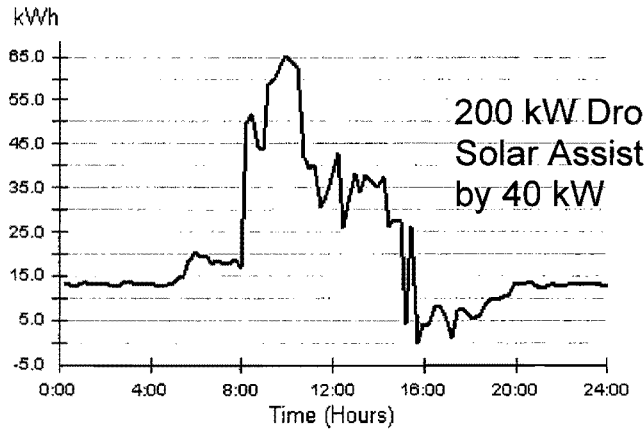
A PPA allows a government building owner to host the operation of a solar photovoltaic (PV) system on the roof of a building. A solar developer installs, owns, and maintains the solar array and sells power directly to the building owner. Unlike a government building owner, the developer is able to access significant cost offsets to solar projects available under state and federal tax incentives. The building owner benefits from electricity at below market rates, with no upfront cost or risk.

Existing: Large-scale PV systems from 80 kilowatts up to 319 kilowatts have been completed at eight schools. As a result, MCPS is one of the leading hosts of net-metered, solar power purchase agreements in Maryland with 1,264 kilowatts AC installed. The combination of these solar arrays is predicted to produce a capacity charge cost avoidance of approximately $150,000 in FY 2013. A list of the existing systems is provided in the table below:

School	Capacity (kW AC)	Number of Panels	Completion Date
Clarksburg HS	260	1,466	1/23/2009
Lakelands Park MS	133	770	2/10/2009
College Gardens ES	86	497	2/12/2009
Richard Montgomery HS	135	784	6/30/2009
Francis Scott Key MS	100	564	12/20/2009
Quince Orchard HS	319	1,799	12/20/2009
Sargent Shriver ES	80	495	12/20/2009
Parkland MS	151	851	1/20/2010
Total:	**1,264**	**7,226**	

DFM expects to deter a significant fraction of the Peak Load Contribution (PLC) for our schools through hosting solar installations. Recent rate increases in PLC charges would have raised the utility cost for MCPS by $4.5 million per year if not abated. The buildings with solar PV systems experience reduced annual PLC charges. As illustrated in the chart below, the load contribution during the 4:00–5:00 p.m. time period, when the PLC is typically assessed, was reduced substantially to a minimal level due to the power output from the solar PV system.

Sample Profile for Lakelands Park Middle School



(Almost Zero PLC from 4:00–5:00 p.m.)

Green Power Procurement: Prior to FY 2008, MCPS had procured 10 percent of its electricity as clean or renewable energy through purchase of renewable energy certificates (RECs). Since FY 2009, MCPS has purchased additional RECs to ensure that a minimum of 20 percent of its total electricity consumption is provided by renewable sources.

Light-Emitting Diode (LED) Technology: In the last year, MCPS piloted LED technology in exterior building lighting applications and for the house lights in a high school auditorium. MCPS is continuing to pilot LED fixtures in additional applications in anticipation of the technology becoming cost effective due to efficiency and reliability.

These new applications include parking lots, walkways, and auditorium house lights. Auditorium use has increased over the years to include lectures, classroom functions, testing, community use, as well as the traditional uses for assemblies, dramatic, and musical performances. The increased the demand on light fixtures result in these lamps failing at higher frequencies, causing maintenance and operation issues. Changing the lamps is very labor intensive because accessing the house lighting fixtures requires special equipment due to the high ceilings. LED fixtures possess many advantages over the incandescent lamps that currently are used in most auditoriums including a life expectancy that is many times longer, reduced energy consumption by more than 50 percent, and lower heat output that improves air conditioning effectiveness. Because LED lamps have dimming capabilities, they are suitable for use in auditorium house lighting.

New Measures

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

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-14	$1,197,729	(50,000)	Elect kWh	1,521,911	$193,767
				NG Therm	39,832	$45,767
Lighting Retrofits-EEI	Jun-14	$350,630	(175,315)	Elect kWh	1,060,840	$135,064
Solar PV PPAs	Jun-14	$0	0	NA	NA	$112,451
Retrocommissioning	Jun-14	$120,000	(20,000)	Elect kWh	471,259	$60,000
				NG Therm	8,703	$10,000
Total		$1,668,358	(245,315)			$557,050

Description of Activities

Energy Management Upgrades: The infrastructure of energy management systems (EMS) at MCPS has reached an age where many systems need to be upgraded or replaced. Advances in electronics and communications now enable greater savings from EMS than previously was possible.

Solar PV PPA: A PPA allows a government building owner to host the operation of a PV system on the roof of the building. A solar developer installs, owns and maintains the solar array and sells power directly to the building owner. The building owner benefits from cheaper electricity and reduced demand charges at no upfront cost or risk.

Lighting Retrofits: Some projected will be funded by the state Energy Efficiency Initiative (EEI) in which lighting retrofits considered to be capital expenditures will receive roughly 50% funding.

Existing Measures

MCPS has made significant investments in energy conservation going back to 1980. The **Existing Measures Summary** table on the following page includes projects back to FY 2004. Subsequent detailed tables document the specific types of projects, investment, and savings by year.

