SUPERIOR GOVERNMENT SERVICE WITH THE SMALLEST POSSIBLE ENVIRONMENTAL FOOTPRINT

FY2017
Montgomery County
Green Government Report

DGS
Delivering Great Service!

March 2018

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All references throughout this document to the number of cars off the road, trees planted, and homes powered are according to the U.S. Environmental Protection Agency Greenhouse Gas Equivalencies Calculator. https://www. epa.gov/energy/greenhouse-gas-equivalencies-calculator.

ACKNOWLEDGEMENTS

The data and information in this report replaces information found in the FY2016 Sustainable Government Operations Report published on March 1, 2017. The information in this FY2017 Green Government Operations Report includes new information about FY2016 green government operations that became available after the publication of the previous report.

MESSAGE FROM MONTGOMERY COUNTY EXECUTIVE ISIAH LEGGETT

Isiah Leggett, County Executive

Achieving and maintaining healthy and sustainable communities for all County residents, businesses, and visitors is one of my highest priorities. During my 12 years as County Executive, Montgomery County has advanced approaches to "greening" government operations because it is the right thing to do for our residents and future generations.

I am especially proud to announce that through energy efficiency, renewable energy investment and energy purchases, we now have a carbon-neutral government. We are on track to save $70 million over the next 20 years through energy efficiency improvements, negotiations with energy suppliers, and solar energy generation on County facilities.

Clean, local energy generation through solar power is reducing greenhouse gas emissions while relieving utility grid stress. In addition, we have received national attention for two microgrid projects currently underway that use solar and high-efficiency generators to allow critical public-safety services to operate without interruption even during major storms or disasters. This is part of an overall effort to improve the resiliency of public facilities, approaches we look forward to replicating in future facilities.

Montgomery County has a strong team of professionals dedicated to meeting our community's greenhouse gas emissions reduction targets and other goals. The Office of Energy and Sustainability, within the Department of General Services, is responsible for coordinating and assisting all County Departments in "greening" their operations. "Greening" Montgomery County's government operations allows us to provide superior service while minimizing resource consumption, protecting clean air and water, saving costs, and improving the health, vitality, and resiliency of communities.

We know that protecting our environment begins at the local level, which is why I called on County Departments to take a leadership role in special policy initiatives to benefit our community. Recent examples include our advocacy before the Maryland Public Service Commission that has resulted in millions of dollars in direct benefits to residents and businesses, increased reliability of the region's power supply, and investments in energy-efficiency, renewable energy, and job creation.

Montgomery County will not waiver on its responsibility to its residents, the local economy, and future generations. Together, we will continue to build on the policies and programs that will enable Montgomery County to maintain its leadership position while making our County an even more eco-friendly community.

MESSAGE FROM DEPARTMENT OF GENERAL SERVICES DIRECTOR DAVID E. DISE

David E. Dise, Director

The Department of General Services (DGS) minimizes the environmental impact of government operations while delivering superior service to all County departments and the public. DGS sets the highest standards for sustainability, launches innovative initiatives to reduce costs, uses renewable energy, conserves energy in our buildings and fleet, and plans sustainable strategies for our future. Sustainability is core to our fleet management, facilities maintenance, print management, and building construction. We apply stringent standards to ensure we meet sustainability goals across DGS's operations and support our partners in improving the sustainability of their work.

While all of DGS is engaged in greening County government, its Office of Energy and Sustainability (OES) is the hub of these efforts. OES provides support and expertise to enable DGS divisions and our partners across County government to adopt sustainable practices, prioritize energy and cost-saving projects, obtain funding, and communicate successes. OES is tasked with implementing large-scale solar projects, identifying other solutions to ensure clean and resilient energy supply to government facilities, managing the County's energy use, and developing action plans to reduce energy consumption and costs. OES has also taken a leadership role in supporting a number of high profile energy policy initiatives that benefit the community. OES is instrumental in the County's approach to critical matters before the Maryland Public Service Commission including utility rate cases, the proposed merger of AltaGas Ltd. and WGL Holdings, Inc., and more.

DGS multiplies the environmental and financial benefits of the County's sustainability efforts by investing a portion of the cost savings into new sustainability initiatives. This investment in people and projects such as the County's growing solar energy initiative and implementation of low and no cost energy saving opportunities in County facilities has provided incredible results in a short amount of time. We look forward to continuing to help our partners across County government expand upon these achievements throughout 2018 and beyond.

I am pleased that we can continue to partner with other Departments and support key initiatives that ensure Montgomery County continues to deliver nation leading government services while greening our community.
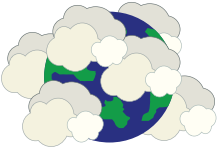
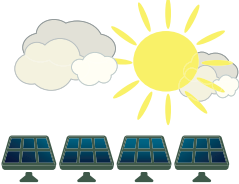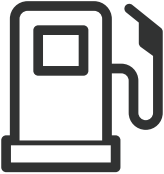The Office of Energy and Sustainability Team. From left to right: Eric Coffman (Chief), Leah Miller, Valerie Myers, Odohi Ettah, Chris Weatherly, Michael Yambrach, Ryan Sheppard, Cindy Myers, and Sharon Ossi.

superior government service with the smallest possible environmental footprint

EXECUTIVE SUMMARY/ THE YEAR IN REVIEW

This report highlights the progress and accomplishments of Montgomery County's green government initiatives through Fiscal Year (FY) 2017. For more details, as well as our latest green government news, please visit **www.montgomerycountymd.gov/dgs-oes.**
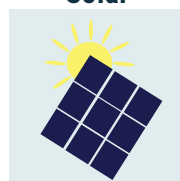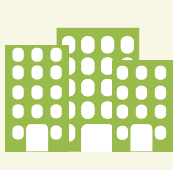
The Challenge	Our Targets	Our Accomplishments	
Greenhouse gas levels are currently 400 parts per million (ppm). Climate scientists say the levels need to be reduced to 350 ppm to avoid the negative impacts of climate change. (Source: United Nations Intergovernmental Panel on Climate Change)	Reduce greenhouse gas emissions 80% below FY2005 levels.[1]	**Achieved Carbon Neutrality**	As of FY16, Montgomery County has achieved carbon neutrality for County government buildings and fleet operations.
Electricity generation is the largest source of greenhouse gas emissions in the U.S. (Source: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions)	Generate emissions-free electricity by installing six megawatts of solar projects on County facilities.	**Installed 5.3 megawatts**	of solar projects on County facilities. Installation of an additional 5.7 megawatts of solar is underway.
Buildings account for 40% of U.S. energy consumption and 39% of CO_2 emissions. (Source: U.S. Green Building Council)	Improve energy efficiency of buildings to maximize savings and greenhouse gas emissions reductions.	**Saved $1.5M**	on utilities and reduced greenhouse gas emissions by 9,375 metric tons through energy efficiency upgrades to buildings since FY2013.
In 2015, the U.S. used 385 million gallons of petroleum a day for vehicles. (Source: https://www.eia.gov/tools/faqs/faq.cfm?id=307&t=11)	Reduce petroleum consumption of vehicles in the County's fleet 20% over FY2014 levels by 2020.	**Saved 395,150 gallons**	of fuel representing a 7.4% reduction in petroleum use compared to FY2014 levels.
Marylanders sent 6.11 lbs of waste to landfills each day — 2.8 lbs more than the average person in the U.S. (Source: Maryland Dept. of the Environment Zero Waste Plan)	Divert 70% of waste from landfills.	**~61% waste diverted**	through recycling.[2]

1 This goal for reducing greenhouse gas emissions is based on the County's 2009 Climate Protection Plan. On 12/5/17, Montgomery County Council passed the Emergency Climate Mobilization resolution, which accelerates the greenhouse gas reduction goals. The new goal will be addressed in the FY18 Sustainable Government Operations Report. As of FY2016, Montgomery County's combined energy efficiency, renewable energy investment and energy purchases have resulted in a carbon neutral government.
2 Includes all Montgomery County businesses, residences, and government facilities.

FINANCIAL STEWARDSHIP

Not only has Montgomery County shown leadership in environmental sustainability, we also strive for excellence in stewardship of financial resources. The Department of General Services, including staff from the Office of Energy and Sustainability, the Division of Building Design and Construction, and the Division of Facilities Management, have cumulatively saved more than $7 million from FY2013 through FY2017. With the addition of solar energy systems, energy efficiency projects, and water saving projects planned through FY2019, we expect to save more than $70 million over the next 20 years.

Billing Recovery	**FY2017 Savings $117,289** **Cumulative Savings $664,511** Analyzed utility bill information and recovered funds from billing mistakes and contractor use during building construction. Billing error recovery from electric, gas, and water/sewer utilities.	**Sub-Meter Installation**	**FY2017 Savings $189,977** **Cumulative Savings $387,493** Installed water sub-meters on the cooling towers of several facilities. Sub-meters show the amount of water lost to evaporation and result in reduced sewer charges.
Grants & Incentives	**FY2017 Grants $264,024** **Cumulative Grants $3,235,446** Secured grants and incentives for energy saving projects in County facilities.	**Solar**	**FY2017 Savings $191,886** **Cumulative Savings $445,015** Secured solar power purchase agreements from solar panels installed on County facilities in 2016-2017.
Energy Efficiency	**FY2017 Savings $402,432** **Cumulative Savings $1,446,898** Saved on utility costs from energy savings projects in County facilities.	**Demand Response**	**FY2017 Savings $17,448** **Cumulative Savings $216,072** Participated in demand response, where the County takes action to reduce energy demand in select buildings during periods of peak energy demand, usually on the hottest summer days.
Energy Purchasing	**FY2017 Savings >$550,000** **Cumulative Savings >$775,000** Negotiated electricity supply contract to save costs on electricity in County facilities from mid-FY2016 through FY2018. An additional $550,000 in savings is expected in FY2018.		