The major accomplishments of this history include the following:

- Systemwide conversion to T8 lamps and electronic ballasts is 80 percent completed. In 2007 and 2008, lighting energy was reduced an additional 25 percent by systemwide re-lamping with new, super-efficient, 25-Watt T8 lamps featuring twice the lamp life.

- Incandescent fixtures have been eliminated wherever possible and replaced with permanent compact fluorescent fixtures. Exit signs have been replaced with maintenance-free LED models.

- Energy Management Systems have been installed in 191 schools, which a central energy management office monitors and maintains. Internet-controlled electronic thermostats were installed in 685 portable classrooms in FYs 2003 and 2004.

- All network computers are signaled to shut down each day at 6:00 p.m. and must be manually restarted in the morning as needed. All new computers comply with Energy Star 4.0 low-energy ratings, including flat-panel monitors and high-efficiency power supplies.

SERT: In addition to capital improvements, MCPS has long maintained a program of behavioral education to reduce energy use by facility users. The SERT Program continually promotes and rewards a culture of conservation in the school system. SERT communicates with the schools through group training and professional development events, newsletters, investigation-based activities, informational flyers, e-mail, websites, a telephone hotline, and, most importantly, regular site visits. As rewards for participation, the programs offer annual and quarterly financial awards. SERT provides support and recognition to students and schools participating in annual competitions, including awareness campaigns, poster contests, and digital arts contests. This program produces millions of dollars a year in utility savings for the school system and helps to instill environmental responsibility in future generations.

In FY 2005 and 2006, SERT Program staff was increased to provide frequent onsite monitoring of behavior and assistance to schools in saving energy by trained energy facilitators. The energy-saving results have been broad based and significant across the system. In FY 2009, 120 schools achieved the initial goal of a five percent reduction in electric use over the baseline year. Of those 120 schools, 90 significantly exceeded the goal,

scoring in the range of a 10 to 30 percent reduction in electric consumption. In FY 2013, cost avoidance for this program was $2.7 million.

Peak Load Management (PLM): PJM Interconnection, LLC (PJM) is the independent system operator of the electric grid that serves MCPS. A significant charge instituted by PJM is the Peak Load Contribution (PLC) charge. This charge is assessed against all consumers of electric power on the five days of the summer when demand for power is at the maximum on the PJM system. This charge is based on each consumer's demand for electric power that coincides with PJM's five peak hours. The purpose of the charge is to recover the cost to have full generation and transmission capacity available for the highest demand periods. These PLC charges vary from year to year. They typically amount to 10 to 15 percent of MCPS' cost for electricity, or $2.7 million to $4 million. Charges based on the summer 2012 assessments will be especially high with the potential of increasing MCPS electricity cost by $4.5 million between FY 2013 and FY 2014.

To defray part of these additional charges, DFM has developed a program to reduce peak electrical demands at facilities during the critical summer afternoon hours when the charges are most likely to be set. The program uses EMSs to curtail central plant chillers and pumps to many facilities during the critical hours each weekday, while SERT "energy sweepers" simultaneously walk the facility to turn off unnecessary lights and plug loads. During the summer of 2009, the program successfully reduced PLC charges by 20 percent, avoiding $624,000 in the following year's utility costs.

In FY 2009, PLM was extended to all facilities through installation of advanced electric meters that record use in 15-minute intervals. Performance of schools at the critical hours was reviewed on a weekly basis by MCPS energy personnel for compliance with PLM directives. Where compliance was not achieved or other scheduling problems were observed, correctional measures were undertaken and tracked to completion in a database. Cost avoidance for the efforts during the summer of 2013 is projected to be $1.7million.

Existing Measures Summary

This table summarizes information on resource conservation measures implemented from **FY 2004 through FY 2013**

Existing Measures **Project Types**	Completion Year	Implementation Cost	Annual Cost Savings	Average Simple Payback (Years)
All Types	FY2013	$832,933	$736,392	1.1
All Types	FY2012	$2,302,083	$372,401	6.2
All Types	FY2011	$722,743	$237,568	3.0
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
All types	FY 2004 to FY 2006	$1,185,000	$845,000	1.4
Existing Measures Grand Totals		$12,679,493	$5,836,445	2.2

Please see the following **Existing Measures** tables for project descriptions and financial details on the above line items. Energy savings through operations and behavior change are accomplished through the **SERT** Program.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MONTGOMERY COUNTY

RESOURCE CONSERVATION PLAN

DEPARTMENT OF PARKS

DEPARTMENT OF PLANNING

Fiscal Year 2015

Final Report for Commission Approval
January 14, 2014

Revised April 3, 2014

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RESOURCE CONSERVATION PLAN

The Maryland-National Capital Park and Planning Commission

Montgomery County
Department of Parks
Department of Planning

1. INTRODUCTION

The Montgomery County Department of Parks 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 Maryland-National Capital Park and Planning Commission 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.

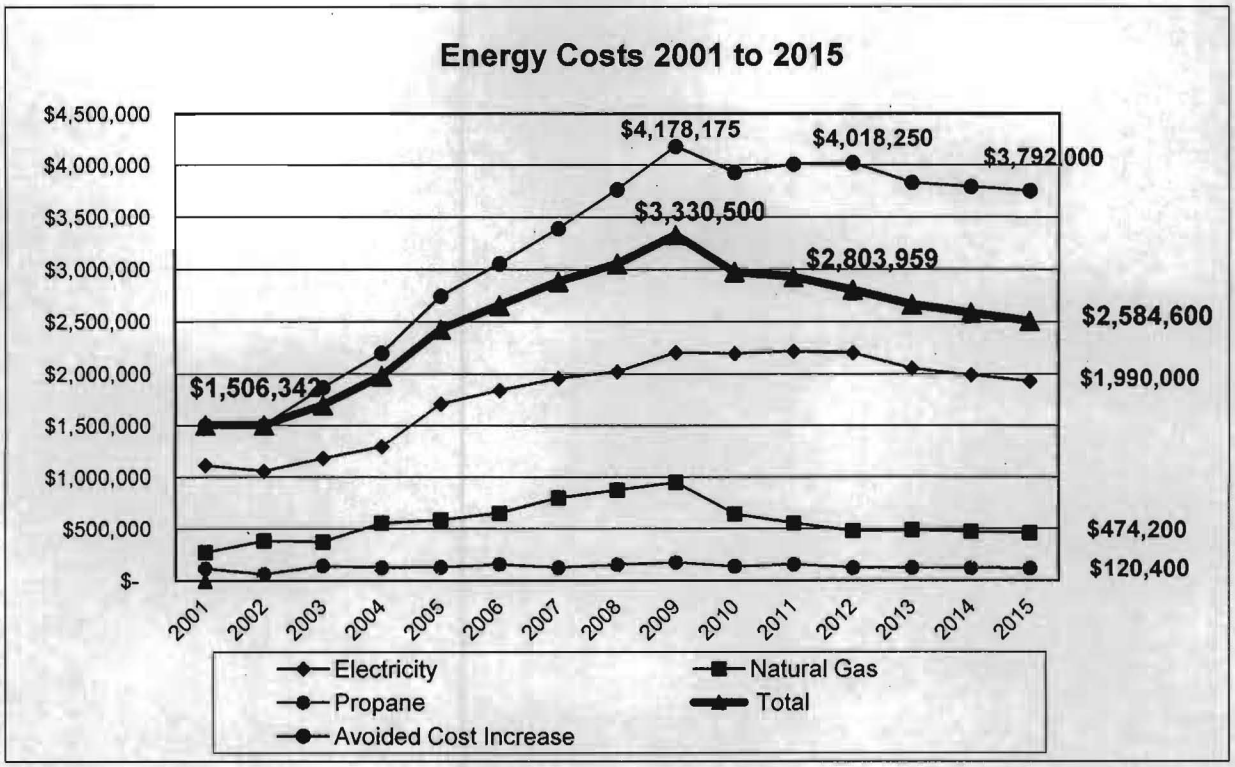
The goal of the comprehensive Resource Conservation Plan is to establish programs and projects that will efficiently use energy and water resources to fulfill the mission of the Commission to serve the citizens and visitors of Montgomery County.

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

This report presents the accomplishments as of December 30, 2013 and the plans for the balance of the 2014 Fiscal Year. The report establishes plans for the 2015 Fiscal Year to conserve energy and water resources as part of a comprehensive Resource Conservation Plan.

The Maryland-National Capital Park and Planning Commission has continued to reduce costs based on the implementation of programs and projects in Fiscal Year 2013.

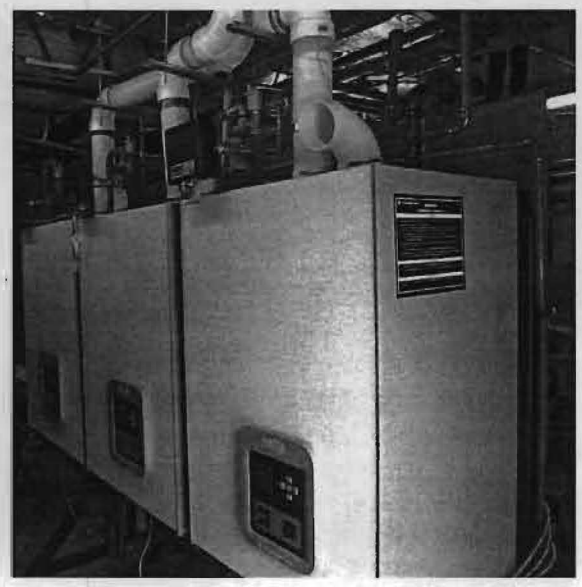
Since 2009 when energy costs peaked at $3,330,500 the combined efforts to reduce consumption and procurement costs for energy supply services has reduced costs by 20% as of July 1, 2013. The chart which follows shows the program trends since 2001.



Two innovative projects completed this year.

Installation of a modular boiler system at the Brookside Gardens Fritz Green House

Original cast iron boilers which circulated hot water throughout the green house on a continuous basis



New Modular boilers improved efficiency by 60% and allows the production of heat based on demand based on temperature requirements