* Cumulative savings includes FY2013 through FY2017

ENERGY AND CLIMATE

I n the 2009 Climate Protection Plan, Montgomery County set a goal to reduce greenhouse gas emissions to 80% below the baseline FY2005 levels across the community. As of FY16, Montgomery County government achieved carbon neutrality for County government facilities and fleet vehicle operations.[3]

Baseline	Goal	Current Status
114,000 Metric Tons in FY2005	**22,800 Metric Tons** 80% Reduction by FY2050	**ACHIEVED!** Montgomery County Government operations have been carbon neutral since FY2016
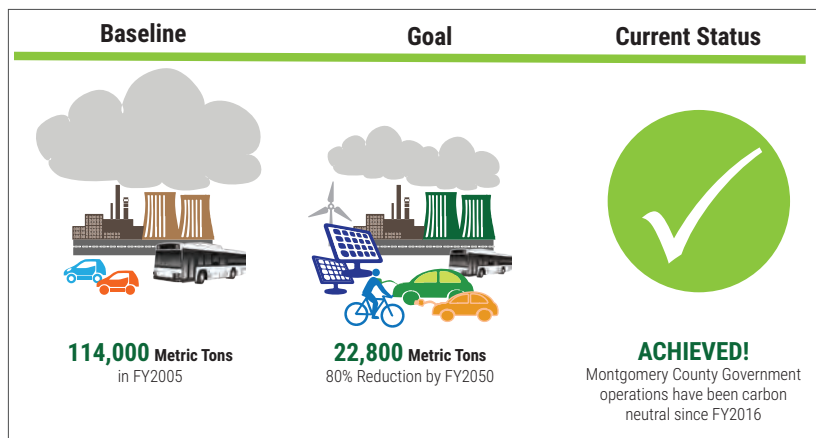
SOCIAL COST OF CARBON

The social cost of carbon is a measurement, in dollars, of the global environmental, health and economic impact of emitting a ton of carbon dioxide into the atmosphere. Montgomery County is one of the first communities to incorporate the social cost of carbon into government decision-making and accountability. When evaluating a building to determine whether to improve the building's energy efficiency, the Department of General Services includes the social cost of carbon as a factor in determining the return on investment of the proposed energy efficiency improvements. More details about the County's energy efficiency projects, including the project cost, grants and incentives, utility savings, and social cost of carbon avoided annually are available in Tables 5–7. In addition, the County tracks the social cost of carbon emitted through government operations. Between FY2011 and FY2017, the social cost of carbon emitted each year from Montgomery County government operations has decreased from $2,940,000 to $0.[4] This is due to a combination of energy efficiency, local clean energy generation initiatives, and renewable energy credits. The County's long term goal is to reduce the use of renewable energy credits and to rely more heavily on reducing energy use and generating clean energy locally to achieve greenhouse gas emission reductions, minimize the social cost of carbon, and expand local jobs.

3   On 12/5/17, Montgomery County Council passed the Emergency Climate Mobilization resolution, which accelerates the greenhouse gas reduction goals. The new goal will be addressed in the FY18 Green Government Report.

4   Social cost of carbon assessment is required by Bill 5-14.

ENERGY EFFICIENCY

Montgomery County uses the latest technology, innovative financing, and data analysis to maximize the energy efficiency of its buildings. County staff closely monitor utility bill data of more than 425 buildings to identify opportunities to improve energy efficiency through cost efficient upgrades of lighting fixtures, heating and cooling systems, and plumbing fixtures. In addition, Department of General Services (DGS) staff use building controls to make rapid adjustments in response to changing weather conditions and customer needs, saving energy without compromising comfort.

$1.5 million amount Montgomery County has saved on utilities from FY2013–FY2017 by improving the energy and water efficiency of its existing facilities.

>$54 million amount the County expects to save over the next two decades as a result of energy and water efficiency projects.

ENERGY PERFORMANCE ANALYSIS AND MONITORING

The County continually monitors and analyzes the energy and water use of its operations to identify and support green government projects. Using EnergyCAP software, staff pulls data directly from utilities, eliminating paper waste, increasing data accuracy, and providing stakeholders with timely and accurate energy data. Staff then investigates and resolves specific issues discovered through utility bill analysis.

ENERGY PERFORMANCE BENCHMARKING

For the past three years, DGS benchmarked and disclosed data for the 14 applicable Montgomery County Government buildings 50,000 square feet or greater. At least two facilities met the requirements for an ENERGY STAR label. OES has applied for and received an ENERGY STAR 2017 label on Health and Human Services (HHS) Administrative Offices at 401 Hungerford Road and plans to submit an application for the HHS Piccard Drive Office Building in 2018. The data on all benchmarked facilities is available to the public through the Department of Environmental Protection's **MyGreenMontgomery.org** website.

ENERGY PERFORMANCE CONTRACTING

Montgomery County is implementing a multi-year plan to invest more than $100 million in facilities through energy performance contracting. The County is working with several Energy Services Companies (ESCo) that recommend upgrades and guarantee cost savings on utilities. Energy performance contracting enables the

SIGNATURE INITIATIVE

CONTINUOUS ENERGY IMPROVEMENT PROGRAM

In FY 2017, the County began the Continuous Energy Improvement program to identify and achieve energy savings opportunities in individual facilities. Through this program, the County continually evaluates the energy performance of its portfolio of facilities, identifies deficiencies, formulates action plans, implements low and no cost solutions and marshals resources to resolve more complex issues. The process begins with analysis of utility bills, 15-minute interval energy use data, and building automation data to identify buildings with high energy costs and potential for savings. Staff then conduct site visits, or Energy Sweeps, to collect more detailed information and look for opportunities for savings related to HVAC equipment, lighting, and operations. Each Energy Sweep identifies low and no cost solutions to yield energy savings as well as suggestions for future investments for additional energy savings. Staff have already identified buildings with the highest potential for energy savings and begun conducting sweeps and implementing solutions. The County plans to target approximately 20 buildings each year for analysis and solutions.

County to redirect electricity, heating, and cooling expenses to pay for energy saving projects without impacting the County's overall budget.

Based on the success of the energy performance contracting pilot at HHS Administrative Building, which shows a 39 percent reduction in energy consumption since FY2013, the County has increased the number of facilities scheduled for energy efficiency upgrades financed by energy performance contracting. Over the next four years, more than 25 facilities are scheduled for these upgrades, including many County libraries, recreation centers, and swim centers. The County is currently implementing several projects that are expected to be completed between FY2018 and FY2021. These energy use reduction projects are expected to save more than **$1.8M** each year, most of which will be reinvested in facility improvements, to reduce greenhouse gas emissions by more than **10,000** metric tons per year.

OTHER ENERGY EFFICIENCY PROJECTS

The County continues to improve the efficiency of building equipment through planned replacements or other projects that provide a fast payback on investment. Many of these projects involve replacing compact florescent and halogen lights with highly efficient LED lights. LED lighting projects completed in FY17 are expected to save the County more than $190,000 annually in electric bills and reduce greenhouse gas emissions as much as 1,177 metric tons each year. In addition, the County's Department of Transportation plans to retrofit its 25,600 streetlights to highly energy efficient lighting

over the next three years, with anticipated energy savings of more than $813,000 each year. The project also is expected to reduce greenhouse gas emissions as much as 4,800 metric tons annually.

CLEAN ENERGY PURCHASE

Since FY2016, Montgomery County government has purchased 100% of its annual electricity consumption from clean sources, specifically energy generated by wind turbines. The County also purchases credits to offset greenhouse gas emissions from its facilities.

Percent of Montgomery County Government Facilities' Energy Supply that comes from Wind[5]

FY 2014
20% Clean Energy Purchased

FY 2015
50% Clean Energy Purchased

FY 2016
100% Clean Energy Purchased

FY 2017
100% Clean Energy Purchased

5 Disclosure required by Bill 9-14
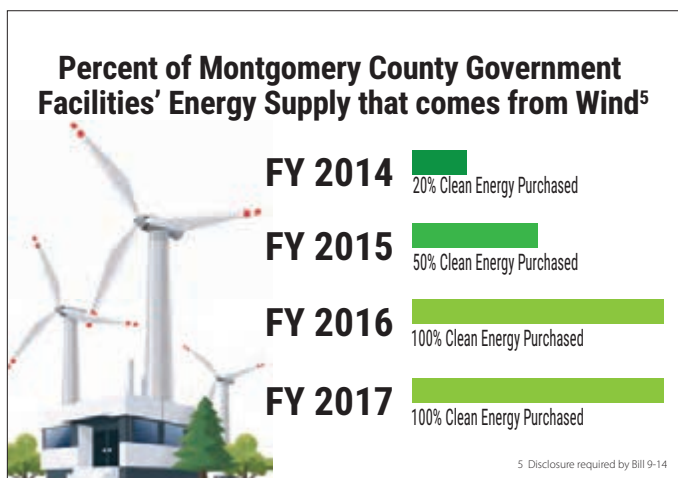
In addition, since 2004, Montgomery County has led a coalition of county agencies and municipalities to purchase electricity supply generated from wind energy. Current participants include Montgomery County Government, Montgomery County Public Schools, Montgomery College, the Maryland National Capital Park and Planning Commission, Chevy Chase Village

The County-led purchase currently ranks fourth among local governments and 22nd among all national purchasers (including Fortune 500 companies) tracked by the U.S. Environmental Protection Agency's Green Power Partnership.

ENERGY EFFICIENT LIGHTING IMPROVES WORKING CONDITIONS

LED lights improved working conditions and provided annual energy savings at the Brookville Maintenance Facility in Silver Spring — a bus maintenance operation that runs 24 hours a day, 365 days a week. The lights save the County $32,000 a year on electric bills and reduce greenhouse gas emissions as much as planting 4,700 trees. They also improve employee safety and productivity.

Section 5, City of Takoma Park, Town of Kensington, and Town of Somerset. The County also facilitates purchase for the Washington Suburban Sanitary Commission (WSSC) and for the Cities of Rockville and Gaithersburg who report separately.

22nd
largest clean energy purchase among all national purchasers

4th
largest clean energy purchase among local governments
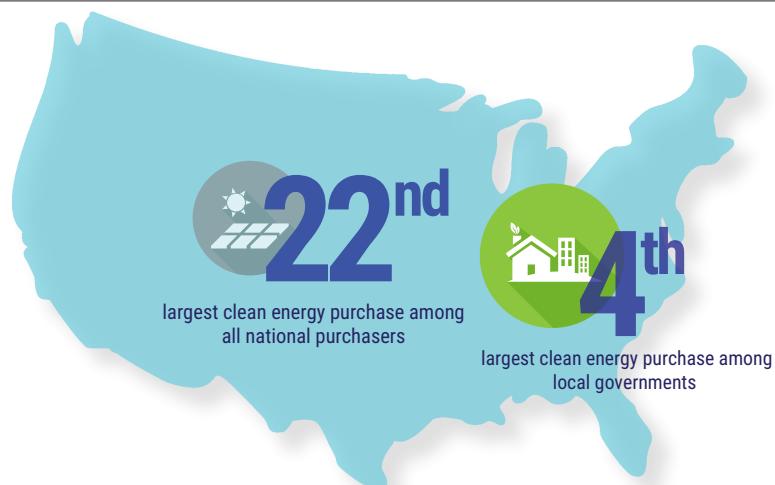
SIGNATURE INITIATIVE

SOLAR

Over the past year, Montgomery County made excellent progress on its multi-year goal to install six megawatts of solar power on County facilities. Based on projects underway or under contract, the County will greatly exceed that goal, installing an anticipated 11 megawatts across our portfolio. Through grants and power purchase agreements, Montgomery County benefits from low-cost energy with no upfront costs or responsibilities to maintain the solar energy generation systems.