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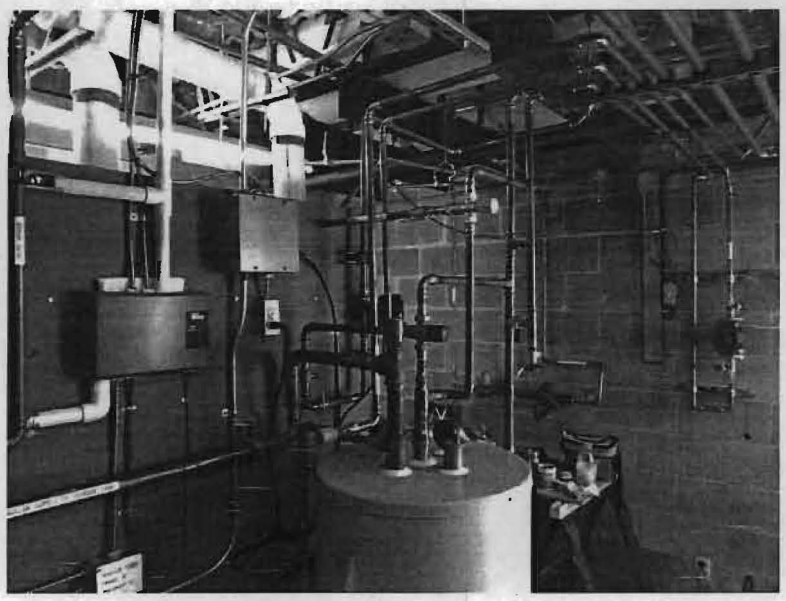
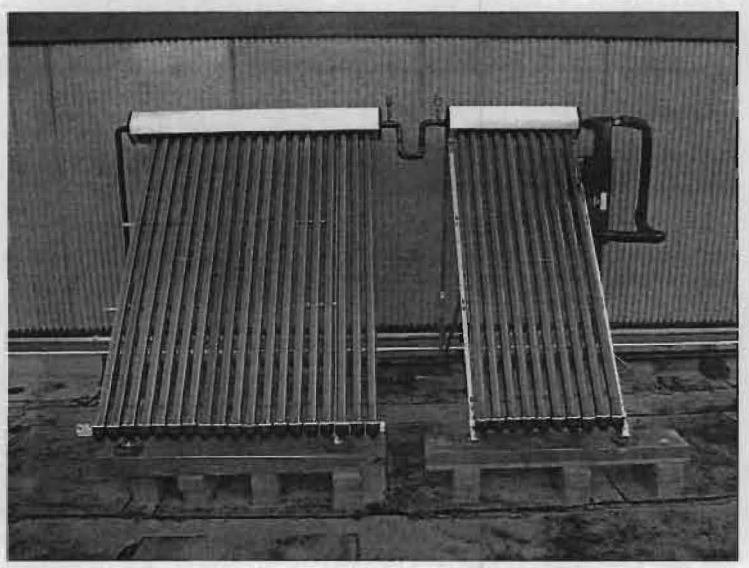


Digital control system and zoned valve system to allow independent heating capability throughout the green house based on use and demand

Installation of solar hot water heating system at the Shady Grove Maintenance Center



Solar Thermal Heating Vacuum Tube Collection System Mounted on the roof.

Addition of white storage tank supplements the existing tan natural gas domestic hot water tank to provide hot water throughout the day

2. FISCAL YEAR RESULTS – 2013 (Revised April 2, 2014)

July 2012 to June 2013

The results of the programs and projects implemented in Fiscal Year 2013 are:

Cost by Department:

Revised	**Actual Costs July 2012 to June 2013**	**Budget 2013**	**Difference**
DEPARTMENT OF PLANNING	**$171,565**	**$234,830**	**$63,265**
DEPARTMENT OF PARKS	**$1,793,046**	**$2,324,700**	**$531,654**
ENTERPRISE & PROPERTY MANAGEMENT	**$991,865**	**$1,270,770**	**$278,905**
TOTALS	**$2,956,475**	**$3,830,300**	**$873,825**

Projects and Programs implemented in Fiscal Year 2013

- Park Maintenance Centers - Exterior pole lighting conversions to LED technology
- Wheaton Ice Rink Domestic Hot Water System Upgrade
- Implemented projects identified in the Inter-County Committee on Energy and Utility Management Plan
- Finalized the project recommendations of the County Executive: Cross-Agency Resource- Sharing Committee (CARS)

Budget Expenditures for Fiscal Year 2013:

Programs Energy Management:	$35,000.00
Projects Local:	$45,000.00
Projects Non-local:	$35,000.00
Total in FY 2013:	$115,000.00

3. RESULTS TO DATE - FISCAL YEAR 2014
July 2013 to June 2014

The results of the programs and projects implemented as of December 30, 2013 are:

Budget projection for Fiscal Year 2014 is:

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

Goals:

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

Planned Projects and Programs for Fiscal Year 2014

Meadowbrook Maintenance - HVAC Replacement
Brookside Gardens Visitor Center – Auditorium - HVAC Retrofit
Parkside – LED Technology Lighting Retrofit
Shady Grove Maintenance Center Training Building – Solar Domestic Hot Water System
Brookside Gardens Greenhouse - Boiler Replacement

The proposed budgeted expenditures for Fiscal Year 2014:

Programs Energy Management:	$35,000.00
Projects Local:	$40,000.00
Projects Non-local:	$40,000.00
Total in FY 2014:	$115,000.00

4. PLANNED RESOURCE CONSERVATION PLAN – FISCAL YEAR 2015
July 2014 to June 2015

Goals:

- Reduce consumption overall by up to 1%.
- Evaluate expansion of the building automation controls and energy management systems capabilities in the primary office buildings
- Seek additional project grant opportunities
- Renew staff participation training programs
- Integrate program as part of the Sustainability Practice
- Seek opportunities to implement renewable energy projects

Planned Projects and Programs for Fiscal Year 2015

Need Wood Manson – Boiler Replacement
Meadowbrook Stables – Boiler Replacement
Norwood – Boiler Replacement
Pope Farms – Solar Hot Water System Upgrade
Primary Buildings – Install Variable Speed Pump Systems for Heating
Recreation Centers - Install LED exterior wall lighting and parking lot lighting
Black Hill Regional Park - Solar Photovoltaic Feasibility Study

Budget projection for Fiscal Year 2015 is:

	Proposed Budget 2015
DEPARTMENT OF PLANNING	$250,100
DEPARTMENT OF PARKS	$2,385,800
ENTERPRISE & PROPERTY MANAGEMENT	$1,304,600
TOTALS	$3,940,500

The proposed budgeted expenditures for Fiscal Year 2015:

Programs Energy Management:	$35,000.00
Projects Local:	$40,000.00
Projects Non-local:	$40,000.00
Total in FY 2013:	$115,000.00

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 in 2013	0
Total square feet	1,205,420	Change in total ft^2 in 2013	0
Average operating hrs./year	Varies	Change in avg. operating hrs./year in 2013	None
Other changes effecting energy consumption	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: **Acres of Parkland: 35,266** Total Developed Acres: 8,950 Total Set Aside for Preservation: 26,316 **Parks: 418** Stream Valley: 38 Regional: 5 Recreational: 11 Conservation: 20 Neighborhood Conservation Areas: 40 Recreation/non-recreation facilities: 6 Urban: 27 Neighborhood: 95 Local: 149 Special: 25 Historical/Cultural: 2 **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 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		

Existing Measures
Programs and Projects Completed - Fiscal Years 2000 to June 2013

Measures - Existing: (implemented from FY 2000 to FY 2012)	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 2013	$391,000 est.	$100,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	604,000 kWh, 31,600 therm & 5,100 Pounds	$124,100 est. Annual Cost Avoidance
Equipment Retrofit Projects Includes MEA Grant in 2010 and DOE Grant in 2012	FY 2000 to FY 2013	$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 2013	$60,000 est.	NA	Electricity and Natural Gas	127,000 kWh & 10,600 therm	$39,000 est. Annual Cost Avoidance
Lighting Projects Includes MEA Grant in 2010 and DOE Grant in 2012	FY 2000 to FY 2013	$397,200 est.	NA	Electricity	292,000 kWh	$174,850 est. Annual Cost Avoidance
CIP Projects Sub-total		$969,200 est.			1,213,200 kWh, 53,700 therm & 5,700 Pounds	$385,550 est. Annual Cost Avoidance
Operations and Maintenance:						
Operations and Maintenance Best Management Practice and Programs	FY 2000 to FY 2013	$342,500	$5,000 annual	Electricity, Natural Gas, and Propane	646,000 kWh, 29,100 therm & 6,000 Pounds	$135,000 est. Annual Cost Avoidance
Totals		**$1,311,700**			**1,859,200 kWh, 82,800 therm & 11,700 pounds**	**$520,550 est. Annual Cost Avoidance 2.5 yrs. ROI**

New Measures Fiscal Year 2014

Resource Conservation Measures

Being Implemented July 1, 2013 through June 30, 2014

Measures - Planned:	Projected completion date	Projected initial cost ($)	Projected annual net impact on maintenance cost ($)	Fuel type(s) effected and units	Estimated units saved per year	Projected annual cost savings ($)
Capital Improvement Projects:						
Equipment Replacement Projects Local & Non-Local	Entire Year	$50,000 est.	$20,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	100,000 kWh, 10,000 therm & 1000 Pounds	$16,000 est. Annual Cost Avoidance
Controls Improvements Local & Non-Local	Entire Year	$10,000 est.	NA	Electricity	15,000 kWh & 1,000 therm	$4,000 est. Annual Cost Avoidance
Lighting Projects Local & Non-Local	Entire Year	$20,000 est.	NA	Electricity, and Natural Gas	30,000 kWh,	$12,000 est. Annual Cost Avoidance
CIP Projects Sub-total		**$80,000**	**$20,000**			**$32,000**
Operations and Maintenance:						
Best Management Practices Programs	Entire Year	$15,000	NA	Electricity, Natural Gas, and Propane	23,000 kWh, 900 therm & 200 Pounds	$4,000 Annual Cost Avoidance
Employee Training and Participation Programs	Entire Year	$5,000	NA	Electricity, Natural Gas, and Propane	14,000 kWh, 400 therm & 100 Pounds	$1,000 Annual Cost Avoidance
Operations and Maintenance Improvement Programs	Entire Year	$15,000	NA	Electricity, Natural Gas, and Propane	25,000 kWh, 900 therm & 200 Pounds	$5,000 est. Annual Cost Avoidance
O&M Total		**$35,000**	**NA**			**$10,000**
Totals		**$115,000**	**$20,000**			**$42,000 2.7 yr. ROI**