5.3 Megawatts Installed
as of Sept. 2017

88% Complete

Goal: 6 Megawatts

In FY17, solar panels installed on County facilities generated more than 1.9 million kilowatt hours of electricity and reduced greenhouse gas emissions as much as planting nearly 36,000 trees.

Montgomery County's solar initiative is innovative because it fosters educational opportunities. The initiative includes projects in neighborhoods across the County and across a wide range of facilities, including libraries, recreation centers, child care centers, correctional facilities, and offices. The contract also is an ideal model for other government agencies to easily initiate their own solar energy projects.

ENERGY INDEPENDENCE THROUGH SOLAR POWER

County Executive Isiah Leggett, County Councilmember Roger Berliner, County Councilmember Marc Elrich, and Department of General Services Director David Dise celebrated energy independence at the Montgomery County Correctional Facility, home to the County's largest solar project completed through the end of 2017. The project includes two ground-mount and one rooftop array and is expected to produce 3.5 million kilowatt hours of electricity each year, enough to provide more than 60 percent of the electricity used by the facility. This project is part of a larger initiative to install solar on other County properties, moving the County significantly closer to independence from both the power grid and the rising cost of electricity.

SOLAR CANOPIES AT HOLIDAY PARK SENIOR CENTER

The project is expected to:

- **generate enough energy each year to power 45 homes**
- **save the County $36,000 each year on electricity**
- **reduce greenhouse gas emissions as much as planting 8,000 trees**

The solar project at Holiday Park Senior Center benefited visitors by creating covered canopies over the parking lot, providing shade, shelter from rain and snow, and excellent night time lighting conditions. Department of General Services Director David Dise joined Department of Recreation Director Gabriel Albornoz to celebrate the completion of the project with County seniors. This project is one of the first captured by extensive film footage showing the progress of project construction. An intern specializing in videography produced a brief documentary video about the project.

Annual Solar Energy Generation on Montgomery County Facilities (kWh)

2012	350,000
2017	1,865,009

Visit the Office of Energy and Sustainability website at **www.montgomerycountymd.gov/dgs-oes/SolarProjects.html** to see how much energy the County's solar panels are generating in real time.

FY 2017 Energy Saved = ⚡ 1,865,009 Kilowatt hours

Equivalent of:

1,388 metric tons of GHG reduced

297 cars off the road

208 homes powered

35,971 trees planted
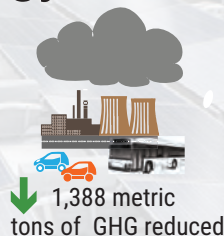
FY 2017 Savings $191,886

Amount expected to save annually once all are on-line:

$750,000

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GREEN BUILDINGS

The large amount of energy required to heat, cool, and light buildings is one of the reasons they account for 40 percent of greenhouse gas emissions nationwide. Rain and snowmelt runoff from the hard surfaces of roofs and parking lots increase the risk of flash flooding and pollutants to local streams. Renovating or building a new facility involves a large amount of construction materials, all of which need to be manufactured and transported to the site. Buildings provide such an enormous opportunity to conserve resources, reduce pollution, and make our communities more sustainable. Recognizing this opportunity, all new County government buildings over 10,000 square feet are designed and constructed to achieve a minimum Leadership in Energy and Environmental Design (LEED) certification of Silver[6]. Green building elements include energy efficiency, renewable energy, minimizing water pollution, recycled and locally sourced building materials, water conservation, and providing transportation alternatives. As of July 2017, Montgomery County has built five LEED Silver and 11 LEED Gold certified buildings. In December 2017, Montgomery County adopted the International Green Construction

11 Gold
5 Silver

Montgomery County Buildings
LEED CERTIFIED as of July 2017

LEED™ stands for Leadership in Energy and Environmental Design, and is a voluntary, consensus-based, market-driven green building rating system. It is based on existing, proven technology and evaluates environmental performance from a "whole building" perspective. LEED™ is a self-certifying system designed for rating new and existing commercial, institutional, and multi-family residential buildings. There are four rating levels: Certified, Silver, Gold, and Platinum.

Code (IgCC) to replace the LEED requirements, which lowers the threshold to new commercial buildings over 5,000 square feet and places even more focus on reducing energy consumption[7].

6   Montgomery County Green Building Law, 2006 L.M.C., ch. 44, § 2
7   Executive Regulations 21-15AMII, Council Bill 19-17.

Want to see green building features up close? Watch the County's video tour of White Oak Community Recreation Center in Silver Spring to see the building's green roof, porous pavement, geothermal heating and cooling system, and daylighting in action and to hear from experts who helped design the building and manage the programs it offers.
http://www.montgomerycountymd.gov/dgs-oes/ MediaVideo.html

GAITHERSBURG LIBRARY is a great place to see many of the County's green building features in action. Visitors can see the green roof and the rooftop solar panels through the windows on the top floor. Porous pavement is used in the parking lot to slow and filter stormwater runoff to reduce flooding and pollution to local streams. The new building reused some of the foundation of the

old library, saving materials and reducing pollution from ground disturbance. The building makes excellent use of daylight. Large, strategically placed windows reduce the need for artificial light. Nearly all of the wood used in the building and furnishings was harvested sustainably.

SMART GROWTH

The Smart Growth Initiative (SGI) is an award-winning comprehensive program initiated by County Executive Isiah Leggett that will provide substantial economic opportunities for future growth in Montgomery County. The program is an investment strategy for County government facilities, economic development, and affordable housing. The SGI prioritizes replacing and modernizing antiquated public facilities, creating transit-oriented development, co-locating related building uses, and constructing thousands of new affordable housing units. In addition, the initiative seeks to redevelop brownfield sites; restore landmark buildings; protect the Agricultural Reserve; encourage higher paying jobs in a transit-oriented bioscience enclave; and maintain a competitive, resilient, and sustainable economy.

Shady Grove Westside, an integral Public Private Partnership that is part of the SGI, includes the redevelopment of formerly industrial public property into a residential community with retail on Metro-adjacent land. The project includes over 20 percent affordable units available at a variety of income levels. An ongoing project, accomplishments in FY17 related to the public infrastructure include completion of a shared use path and

other pedestrian improvements to Crabbs Branch Way and installation of a pedestrian crossing between the new development and the Metro station. These improvements encourage and enable safe walking and biking and aim to improve access to public transit for current and future County residents.

GREEN BUILDING HIGHLIGHT: PROGRESS PLACE

Progress Place is a multi-functional facility that has served downtown Silver Spring's low-income and homeless populations since 2000. Housed in what was originally a commercial bakery, eventually these programs expanded to the point that the building could no longer adequately meet the needs of the community members it served. DGS partnered with local developer Washington Property Company to design and construct a new, expanded Progress Place on an underutilized County-owned surface parking lot, allowing the County to maximize the use of publicly-owned land without increasing the impact of stormwater runoff on local streams. The new facility includes 21 personal living quarters for persons transitioning out of homelessness. The new Progress Place also includes expanded space for nonprofit organizations under contract to the Department of Health and Human Services to provide meals, shelter, laundry and shower facilities, counseling, job training, medical services, and clothing to Montgomery County's most vulnerable populations. Notably, the new facility is certified LEED Silver. The site of the former Progress Place will be redeveloped by Washington Property Company as a high-rise residential development that will include more than the required amount of affordable housing units in metro-accessible downtown Silver Spring. Additionally, both Progress Place and the private residential project obligate the developer to build a section of the Metropolitan Branch Trail adjacent to the respective projects, contributing to the completion of a major hiker-biker trail in the Washington region.

RESILIENCY AND ENERGY POLICY

RESILIENCY

Montgomery County is improving its ability to anticipate and quickly adapt to extreme weather, economic downturns, and natural and human-made disasters. Reducing energy use and increasing on-site power generation at critical facilities ensures that Montgomery County can keep residents safe and provide needed services in spite of power outages. Resilient County facilities also relieve pressure on the power grid, reducing blackouts and brownouts during times of peak electricity use.

INCREASED RESILIENCY AND RELIABILITY OF THE UTILITY GRID

Montgomery County continually advocates to increase the resiliency and reliability of the utility grid. As part of the merger of Exelon Corporation and Pepco Holdings Inc., Pepco committed to accelerate improvement of annual reliability performance metrics, including possible financial penalties if targets are not achieved. The company has made significant progress towards achieving those targets and is on its way to providing nation leading reliability.

Also stemming from the merger, the Maryland Public Service Commission (MD-PSC) has initiated a Grid-of-the-Future proceeding. The effort aims to foster the adoption of new clean energy technologies and offer greater customer choice. Grid modernization efforts aim to ensure that electric distribution systems in Maryland are customer-centered, affordable, reliable,

and environmentally sustainable. The Grid-of-the-Future will examine opportunities to transform the electric distribution grid, including the incorporation of smart-grid technology, microgrids, renewable resources, and distributed generation. For more information, visit **www.psc.state.md.us/transforming-marylands-electric-grid-pc44/.**

ENERGY POLICY

Understanding that cost effective and reliable utility services are essential for the well-being and economic development of the community, Montgomery County has consistently advocated that electric utilities perform in the top 25 percent of their peers nationwide. The County Executive convened a workgroup of experts, resulting on a report on key improvements Pepco (which serves the bulk of Montgomery County) should implement. Through the County's continued advocacy, Pepco's reliability has improved dramatically and it is on its way

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to providing nation-leading reliability. Montgomery County has advocated for other improvements to utility services and direct benefits for the community and continues to advocate before the MD-PSC to ensure that Pepco and other utilities remain progressive.

DGS, along with the Office of the County Attorney, supports high profile energy policy initiatives on behalf of the County Executive's Office, including initiatives resulting from the merger of Pepco Holdings Inc. and Exelon Corporation. DGS is coordinating the administration of over $41 million of funds to the

County to create programs benefiting Pepco customers in Montgomery County. These funds will provide seed capital for energy-efficiency through the Montgomery County Green Bank, weatherization for low-income consumers, energy awareness programs, and workforce development programming. Additional benefits from the merger include a $100 bill credit per Pepco residential customer, improvements in utility reliability and recreation infrastructure, investments in energy-efficiency, renewable energy, and job creation.

SIGNATURE INITIATIVE

MICROGRIDS

In FY17, Montgomery County initiated a process to improve the resiliency of critical facilities by beginning to install microgrids at two key public safety facilities: Public Safety Headquarters (pictured above) and Montgomery County Correctional Facility. Microgrids are on-site clean power generation systems that allow critical operations to run independently of the power grid. Microgrids combine technologies such as solar panels, combined heat and power generation systems, batteries, and advanced controllers that include built in cyber-security. Microgrids are resilient because they allow facilities to generate their own power and run uninterrupted during major grid outages.

Groundbreaking for the microgrid at Public Safety Headquarters began in July 2017. Both projects are expected to be completed by the end of 2018. When completed, the microgrid at Public Safety Headquarters is expected to generate 11.4 million kilowatt hours of clean and low emissions energy and will reduce greenhouse gas emissions as much as taking 680 cars off the road. The project design will include two megawatts (MW) of solar photovoltaic canopies mounted over the existing parking lot. In addition, the project will upgrade the existing facility generator bank, allowing generators to provide electrical and thermal power to the facility.

The County is currently reviewing options for installing similar microgrid systems at additional County facilities. Montgomery County also is working with utilities to develop microgrids for the community. For example, the County is working with Pepco to plan a public purpose microgrid in Rockville that will ensure key facilities, including City and County buildings, grocery stores, gas stations, pharmacies, and other important services remain open and available to the public during major power outages. The Rockville microgrid proposal has been submitted to the MD-PSC by Pepco for review and approval.

TRANSPORTATION

FLEET FUEL CONSUMPTION

Montgomery County's comprehensive Green Fleet Strategy combines sound management, fleet rightsizing, alternative fuels, and innovative technology to achieve a 20% reduction in petroleum consumption by 2020. In the last three years, Green Fleet efforts have saved 395,150 gallons of fuel representing a **7.4% reduction in petroleum use since FY14.**

County Fleet Vehicle Fuel Use
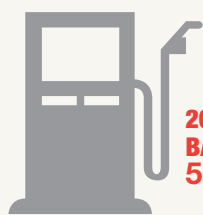
**2014
BASELINE:
5,372,927 Gallons**

**2016
2.4% REDUCTION:
5,241,238 Gallons**

**2017
7.4% REDUCTION:
4,977,777 Gallons**

**2020 GOAL
20% REDUCTION:
4,298,342 Gallons**

ELECTRIC AND OTHER LOW EMISSION VEHICLES AND INFRASTRUCTURE

In FY17, Montgomery County purchased 16 Chevrolet Bolt sedans. These are 100% electric and have an approximately 200 mile range on a single charge. With the addition of the Chevy Bolts, Montgomery County now has 36 electric vehicles and six plug-in hybrid vehicles. There are 16 electric vehicle charging stations for fleet use and 13 EV stations for public use at County facilities.

In addition, Montgomery County was awarded a grant in September 2017 from the Federal Transportation Administration to purchase four electric buses and charging stations.

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In FY17, Fleet replaced 25 sedans with hybrid sedans, converted six gasoline vans to hybrid, and installed idle reduction technology on 35 vehicles.

ALTERNATIVE FUELS

The County maintains a fuel neutral approach by selecting fuels to achieve desired emissions reductions. The County has made extensive use of alternative fuels, in addition to electric vehicles. The County uses Ultra Low Sulfur Diesel instead of biodiesel due to performance issues discovered in biodiesel pilots. The County's primary focus is a fleet that is fuel neutral, fuel efficient, and environmentally sensitive. The County has embraced compressed natural gas (CNG) as an effective, lower emissions alternative to diesel for transit and heavy duty vehicles. Currently 29 percent of the County's bus fleet is fueled by CNG and the County operates two CNG fueling stations. An additional 19.5 percent of the County's buses are diesel hybrid electric.

FLEET COMPOSITION AND FUEL EFFICIENCY

Montgomery County maximizes fleet efficiency by ensuring each vehicle is the appropriate size for its intended use. One of the ways the County does this is through an annual Sport Utility Vehicle inventory. This includes information on the type of work currently performed with the vehicle and DGS Division of Fleet Management Service's recommendations for a more fuel efficient replacement vehicle if appropriate. As fleet vehicles are replaced, DGS works with each County department to select the most appropriate and fuel efficient vehicle for the required function. Currently, the County's fleet includes 433 SUVs (293 for public safety and 140 for administrative uses) out of a total fleet of 3,342 vehicles. From FY12-FY17, average fuel economy of the administrative fleet[8] increased from 14.31 MPG to 15.67 MPG.

EMPLOYEE TRANSIT

DOT offers employees a number of benefits to reduce the environmental impact of employee commutes to work. In addition to telework options, employees have access to free Ride On bus service, discounted membership in Capital Bikeshare, access to the Commuter Connections regional ridesharing program, and reimbursement for regular public transit use through the County's Get-In program. New in 2018, the County is offering employees a new Commuter Transit Flexible Spending Account benefit that allows County employees to save money on taxes by deducting pre-tax income from their paychecks to use for approved transit expenses.

TELEWORK

Under the leadership of the Office of Human Resources (OHR), Montgomery County piloted a formal employee telework program from March 2016 – February 2017. Following the successful pilot, telework was implemented more widely across the County with the official telework policy going into effect July 25, 2017. As of November 2017, there are 322 employees participating in the telework program, typically one day per week or on an as-needed basis. This reduces miles driven to work and lowers greenhouse gas emissions associated with County operations.

TELECONFERENCES AND WEBINARS

The Department of Technology Services (DTS) has ensured County staff have the tools they need to collaborate and work remotely, including Skype for Business and Office 365 software. In the past year, County-wide use of Skype for Business teleconferencing increased 13 percent. DTS uses the software for its bi-monthly staff meetings, increasing meeting attendance by 36 percent while cutting the number of attendees driving to meetings in half. Other departments with staff in multiple locations across the County also are replacing

in-person meetings and training with online options. The OHR Live Well program uses teleconferencing for monthly Wellness Champion meetings. Libraries use online training modules that allow library staffers to complete trainings in their respective branches rather than traveling to a central administrative office. In FY18, Libraries are planning to modify delivery routes to decrease driving time between stops, saving gasoline and reducing greenhouse gas emissions.

BICYCLE COMMUTING

Montgomery County is committed to bikeable, walkable, transit-oriented communities. In FY2017, DOT constructed separated bike lanes on both sides of Nebel Street between Randolph Road and Marinelli Road. This is part of a larger project to improve bicycle access in the Pike District, including building a continuous protected bike lane connection from Montrose Parkway to the White Flint Metro Station. DOT also installed bike lanes in downtown Silver Spring from Spring Street and 2nd Avenue to Cedar Street and Wayne Avenue. The bike lanes have a green surface and flex posts to prevent cars from entering.

In addition to improving safety and access for cyclists, the County also is making it easier for people to use bicycles for transportation by installing bikeshare stations. As of December 2017, the County has 72 bikeshare stations. The County also is piloting dockless bikeshare options in Silver Spring. Dockless bikeshare does not rely on fixed bike stations. Customers use a mobile phone app to locate a nearby bike. When they are finished, they park the bike on any publicly-owned land within a specified geographic area.

Montgomery County also promotes bicycling as a commuting option with outreach and events. This

year's D.C. area Bike to Work Day broke records as one of the nation's largest Bike to Work Day events with approximately 18,700 cyclists visiting 85 pit stops in the Washington metropolitan region. Montgomery County sponsored six pit stops.

SMART PARKING

Montgomery County uses the latest technology at its most popular public parking garages that can guide drivers to available spaces, saving driving time and reducing greenhouse gas emissions. In addition, smart parking meters in Bethesda, Silver Spring, and Wheaton use solar power and rechargeable batteries, saving energy and reducing waste. DOT has installed 2,300 smart meters, an increase of more than 1,000 since last year.

In addition, DOT has expanded the number of public parking spaces reserved for car sharing services to 55. Car sharing allows those who only need a car occasionally to give up their cars and use public transit or other alternatives for daily commuting. More information about car sharing locations is available at **http://www. montgomerycountymd.gov/DOT-Parking/Carsharing.html.**

BUS COMMUTING

DOT has made bus commuting more attractive to County employees and the public. Starting in October 2017, the County began offering Ride On extra service on Rte. 355, which provides a faster option for bus riders during rush hours. The service makes only 12 stops between the Medical Center Metro Station in Bethesda and the Lakeforest Transit Center in Gaithersburg. The service has amenities such as WIFI, USB charging, Infotainment and extra padded seats. The fare is the same as for normal service routes. The initial ridership is already starting to exceed the projected figure of 1600 riders per day.

Future plans include a Bus Rapid Transit (BRT) System that will operate along U.S. 29. Montgomery County was selected by the U.S. Department of Transportation for a $10 million grant to help fund the 14-mile BRT. The new service will provide a high quality, environmentally-friendly transit alternative to commuters.

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8   Administrative fleet includes vehicles used by County staff for routine business. This does not include police cars, fire trucks and other public safety fleet vehicles, buses, vans, or heavy duty vehicles. Additional details on fuel economy trends for all categories of County fleet vehicles are available in Table 9.

COMMUNITY ENGAGEMENT AND PARTNERSHIPS

Montgomery County government employees, nearly 10,000 strong, can have an enormous impact on cleaning up pollution and reducing waste through everyday actions at work. In FY17, employees across the County engaged in recycling, purchasing environmentally preferable goods and services, and donating food, money, and surplus office supplies to community members in need.

COMMUNITY SERVICE

Each year, Montgomery County employees give back to the community through charitable donations and volunteer service. The County runs an employee giving campaign each fall, providing an on-line giving platform through a private partner and covering the modest administrative fee so that every dollar employees give goes to the nonprofit organizations they support. In calendar year 2017, County employees gave more than $280,000 to charities through the campaign – an increase of nearly $20,000 over the previous year. In addition to contributions by individual employees, County Departments host charity drives and volunteer service opportunities in partnership with local nonprofit organizations. Partners include a wide variety of nonprofit organizations with missions to improve the environmental, social, and financial health of the community.

LIVE WELL

Montgomery County's employee wellness program engages employees in eco-friendly behaviors, too. Virgin Pulse, the wellness program's information and rewards system app, includes daily habit challenges related to sustainability, such as a waste-free lunch challenge and a conserve energy challenge. In FY18, DGS worked with OHR's Wellness Program to promote a green and healthy transportation webinar for employees and to promote national car free day. DGS will continue to partner with Live Well in the coming year to engage employees in healthy, eco-friendly behaviors.