Planned Measures Fiscal Year 2015

Resource Conservation Measures Planned
July 1, 2014 through June 30, 2015

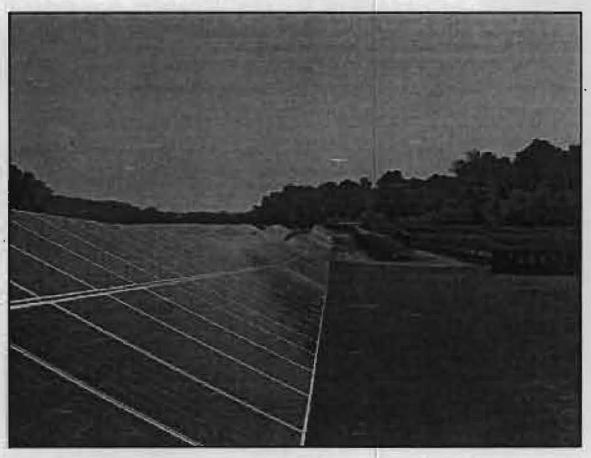
Measures - Planned:	Projected completion date	Projected initial cost ($)	Projected annual net impact on maintenance cost ($)	Fuel type(s) effected and units	Estimated units saved per year	Projected annual cost savings ($)
Capital Improvement Projects: 2014						
Equipment Replacement Project Local & Non-Local	Entire Year	$50,000 est.	$20,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	100,000 kWh, 10,000 therm & 1000 Pounds	$16,000 est. Annual Cost Avoidance
Controls Improvements Local & Non-Local	Entire Year	$10,000 est.	NA	Electricity	15,000 kWh & 1,000 therm	$4,000 est. Annual Cost Avoidance
Lighting Projects Local & Non-Local	Entire Year	$20,000 est.	NA	Electricity	30,000 kWh	$12,000 est. Annual Cost Avoidance
CIP Projects Sub-total		**$80,000**	**$20,000**			**$32,000**
Operations and Maintenance: 2014						
Best Management Practices Programs	Entire Year	$15,000	NA	Electricity, Natural Gas, and Propane	23,000 kWh, 900 therm & 200 Pounds	$4,000 Annual Cost Avoidance
Employee Training and Participation Programs	Entire Year	$5,000	NA	Electricity, Natural Gas, and Propane	14,000 kWh, 400 therm & 100 Pounds	$1,000 Annual Cost Avoidance
Operations and Maintenance Improvement Programs	Entire Year	$15,000	NA	Electricity, Natural Gas, and Propane	25,000 kWh, 900 therm & 200 Pounds	$5,000 est. Annual Cost Avoidance
O&M Total		**$35,000**	**NA**			**$10,000**
Totals		**$115,000**	**$20,000**			**$42,000 2.7 yrs. ROI**

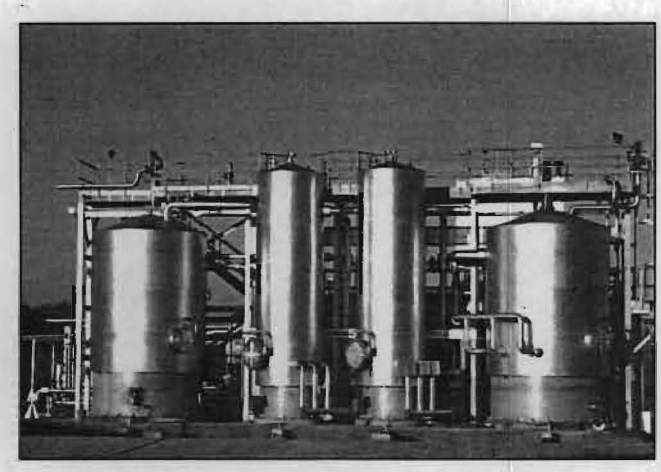
Utility Budget Projection by Fund/Cost

(July 1 to June 30)		2013 Budget	2014 Budget	2015 Budget
DEPARTMENT OF PLANNING				
2220	Electricity	$195,100	$199,000	$210,000
2210	Natural Gas	$31,200	$32,000	$31,000
2230	Water and Sewer	$6,990	$7,100	$7,500
1903	Propane			
	Tax Increase			
	Wind Energy Fee	$1,540	$1,600	$1,600
	Sub Total	**$234,830**	**$239,700**	**$250,100**
DEPARTMENT OF PARKS				
2220	Electricity	$1,273,600	$1,300,000	$1,310,000
2210	Natural Gas	$397,100	$410,000	$401,000
2230	Water and Sewer	$531,800	$545,000	$550,000
1903	Propane	$113,400	$116,000	$116,000
	Tax Increase			
	Wind Energy Fee	$8,800	$8,800	$8,800
	Sub Total	**$2,324,700**	**$2,379,800**	**$2,385,800**
DEPARTMENT OF PARKS - ENTERPRISE				
2220	Electricity	$847,120	$865,000	$880,000
2210	Natural Gas	$332,470	$340,000	$321,000
2230	Water and Sewer	$38,280	$40,000	$50,000
1903	Propane	$36,500	$38,000	$38,000
	Tax Increase			
	Wind Energy Fee	$6,100	$6,100	$6,100
	Sub Total	**$1,260,470**	**$1,289,100**	**$1,295,100**
DEPARTMENT OF PARKS - PROPERTY MANAGEMENT				
2220	Electricity	$7,400	$7,500	$7,000
2210	Natural Gas	$2,900	$3,000	$2,500
2230	Water and Sewer	$0	$0	$0
1903	Propane	$0	$0	$0
	Tax Increase			
	Wind Energy Fee			
	Sub Total	**$10,300**	**$10,500**	**$9,500**
	Overall Totals	**$3,830,300**	**$3,919,100**	**$3,940,500**

Excerpts from

WASHINGTON SUBURBAN SANITARY COMMISSION
RESOURCE CONSERVATION PLAN
FY 2015





Rob Taylor
Energy Manager

April 4, 2014

WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2015
RESOURCE CONSERVATION PLAN

Summary

The information on this page reflects the facilities owned or operated
By WSSC as of the end of **FY 13 (June 30, 2013)**

Number of Facilities	210	Change in number of facilities	+0
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 13)	percent change from actual FY 12	total cost (actual FY 13) $	percent change from actual FY 12
Electricity	kWh	206,833,000	-5%	$22,604,000	-9%
Natural Gas (firm)	therms	316,000	+12%	$316,000	+7%
Natural Gas (Irate)	therms	15,000	-92%	$8,000	-92%
Diesel Fuel (generators)	gallons	48,000	+92%	$48,000	+51%
Fuel Oil #2	gallons	19,000	+375%	$81,000	+575%
Propane	gallons	3,000	-10%	$6,000	-33%
Water/Sewer	gallons	N/A	N/A	N/A	N/A
Total				**$23,063,000**	

WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2015
RESOURCE CONSERVATION PLAN

Existing Measures- Prior to FY'13

This table shows information on resource conservation measures implemented prior to FY 13
(July 1, 2011 through June 30, 2012)

Measures - Existing: (implemented from FY 02 to FY 12)	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 02-03	$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 02-11	$0	$0	Electricity	5,000 kW	$500,000
Pump Turbine Utilization (Rocky Gorge)	FY 01-08	$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 2015
RESOURCE CONSERVATION PLAN

Existing Measures- FY'13

This table shows information on resource conservation measures implemented during FY 13
(July 1, 2012 through June 30, 2013)

Measures - New: (Implemented during FY 13)	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:						
Total, CIP		$0	$0	N/A	0	$0
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	$600,000
PJM ILR Program- emergency load shedding	7/09	$0	$0	Electricity	2,000 kW load shedding	$120,000
Pump Turbine Utilization (Rocky Gorge)	1/13 Turbines rebuilt	$1,500,000	$0	Electricity	2,000,000 kWh	$200,000
Total, O&M		$1,500,000	$0	Electricity	2,000,000 kWh 2,000 kW	$920,000
Page Total		**$1,500,000**	**$0**	**Electricity**	**2,000,000 kWh** **2,000 kW**	**$920,000**
Description of Activities:						
See narrative						

WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2015
RESOURCE CONSERVATION PLAN

New Measures

This table shows information on resource conservation measures planned
To be implemented in FY 14 **(July 1, 2013 through June 30, 2014)**

Measures - Planned: (for FY14)	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:						
Energy Performance Project- Phase IID (Potomac Pump Upgrade)	11/13 6 pumps	$6,200,000		Electricity	5,900,000 kWh	$650,000
Solar PV PPA- Seneca & Western Branch	10/31/13	$0 to WSSC	$0	Electricity	0 kWh	$157,000
Total, CIP		$6,200,000		Electricity	5,900,000 kWh	$807,000
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
Pump Turbine Utilization (Rocky Gorge)	1/13 Upgraded	$0	$0	Electricity	2,000,000 kWh	$200,000
Total, O&M		$0	$0	Electricity		$0
Page Total		**$6,200,000**		**Electricity**	**7,900,000 kWh**	**$1,007,000**
Description of Activities:						
See narrative						

WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2015
RESOURCE CONSERVATION PLAN

Planned Measures

This table shows information on resource conservation measures planned
To be implemented in FY 15 **(July 1, 2014 through June 30, 2015)**

Measures - Planned: (for FY15)	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:						
Solar PV PPA- Seneca & Rocky Gorge	6/30/15	$0 to WSSC	$0	Electricity	0 kWh	$157,000
Total, CIP		$0	$0	Electricity	0 kWh	$157,000
Operations and Maintenance:						
Pump Turbine Utilization (Rocky Gorge)	1/13 Upgraded	$0	$0	Electricity	2,000,000 kWh	$200,000
Total, O&M		$0	$0	Electricity	2,000,000 kWh	$200,000
Page Total		**$0**	**$0**	**Electricity**	**2,000,000 kWh**	**$357,000**
Description of Activities:						
See narrative						

WASHINGTON SUBURBAN SANITARY COMMISSION
FY 2015
RESOURCE CONSERVATION PLAN

MAJOR INITIATIVES:

Electricity Supply:

WSSC currently purchases approximately 200,000 MWh per year in electricity. Towards that goal our strategy is to purchase commodity in a reasoned manner subject to its overall risk parameters and goals. Here energy is purchased strategically on a block and index basis with greater block purchases targeted to higher cost periods. Blocks are defined as products normally traded by major Electric Wholesale Trading Counterparties. Generally, these products include round-the-clock which is 7x24 (7 days by 24 hours), on-peak which is 5x16 (5 weekdays x 16 on-peak hours), or off-peak which is all weekend hours plus 5x8 weekday off-peak hours. For load which is not covered by a corresponding block purchase the load requirement is obtained by settling at the "Index". The Index for the WSSC accounts is the Locational Marginal Price "LMP" in the zone where the account is located. The LMP is instantaneous price of electricity integrated for any given hour. It represents the price at which all demand for electricity clears at the price which suppliers are willing to provide.

A block and index approach is appropriate for several reasons:

- It gives WSSC access to the wholesale market on a transparent basis. All block purchases are made through a transparent bidding mechanism where Constellation, executes on WSSC's behalf at Wholesale Market Pricing.

- The process of aggregating blocks over time to fulfill a future position allows WSSC to accumulate their position over time based on market timing and future market pricing expectations. This allows WSSC to purchase its future blocks when it is deemed advantageous. It allows for purchases based on normal and expected seasonal swings in the market. Because electricity prices tend to be related to Natural Gas prices, monitoring trends in the natural Gas Market is a key indicator as to the potential timing of block purchases for WSSC. Recently, a great many of the block purchases have either been made in the spring or the fall as the forward market has declined seasonally.

- An advantage to block and index pricing is that it shares risk. By assuming some of the risk of future index prices, WSSC shares in the benefit of potentially lower index prices. Generally, over the course of recent years, average index prices have tended to be somewhat less than block purchases.