PRESENTATIONS

County staff participated in several high-profile conferences and webinars over the course of the year to share information and lessons learned about green government operations with other local governments and businesses across the country. Presentations focused

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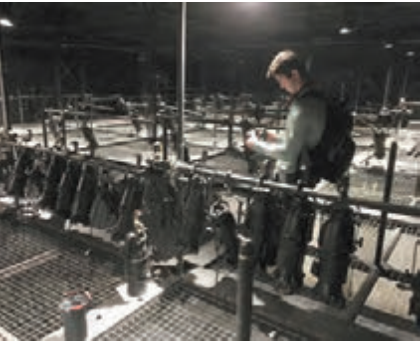
on the County's leadership in renewable energy, improving resiliency of County government facilities and operations with microgrid technology, and financing major energy projects. Conferences and webinars included those for American County and City Magazine, the National Association of Counties, the North East Clean Energy Council, National Association of State Energy Officials, the Metropolitan Washington Council of Governments, and more.

VIDEOS

The County produced several brief documentary videos to share the story of its green government initiatives. Videos, available at **http://www.montgomerycountymd.gov/dgs-oes/ MediaVideo.html,** feature the LED lighting upgrade and safety improvements at Brookville Vehicle Maintenance Facility, solar canopies over parking at Holiday Park Senior Center, green building features of the White Oak Community Recreation Center, and the DGS Facilities Energy Management team.

GREEN GOVERNMENT NEWS

Follow the Office of Energy and Sustainability for the latest Montgomery County green government news.

https://www.facebook.com/ MocoGreenDGS/

https://twitter.com/MoCoOES.

SIGNATURE INITIATIVE

WORK GREEN

Work Green is an employee engagement program piloted by DGS and the Department of Environmental Protection (DEP) to encourage staff to take eco-friendly actions at work and at home. The program engages employees in taking simple actions related to quarterly themes, such as Reduce Waste, Save Energy, and Buy Green. DGS and DEP staff develop educational posters, newsletters, and events related to each theme. Green teams customize the program for their own departments and divisions. DEP, with support from DGS, started the first employee green team under the Work Green program. Over the course of FY17, the green team prioritized action items, developed education materials and branding, surveyed staff, held a kick-off event, encouraged employees to sign an eco-action pledge, and conducted a waste stream audit. In FY18, the group began a quarterly newsletter, held a brown bag on green commuting options in partnership with DOT, and celebrated America Recycles Day by maximizing reuse and recycling of office supplies during a clean-out event. In FY18, the County will pilot the Work Green program across DGS. DGS plans to make the Work Green program available to all County Departments within a year.

WATER

WATER CONSERVATION

Montgomery County continues to audit high water use buildings to identify opportunities for water savings through installation of high efficiency fixtures and other improvements. In addition, water efficiency improvements are included as one of the measures used in energy performance contracting to achieve improvements in energy efficiency of older facilities. Through energy performance contracting, the County has already reduced annual water use in two buildings by more than 1.1 million gallons, saving the County more than $11,000 a year in water bills and an additional $12,000 per year in energy costs to heat the water. These savings are realized by replacing older toilets, urinals, and sink aerators with high efficiency fixtures.

POLLUTION PREVENTION

When rain and snow melt moves across roofs, parking lots, streets and other hard surfaces, it picks up oil, heat, and other pollutants on its way to local streams and rivers. This stormwater moves quickly over hard surfaces and may contribute to flooding.

Montgomery County treats all stormwater in new construction according to state and County regulations, capturing 90 percent of the average annual rainfall and removing 80 percent of pollutants. In addition to treating stormwater on new construction, the County installs new stormwater treatment structures on older facilities that were not previously being treated to today's standards, improving water quality in the process. This includes installing rain gardens, bioswales, and other techniques on the grounds of County facilities through the RainScapes Program and the Capital Improvements Program, as well as using street rights of way for treatment through the Green Streets program.

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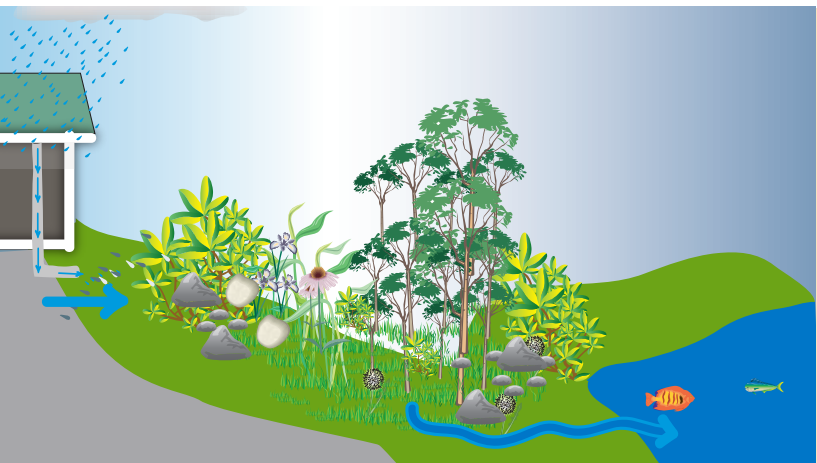
Acres of Hard Surfaces Treated for Stormwater Runoff by Projects on County Property

2016: 5.31 Acres
2017: 8.36 Acres

Expected 2018: 18.39 Acres

As of FY 2017, Montgomery County has treated eight acres[9] of impervious surfaces in older neighborhoods (built before current stormwater regulations were in place) by installing stormwater management facilities on County property.

GREEN STREETS

Green Streets are built in the grassy area along a street which is County-owned space, often includes a sidewalk, and is called the public right of way. They are attractive and help improve biodiversity by attracting birds and other pollinators. Green Streets are targeted toward older neighborhoods built before current stormwater management regulations were in place to bring them up to the level of treatment found in newer areas.

In a typical Green Street project, stormwater runoff from the roadway is diverted into an inlet opening in the curb, and is filtered through a mixture of highly permeable soils (sand, mulch, compost), then stored in an underlying gravel layer before percolating into the groundwater or entering into the storm drain system that drains to a nearby stream. Runoff has an opportunity to cool down while the plants help break down and absorb pollutants. Although some Green Street systems may see water ponding for a few hours after a storm, they are designed to drain any standing water before mosquitos can breed.

STORMWATER MANAGEMENT FACILITY MAINTENANCE

Stormwater management facilities require regular maintenance to make sure they are functioning properly. DEP inspects and maintains more than 1,100 stormwater management structures on County property. Stormwater ponds are inspected and maintained every three years. Environmental site design facilities such as rain gardens, conservation landscapes, pervious pavement, and green roofs are maintained monthly with weeding, trash removal, plant and mulch replacement, and sediment removal as needed.

9 Does not include acres treated through the Green Streets program.

The Amherst Avenue curb extension, completed in December 2014, is a Green Streets project that combined two County interests — keeping local streams healthy and ensuring bus rider safety. The curb was extended into the parking lane and pavement is replaced with plants and soil mix to slow water and filter out pollutants.

WASTE REDUCTION

Montgomery County continues to reduce paper waste from government operations, eliminating more than 6.7 million sheets of paper waste in FY2017. The majority of the paper reductions quantified in this report are from the County's state-of-the-art print management system and from the Department of Permitting Services' conversion to an electronic permit application and review system called ePlans. In addition, Montgomery County Public Libraries has reduced paper use by using text notifications to customers when hold materials become available and by using digital processes for administrative functions. The Department of Finance and DGS continue to use digital processes for routine County business.

FY 2016
4.4 million sheets of paper saved in FY 2016

Equivalent of:

- 608 Trees saved
- Reduced greenhouse gas emissions by 267 metric tons
- 5 million gallons of water saved during the paper production process

FY 2017
6.7 million sheets of paper saved in FY 2017

Equivalent of:

- 978 Trees saved
- Reduced greenhouse gas emissions by 46 metric tons
- 14.8 million gallons of water saved during the paper production process

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Switching to *e*Plans has saved

118 metric tons in greenhouse gas emissions

787 trees

90,048 hours of drive time

$412,716 in fuel

10 million sheets of paper
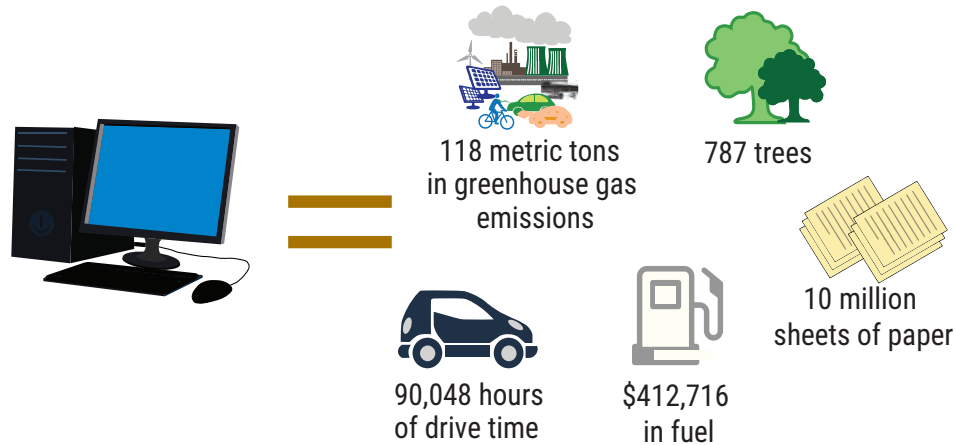
ELECTRONICS RECYCLING

Working communications devices, including cell phones, tablets, and mobile computers are critical to police operations. Verizon replaces these devices for free. Broken devices are recycled. The Police Department recycled 686 devices in FY17, bringing in approximately $7,000 to the County.

The Department of Technology Services recycles 100 percent of computer equipment at end of life, including 1,200 PCs, laptops, and tablets in FY17.

2017
Recycled **686** communication devices & **100%** of end of life computer equipment

DIGITAL SIGNAGE

In FY2017, Montgomery County Public Libraries installed digital signage in six branches. All 21 library branches now have digital sign boards to eliminate the need for paper posters or flyers. Seven other buildings also use digital signage and the Office of Public Information (OPI) plans to expand the use of digital signage into additional facilities. DGS is working with DEP, DOT and OPI to expand green government and environmental program content available on digital sign boards throughout the County in 2018.

CONSTRUCTION WASTE DIVERSION

During building demolition, Montgomery County recovers as much of the waste material as possible for reuse and recycling. For example, great care was taken to separate usable materials during the demolition of the former Public Safety Training Academy. As a result, 26,901 tons of concrete, steel, and clean masonry material were reused on site or recycled, an impressive 96 percent of the material (by weight) that was generated by the demolition.

VEHICLE REUSE AND RECYCLING

The County's Vehicle Recovery Section (VRS) with the Police Department removes abandoned, unregistered, and junk vehicles throughout the County. In FY17, 1,950 cars and trucks were towed to VRS and not reclaimed. 65 percent were sold to scrap processors. Parts including batteries, catalytic converters, starters, alternators and aluminum rims were sold for reuse or recycled. The rest of the vehicles were sold for reuse. In all, VRS recycled approximately 3,700 tons of metal in FY2017, an increase of 1,000 pounds over last year. An additional 500 items were sold, recycled, or scrapped through removal of property from auction vehicles and recovery of abandoned bicycles.

2016   **2,640 tons** recycled metal from cars

2017   **3,700 tons** recycled metal from cars

FOOD COMPOST

DEP has operated a pre-consumer food scrap recycling collection demonstration project at the Executive Office Building cafeteria since November 2011. The demonstration project diverted approximately 14.5 tons of food scraps from the waste stream each year. Last year, DEP added similar programs at the Council Office Building and the Public Safety Headquarters Building. As a result, in FY17, the amount of waste diverted increased to 25 tons, for a total of 112 tons since the project's inception.

RECYCLING

On average, County facilities are achieving a recycling rate of 41.5 percent. In FY17, DEP staff improved recycling stations near the elevators and in break rooms throughout the County's 15 story Executive Office Building in Rockville. Clearly labeled recycling bins and educational posters showing what materials belong in each bin are expected to improve recycling rates. In addition, DEP continues to provide training and educational materials for County employees and contractors to increase the amount of recyclable materials collected at all County facilities. DGS plans to work with DEP in the coming year to determine options for increasing the accuracy of recycling data in our buildings and to target recycling education and outreach campaigns.

BIODIVERSITY AND GREEN PURCHASING

BIODIVERSITY

Montgomery County improves biodiversity by conserving forests, planting native vegetation, implementing pollution prevention measures, and using eco-friendly landscaping on County-owned property.

The County maximizes benefits from its lands by planting rain gardens, Green Streets, and other stormwater management facilities with native plants that are adapted to local conditions. Native plants are lower maintenance and are able to slow and filter pollutants from stormwater while also providing natural habitat for pollinators such as butterflies, hummingbirds, and bees.

Montgomery County currently has 12 acres (the equivalent of nine football fields) of vegetated roofs on its government buildings that improve water quality of streams, prevent flooding, and provide habitat for pollinators and birds. Over the next year, Montgomery County is evaluating options to expand native canopy tree planting at County facilities to enhance habitat for birds and other wildlife, reduce stormwater pollution, and provide shade. In addition, DOT is fighting the spread of the emerald ash borer, the invasive beetle that has already killed hundreds of ash trees in local parks. DOT is fighting the beetle by releasing both parasites that prevent eggs from hatching and those that kill beetles in their larval stage.

GREEN PURCHASING

Purchasing reused, recycled, and energy efficient products can reduce waste, conserve energy and water, protect natural resources, and alleviate climate change. The Office of Procurement encourages green purchasing by providing educational information to employees through the County's internal Intranet site, coordinating major contracts to purchase green, and ensuring green options are easily searchable for employees purchasing office supplies. In FY2017, the County executed a contract for environmentally and pet friendly ice melt materials. In addition, the Office of Procurement collaborates with other regional jurisdictions on trends and best practices related to recycling and environmentally friendly products. Individual departments also provide employees information on green purchasing options. For example, Montgomery County Public Libraries are making it easier for library employees to choose green items by including information about how to purchase reused and recycled options on their redesigned Intranet site.

PRINT SHOP DIGITAL PRINTERS

DGS replaced the Xerox 1000 in the Print Shop in May 2017 with the Xerox iGen 5 digital press at no additional cost to the County. More than 80 percent of the waste the printer produces can be reused and the digital press itself can be recycled or remanufactured at end of life. The technology uses no inks. The toners are non-toxic and generate no hazardous waste. Digital press technology is an environmentally responsible choice with great print quality and speed, improving print shop efficiency.
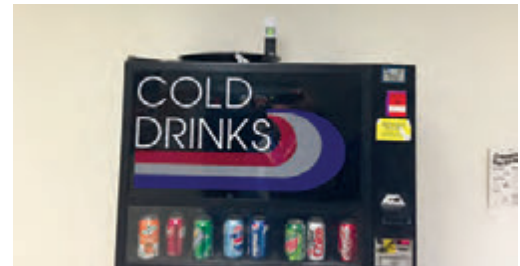
ELECTRONICS

Electronics throughout County government facilities, including all printers and copiers, PCs, laptops, and tablets are independently verified as energy efficient with ENERGY STAR qualification and Electronic Product Environmental Assessment Tool (EPEAT) certification. ENERGY STAR qualification means the equipment is among the most energy efficient options available and EPEAT certification addresses environmental sustainability throughout a product's life cycle. Toner cartridges and end-of-life equipment are recycled. In addition, the approximately 200 vending machines in County government buildings are energy efficient, including motion sensors to trigger lighting and highly efficient cooling for machines with refrigerated items. Vending machines at the Executive Office Building and the Council Office Building also exceed the 90 percent healthy vending target set in the Healthy Vending Standards regulation.

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ECO-FRIENDLY COLLABORATIVE WORK SPACES

The DGS Office of Energy and Sustainability repurposed a large individual office into a collaborative work space for six employees. The space includes a movable conference table, white boards, and a wall-mounted monitor for collaborative work and serves as a model that, in combination with telework and hoteling, could reduce building occupancy and related heating, cooling, and lighting costs, as well as reducing greenhouse gas emissions and other impacts of commuting. The redesigned office includes furniture with post-consumer recycled content and Cradle-to-Cradle Certified products. Cradle-to-Cradle certification looks at the entire life cycle of a product from raw materials and manufacturing process as well as what happens to the product after its use and includes several levels — Basic, Bronze, Silver, Gold, or Platinum. OES office whiteboards are Cradle to Cradle Certified Silver.

RECYCLED MATERIALS

According to the Office of Procurement, Montgomery County purchased six million dollars worth of products containing recycling materials in FY2017, an increase of 40 percent over FY2016.

- Copier and printer paper purchased through the County is 100 percent recycled, with 30 percent post-consumer content.

- 62 percent of all paper products the County purchased in FY2017 contained some recycled content with 99 percent containing 25–50 percent recycled content.

- $440,299 worth of recycled office supplies purchased through a contract with a small business based in Montgomery County.

- Used an average of 21 percent recycled materials, 45 percent certified sustainably harvested wood, and 31 percent locally sourced or manufactured materials in new construction between FY2012 and FY2017.

DATA TABLES

1. Greenhouse Gas Emissions (GHG) in Metric Tons (MTCO2e) from Montgomery County government operations (facilities and fleet).

Fiscal Year	GHG from Facilities	GHG from Fleet	Total GHG from Facilities and Fleet without Offsets	GHG Reductions from Renewable Energy Certificates	Total GHG from Facilities and Fleet with Offsets
2011	93,847	55,335	149,182	(33,174)	116,008
2012	100,218	59,607	159,825	(32,903)	126,922
2013	100,194	60,916	161,110	(104,042)	57,068
2014	101,638	56,021	157,658	(88,067)	69,591
2015	98,726	59,225	157,951	(73,762)	84,189
2016	96,643	63,463	160,105	194,804)	(34,699)
2017	104,930	61,416	166,346	(194,804)	(28,458)

* Facilities data are based on electricity, natural gas, and building fuel consumption based on utility bill data for all County-owned facilities as well as leased spaces that house County staff and operations, as well as County owned and operated street lights and traffic signals. Fleet data are based on petroleum, natural gas, and electricity consumption for all County vehicles, including cars, trucks, buses, and off-road and industrial equipment. Renewable energy certificates are purchased to ensure renewable energy from wind, solar, and other renewable sources are added to the grid and used by another party to offset the greenhouse gas emissions from fossil fuels.

2. Energy Use Intensity Across County Buildings by Funding Source and Department.

NDA Departments	FY14 Annual Energy Use Intensity (kBtu/SqFt)	FY15 Annual Energy Use Intensity (kBtu/SqFt)	FY16 Annual Energy Use Intensity (kBtu/SqFt)	FY17 Annual Energy Use Intensity (kBtu/SqFt)
Circuit Court	38.69	48.71	47.99	53.68
Correction and Rehabilitation	87.27	85.52	72.61	72.80
Elections	38.58	44.47	39.81	53.28
Fire and Rescue Services	100.42	106.35	90.68	94.28
General Services Maintenance Depots	14.89	15.77	14.93	18.53
Health and Human Services	75.73	69.11	65.61	58.91
Leased Buildings	46.93	50.74	49.06	84.13
Libraries	98.42	86.64	91.74	92.79
Miscellaneous Buildings	52.87	21.40	13.98	17.69
General Government[2]	141.05	143.32	137.54	123.89
Police	92.15	103.31	118.17	158.39
Sheriff's Office	86.41	98.98	83.87	83.62
Technology Services	269.08	253.50	243.22	230.08
Theater and Arts	158.13	162.99	157.36	168.91
NDA Average	**83.15**	**83.94**	**79.11**	**81.78**
Tax Supported Departments				
Recreation	136.36	148.26	144.38	149.68
Transportation	4.45	4.20	3.90	5.23
Tax Supported Average	**68.62**	**73.63**	**70.68**	**73.01**
Non-Tax Supported Departments				
DEP (Solid Waste Disposal)	46.09	46.75	36.14	77.53
DGS (Motor Pool)	210.30	235.53	217.51	270.82
Liquor	11.39	17.39	32.27	73.27
Transportation (Parking Lot District)	10.62	10.17	9.43	10.11
Non-Tax Supported Average	**16.13**	**16.07**	**15.61**	**19.03**
County-wide Average Energy Use Intensity kBtu/SqFt	**68.73**	**67.58**	**63.70**	**68.56**

1 NDA or Non Departmental Accounts include all departments that are fully funded through the County's general budget through taxpayer dollars. Tax-Supported are departments that are funded partially through tax dollars and partially through program fees. Non-Tax Supported include departments that are fully funded by program fees.

2 Includes administrative offices and other buildings that house multiple departments or County government-wide functions.

3. **Percent Reduction in Greenhouse Gas Emissions and Social Cost of Carbon from Montgomery County government operations (facilities and fleet).**

Fiscal Year	Total GHG from Facilities and Fleet After Offsets (metric tons)	Percent Change (from 2005 baseline)[3]	Social Cost of Carbon After Offsets
2011	116,008	2%	$2,540,577
2012	126,922	11%	$2,843,061
2013	57,068	-50%	$1,301,156
2014	69,591	-39%	$1,621,461
2015	84,189	-26%	$2,003,689
2016	(34,699)	-130%	$(843,181)
2017	(28,458)	-125%	$(705,763)

3 The 2005 baseline of 114,000 metric tons of greenhouse gas emissions was calculated using a subset of Montgomery County government facilities and fleet operations for which data are available.