- Block purchases allow WSSC to lock in prices and isolate WSSC from the effect of major index swings due to regulatory changes, extreme weather impacts such as excessive hot or cold weather durations as well as the effect of hurricanes, and the potential of environmental compliance issues.

Budget Comparison Summary

FY '14 budget average load is estimated to be 196,300 MWh, 1.8 % below last year's FY '13 budget of 199,900 MWh. The FY '14 budget estimated price is $78.54/MWh which can be contrasted with last year's budget price of $82.89/MWh. The reduction is mainly attributed to the replacement of the $85

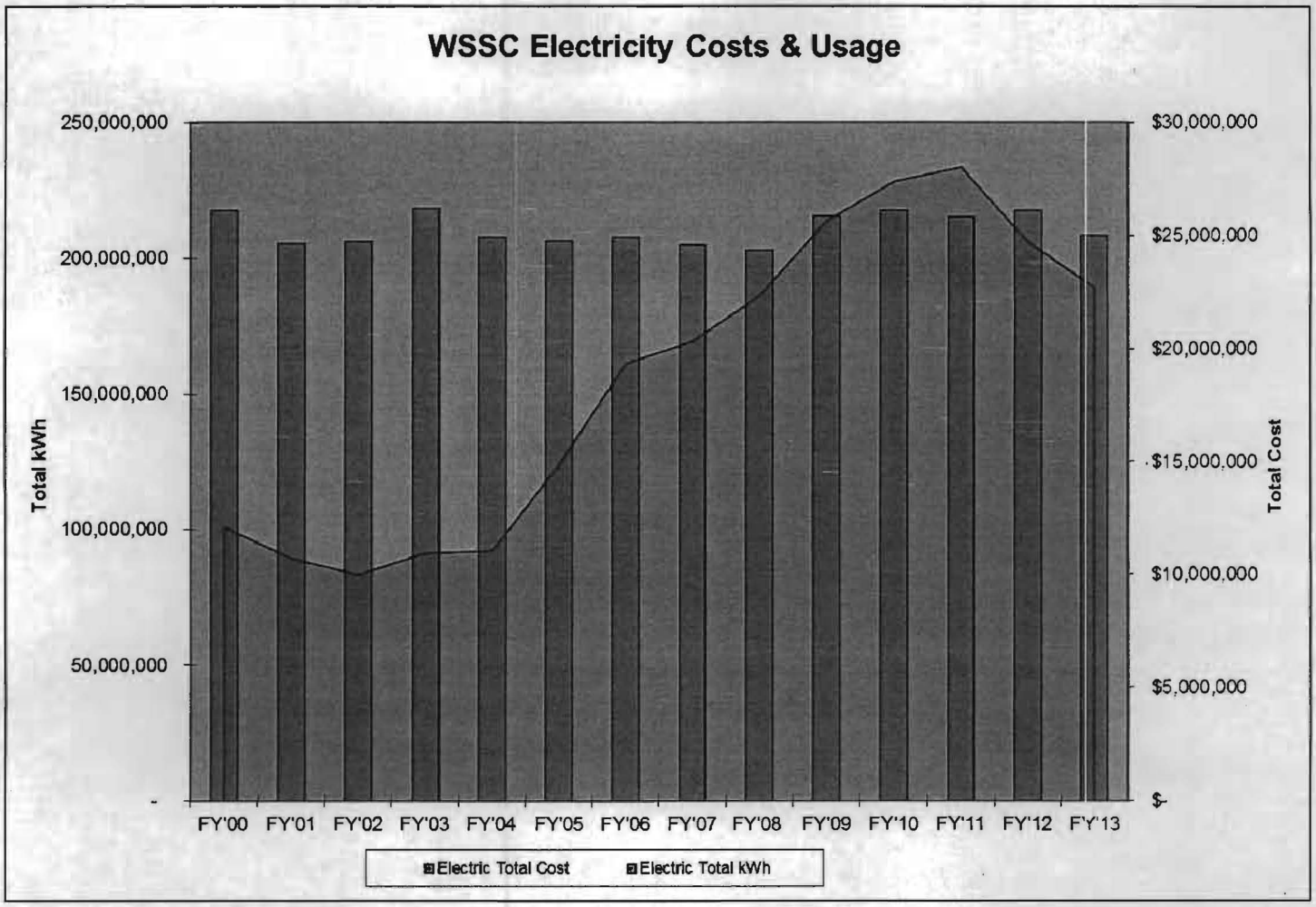
hedges with more cost effective hedges slightly offset by an increase in capacity costs. Additionally the forecast shows a larger open position at a lower forward price ($41.14/MWh vs. $53.30/MWh). The lower forward prices are in part driven by lower natural gas futures which are estimated to be $3.80/Dth in FY '14 versus the previous FY budget of $4.80/Dth. Wind purchases are estimated to be below the previous FY forecast but at the same price of $64/MWh.

Budget Comparison Summary

	FY - 2014	FY - 2013
	MWH (000)	
Energy:		
Hedged	94.90	106.58
Wind	53.02	61.36
Open	48.35	31.98
Total Energy	**196.27**	**199.93**

	FY - 2014	FY - 2013
	(MW)	
Capacity		
PLC	27.54	26.81
TX	26.63	23.88

	FY - 2014	FY - 2013
	($/Mwh)	
Cost/Mwh		
Energy	$59.30	$68.68
Capacity	$11.75	$6.97
Adders	$7.49	$7.24
Total	**$78.54**	**$82.89**



APPENDIX B:
ELECTRICITY COSTS & USAGE