4. **Energy Performance Benchmarking[4]**

County Building	FY16 ENERGYSTAR Score	FY17 ENERGYSTAR Score	ENERGYSTAR Score % Change	FY16 Site EUI (kBtu/ft²)	FY17 Site EUI (kBtu/ft²)	Site EUI (kBtu/ft²) % Change
MID-COUNTY DEPARTMENT OF HEALTH AND HUMAN SERVICES BUILDING [Energy Retrofit Completed]	86	91	5.8%	84.4	67.7	-19.8%
HEALTH AND HUMAN SERVICES ADMINISTRATIVE OFFICES [Energy Retrofit Completed]	87	85	-2.3%	71.8	75.8	5.6%
CIRCUIT COURT NORTH TOWER	68	67	-1.5%	65.2	67.6	3.7%
GREY COURTHOUSE[5]	62	57	-8.1%	62.0	71.6	15.5%
HOLIDAY PARK SENIOR CENTER [Energy Retrofit Planned]	58	61	5.2%	73.8	73	-1.1%
CIRCUIT COURT SOUTH TOWER [LEED Gold Facility]	44	41	-6.8%	121.7	134	10.1%
UPCOUNTY REGIONAL SERVICES CENTER [Energy Retrofit Planned]	37	42	13.5%	111.9	112.2	0.3%
PUBLIC SAFETY HEADQUARTERS	26	29	11.5%	208.7	197.1	-5.6%
EXECUTIVE OFFICE BUILDING	24	17	-29.2%	107.4	120.1	11.8%
COUNCIL OFFICE BUILDING [Energy Retrofit in Progress]	14	22	57.1%	181.2	147.3	-18.7%
ROCKVILLE LIBRARY[6]	N/A	N/A	N/A	106.0	96.1	-9.3%
GAITHERSBURG LIBRARY[6] [LEED Gold Facility]	N/A	N/A	N/A	36.8	33.2	-9.8%
GERMANTOWN LIBRARY[6]	N/A	N/A	N/A	117.2	137.9	17.7%
STRATHMORE CONCERT HALL[6]	N/A	N/A	N/A	166.2	186.8	12.4%
WHITE OAK COMMUNITY RECREATION CENTER[6] [LEED Gold Facility]	N/A	N/A	N/A	51.0	53.3	4.5%

4 The Energy Performance Benchmarking table reports data on a fiscal year basis, consistent with County planning and budgeting. In addition, the County submits benchmarking data to the Department of Environmental Protection on a calendar year basis in compliance with the County's Building Energy Benchmarking and Transparency Law. The most recent Benchmarking Law data are available at http://bit.ly/mc2016data. Additional information on benchmarking and the County's Benchmarking Law are available at **https://www.montgomerycountymd.gov/green/energy/benchmarking.html.**

5 This building was reported voluntarily. It is not part of the benchmarking mandate due to low occupancy.

6 Building type is not eligible to receive an ENERGY STAR score.

5. Planned Energy Efficiency Projects (subject to revision)

Facility Name	Fiscal Year Expected Completion	Project Type	Funding Source	Projected Annual Cost Savings ($)	Annual GHG Emissions Reductions (MTC02e)	Reduction in Social Cost of Carbon
Aspen Hill Library	FY18	Building Envelope, Demand Controlled Ventilation, Lighting Upgrade	ESCo	$7,691	42	$882
Bethesda Library	FY18	Building Envelope, High-Efficiency Transformers, Lighting Upgrade, Water Conservation	ESCo	$16,904	95	$1,995
Davis Library	FY18	Building Controls, HVAC & Lighting Upgrades, Water Conservation	ESCo	$11,640	72	$1,512
Kensington Park Library	FY18	Building Controls, HVAC & Lighting Upgrades, Water Conservation	ESCo	$7,683	38	$798
Little Falls Library	FY18	Demand Controlled Ventilation, Lighting Upgrade, Water Conservation	ESCo	$8,300	49	$1,029
Longwood Community Recreation Center	FY18	Building Controls, HVAC & Lighting Upgrades, Vending Controls, Water Conservation	ESCo	$12,945	54	$1,134
Pre-Release Center	FY18	Building Controls, HVAC & Lighting Upgrades, Variable Frequency Drives, Vending Controls, Water Conservation	ESCo	$183,317	616	$12,936
Quince Orchard Library	FY18	Lighting Upgrade, Water Conservation	ESCo	$15,311	95	$ 1,995
Silver Spring Health Center	FY18	Building Controls, HVAC & Lighting Upgrades, Variable Frequency Drives, Vending Controls, Water Conservation	ESCo	$24,923	119	$2,499
Twinbrook Library	FY18	Building Envelope, HVAC & Lighting Upgrades, Water Conservation	ESCo	$4,901	24	$504
White Oak Library	FY18	Building Controls, Building Envelope, Demand Controlled Ventilation, Lighting Upgrade, Water Conservation	ESCo	$17,098	109	$2,289
Montgomery County Correctional Facility	FY18	Domestic Water Heater Upgrade	CIP, Operating, and Other Sources	TBD	TBD	TBD
West Penthouse	FY18	TBD	CIP, Operating, and Other Sources	TBD	TBD	TBD
Black Rock Center for Arts	FY18	HVAC Upgrade	CIP, Operating, and Other Sources	TBD	TBD	TBD
Colesville Health Center Facility	FY18	Building Controls, Building Envelop, HVAC and Lighting Upgrade, Vending Controls, Water Conservation	CIP, Operating, and Other Sources	TBD	TBD	TBD
Council Office Building	FY19	Building Envelope, HVAC & Lighting Upgrades, Water Conservation	ESCo and Renovation	$210,974	1,191	$25,011
Upcounty Regional Services Center	FY19	Building Controls, Building Envelop, HVAC and Lighting Upgrade, Vending Controls, Water Conservation	ESCo	$79,588	500	$10,500
Public Safety Headquarters (PSHQ)	FY19	Cooling Tower Upgrade, HVAC System Recommissioning & Improvements	CIP, Operating, and Other Sources	TBD	TBD	TBD
Facility Maintenance Depot	FY19	Lighting Upgrade	CIP, Operating, and Other Sources	TBD	TBD	TBD
Brookville Maintenance Facility	FY19	Lighting Upgrade (Exterior)	CIP, Operating, and Other Sources	TBD	TBD	TBD
Miscellaneous Small Facilities [e.g., Fire Stations]	FY19	Lighting Upgrade	CIP, Operating, and Other Sources	TBD	TBD	TBD

Building Envelope (Window Replacement), HVAC Upgrade	CIP, Operating, and Other Sources	TBD	TBD	TBD	Annual GHG Emissions Reductions (MTCO2e)	Reduction in Social Cost of Carbon
Multiple Facilities	FY19	Chiller Sub-metering	CIP, Operating, and Other Sources	TBD	TBD	TBD
Hillandale Fire Station #24	FY19	HVAC/Electrical Upgrades	CIP, Operating, and Other Sources	TBD	TBD	TBD
Longbranch Outdoor Pool	FY20	Lighting, HVAC and Controls Upgrade	ESCo	$3,000	18	$375
Rockville Core (Grey Courthouse)	FY20	TBD	CIP, Operating, and Other Sources	TBD	TBD	TBD
Germantown Library	FY20	Lighting, HVAC and Controls Upgrades	ESCo	$57,000	328	$6,884
Long Branch Community Recreation Center	FY20	Lighting, HVAC and Controls Upgrades	ESCo	$30,000	172	$3,606
Long Branch Library	FY20	Lighting, HVAC and Controls Upgrades	ESCo	$23,000	132	$2,763
Marilyn Praisner Library	FY20	Lighting, HVAC and Controls Upgrades	ESCo	$19,000	109	$2,295
Martin Luther King Jr. Swim Center	FY20	Lighting, HVAC and Controls Upgrades	ESCo	$119,000	682	$14,330
Montgomery County Liquor Warehouse	FY20	Lighting, HVAC and Controls Upgrades	ESCo	$65,000	372	$7,821
Rockville Library	FY20	Lighting, HVAC and Controls Upgrades	ESCo	$73,000	419	$8,804
Olney Swim Center	FY21	Lighting, HVAC and Controls Upgrades	ESCo	$52,499	331	$6,951
Street Lights (DOT)	FY21	Lighting Upgrade	ESCo	$813,051	4,844	$101,718
Total				**$1,855,825**	**10,411**	**$218,631**

6. Energy Efficiency Projects Completed in FY17 (Current)

Facility Name	Fiscal Year Completed	Project Type	Funding Source	Estimated Annual Cost Savings ($)	Annual GHG Emissions Reductions (MTCO2e)	Reduction in Social Cost of Carbon
Mid-County HHS Building	FY17	Building Controls, Building Envelope, High-Efficiency Transformers, HVAC and Lighting Upgrade, Vending Controls, Water Conservation	ESCo	$181,853	704	$14,784
AFI/ Blackbox Theater	FY17	Lighting Upgrade	CIP, Operating, and Other Sources	$63,183	389	$8,169
Brookville Maintenance Facility	FY17	Lighting Upgrade (Interior)	CIP, Operating, and Other Sources	$32,308	199	$4,179
Strathmore Concert Hall	FY17	Lighting Upgrade	CIP, Operating, and Other Sources	$93,203	573	$12,033
Executive Office Building (11th Floor)	FY17	Lighting Upgrade	CIP, Operating, and Other Sources	$1,511	9	$189
Total FY17				**$372,058**	**1,874**	**$39,354**

7. Energy Efficiency Projects Completed in FY13-FY16 (Previous)

Facility Name	Fiscal Year Expected Completion	Project Type	Funding Source	Projected Annual Cost Savings ($)	Annual GHG Emissions Reductions (MTCO2e)	Reduction in Social Cost of Carbon
Davis Library	FY16	Building Envelope, Demand Controlled Ventilation, Lighting Upgrade, Water Conservation	ESCo	$17,744	62	$1,302
Aspen Hill Library	FY16	Lighting Upgrade	CIP, Operating, and Other Sources	$2,641	16	$336
Damascus Library	FY16	Lighting Upgrade	CIP, Operating, and Other Sources	$6,955	43	$903
Detention Center	FY16	Lighting Upgrade	CIP, Operating, and Other Sources	$15,461	95	$1,995
Imagination Stage	FY16	Lighting Upgrade	CIP, Operating, and Other Sources	$16,293	97	$2,037
Potomac CRC	FY16	Lighting Upgrade	CIP, Operating, and Other Sources	$14,026	86	$1,806
Potomac Library	FY16	Lighting Upgrade	CIP, Operating, and Other Sources	$3,747	23	$483
Public Safety Headquarters	FY16	Lighting Upgrades	CIP, Operating, and Other Sources	$5,812	36	$756
Germantown Indoor Swim Center	FY16	Lighting Upgrade	CIP, Operating, and Other Sources	$9,125	56	$1,176
Woodmont Corner Garage #11	FY16	Lighting Upgrade	CIP, Operating, and Other Sources	$60,222	358	$7,518
Strathmore Concert Hall	FY16	ENERGY STAR Appliances	CIP, Operating, and Other Sources	$60	—	—
North Potomac CRC	FY16	Chiller Upgrade	CIP, Operating, and Other Sources	$6,283	37	$777
Scotland NRC	FY16	Chiller Upgrade	CIP, Operating, and Other Sources	$1,185	7	$147
Total FY16				**$159,554**	**916**	**$19,236**
HHS Administrative Offices	FY15	Building Controls, High-Efficiency Transformers, HVAC and Lighting Upgrade, Vending Controls	ESCo	$222,159	1132	$23,772
Halfway House for Women	FY15	ENERGYSTAR Appliances	CIP, Operating, and Other Sources	$19	—	—
Rothgeb Worker Center	FY15	Lighting Upgrade	CIP, Operating, and Other Sources	$5,116	32	$672
Total FY15				**$227,294**	**1164**	**$24,444**
Spring Cameron Garage #02	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$68,818	410	$8,610
Cameron Second Garage #07	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$81,148	483	$10,143
Strathmore Concert Hall	FY14	Chiller Upgrade, Variable Frequency Drives	CIP, Operating, and Other Sources	$29,803	178	$3,738
White Oak Library	FY14	Chiller Upgrade	CIP, Operating, and Other Sources	$2,939	17	$357
Cabin John Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$6,344	38	$798
Hampden Lane Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$1,670	10	$210
Kensington Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$4,065	24	$504

Facility Name	Fiscal Year Expected Completion	Project Type	Funding Source	Projected Annual Cost Savings ($)	Annual GHG Emissions Reductions (MTC02e)	Reduction in Social Cost of Carbon
Kingsview Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$5,318	32	$672
Leisure World Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$2,810	17	$357
Montrose Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$2,089	12	$ 252
Muddy Branch Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$3,610	21	$ 441
Olney Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$9,647	57	$1,197
Potomac Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$2,908	17	$357
Rockville Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$6,169	37	$777
Silver Spring Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$2,355	14	$294
Walnut Hill Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$2,354	14	$294
Westwood Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$4,043	24	$504
Wheaton Liquor	FY14	Lighting Upgrade	CIP, Operating, and Other Sources	$2,080	12	$252
Total FY14				**$238,170**	**1,417**	**$29,757**
Council Office Building-Parking Garage	FY13	Lighting Upgrade	CIP, Operating, and Other Sources	$28,764	171	$3,591
Kennett Street Garage #9	FY13	Lighting Upgrade	CIP, Operating, and Other Sources	$34,632	206	$4,326
Amherst Garage #45	FY13	Lighting Upgrade	CIP, Operating, and Other Sources	$40,476	241	$5,061
Metropolitan Garage #49	FY13	Lighting Upgrade	CIP, Operating, and Other Sources	$65,963	393	$8,253
1101 Bonifant Dr. Garage #55	FY13	Lighting Upgrade	CIP, Operating, and Other Sources	$73,000	434	$9,114
Wayne Avenue Garage #60	FY13	Lighting Upgrade	CIP, Operating, and Other Sources	$126,128	751	$15,771
Town Square Garage #61	FY13	Lighting Upgrade	CIP, Operating, and Other Sources	$99,857	594	$12,474
Kensington Park Library	FY13	Chiller Upgrade	CIP, Operating, and Other Sources	$2,296	14	$294
Total FY13				**$471,116**	**2,804**	**$58,884**

8. Solar and Advanced Energy Project Summary

Facility	Completion Date	Type	Power (kW)	Energy Generation FY16 (kWh)	Savings FY16[7]	Energy Generation FY17 (kWh)	Savings FY17[8]
Projects Self-Funded by Montgomery County[9]							
Shady Grove Transfer station	2012	Rooftop	280	350,000	$42,000	350,000	$42,000
Equipment Maintenance and Transit Operations Center	2012	Rooftop	74	93,758	$11,251	93,758	$11,251
Circuit Court South Tower	2013	Rooftop	12 (estimated)	15,144	$1,817	15,144	$1,817
Projects Made Possible by Power Purchase Agreement Through Public-Private Partnership							
Montgomery County Department of Liquor Control	February 2016	Rooftop	1,120	388,928	$33,448	1,124,757	$79,858
Rockville Library	February 2016	Rooftop	88	40,330	$3,267	96,376	$7,710
Potomac Community Center	March 2016	Rooftop	55	14,583	$1,123	54,663	$4,592
Jane Lawton Recreation Center	March 2016	Rooftop	41	8,212	$764	45,381	$3,630
Silver Spring Civic Building at Veterans Plaza	March 2016	Rooftop	39	15,480	$1,285	43,502	$3,567
Gaithersburg Library	April 2016	Rooftop	220	63,174	$5,243	254,434	$21,627
Up-County Regional Services Center	May 2016	Rooftop	54	13,962	$796	70,886	$3,828
Fire Station 31	January 2017	Rooftop	37	n/a	n/a	19,985	$1739
Council Office Building	March 2017	Rooftop	32	n/a	n/a	14,158	$255
Montgomery County Correctional Facility[10]	May 2017	Ground mount and rooftop	2,803	n/a	n/a	130,861	$9,160
Holiday Park Senior Center	June 2017	Canopy	350	n/a	n/a	5,547	$460
Kidstop Childcare Center	June 2017	Rooftop	31	n/a	n/a	4,459	$392
Oaks Landfill[11]	Expected 2018	Ground mount	5,162	n/a	n/a	n/a	n/a
Public Safety Headquarters (PSHQ) microgrid[12]	Expected 2018	Solar Canopy and CHP microgrid	2,510 solar; 800 CHP	n/a	n/a[13]	n/a	n/a
Montgomery County Correctional Facility (MCCF) microgrid[14]	Expected 2018	CHP	220	n/a	n/a	n/a	n/a
Total[15]				**544,669**	**$100,993**	**1,865,009**	**$191,886**

7 Please note that because solar projects came online at different times the calendar year, no projects had a full year of actual savings in FY2016 and some projects were not yet online when the fiscal year started.

8   Please note that solar projects that came online during calendar year 2017 did not have a full year of actual savings during FY2017.

9 Energy generation and cost savings for projects built prior to 2016 are estimated based on expected annual generation.

10 An additional ground mount array on the north side of the facility is expected to come on-line in 2018 that is expected to nearly double the generation and cost savings for this project.

11 Annual energy generation anticipated for the planned Oaks Landfill solar project is 7,435,500 kWh, with an annual projected cost savings of $256,372.

12 Anticipated annual energy generation for the microgrid project at Public Safety Headquarters is 3,305,808 kWh for the solar canopies over parking and 6,324,720 kWh for the combined heat and power (CHP) generator.

13 For the PSHQ and MCCF microgrid projects, $4 million in infrastructure upgrades were installed to enhance resilience and increase efficiency through a Public Private Partnership. In addition, the two microgrids are expected to reduce greenhouse gas emission by 3,629 metric tons each year, the equivalent of taking more than 750 cars off the road or planting 94,000 trees. Electricity rates will be comparable to projected utility rates.

14 Anticipated annual energy generation for the microgrid project at Montgomery County Correctional Facility is 1,830,840 kWh.

15 Includes only projects completed through the end of FY2017.

9. Fuel Economy Standards and SUV Inventory[16]

Average Fuel Economy (mpg)	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Administrative Fleet	14.31	15.0	14.35	16.07	16.01	15.67
Public Safety Fleet	12.2	12.34	12.79	13.65	13.24	12.44

SUV INVENTORY

Count by Department	# of SUVs	Percentage of SUVs
Correction and Rehabilitation	6	1.39%
Fire and Rescue	39	9.01%
Police	223	51.50%
Sheriffs Office	23	5.31%
Circuit Court	1	0.23%
Community Engagement Cluster	2	0.46%
County Executives Office	2	0.46%
Economic Development	1	0.23%
Environmental Protection	17	3.93%
General Services	27	6.24%
Health and Human Services	1	0.23%
Housing and Community Affairs	1	0.23%
Liquor Control	2	0.46%
Office Of Homeland Security	1	0.23%
Permitting Services	30	6.93%
Recreation	2	0.46%
State Attorneys Office	1	0.23%
Technology Services	3	0.69%
Transportation	51	11.78%
Total	**433**	

Subfleet	Total Count	Percentage of SUVs	Mileage	Fuel Usage	Ave MPG
Public Safety SUV	293	68%	3,799,170	299,454	13
Other SUV	140	32%	1,118,579	72,130	16
Total	433		4,917,750	371,585	13

16 Disclosure required by Bill 6-14.

10. County Employee Participation in Commuter Services Programs

Program	Description	Participation in FY2016	Participation in FY2017
Ride On C-Pass	County employees can take Ride On buses for free using their employee id badge.	81,455 rides (approximately 9 rides per employee).	77,725 rides (approximately 8.5 rides per employee).
Capital Bikeshare	Employees receive discounted annual membership for the bikesharing program.	75 employees (since 2014).	118 registered since 2014. 56 are active or pending (have key fob but haven't started riding yet).
Get In Program	Partial reimbursement of public transit costs for employees who use public transportation five days a week.	93 employees participate.	85 employees participate.

11. Recycled Materials Purchased by Montgomery County Government

Recycled Product	FY16 Cost	FY17 Cost
Asphalt and bituminous concrete (bituminous concrete may consist of 25% recycled material)	$3,268,000	$4,500,000
Recycled paper	$367,669	$208,473
Recycled office supplies purchased through the County's LSBRP contract with Benjamin Office Supplies	$411,063	$440,299
Plastic recycling bins (recycled content from 25% to 50%)	$220,872	$827,071
Record storage boxes (with recycled content from 10-26%)	$7,837	$46,531
Total	**$4,275,441**	**$6,022,374**

12. Stormwater Management Facility Retrofits on County Property

Facility	Stormwater Management Practice(s)	Status	Impervious Area Treated (acres)
Ken Gar Recreation Center	Rain Garden	Completed	0.05
Wheaton Veterans Park	Conservation Landscaping	Completed	0.11
Glen Echo Heights Right-of-Way	Conservation Landscaping	Completed	0.05
Aspen Hill Library	Bioretention; Curb Extension	Completed	0.71
Kensington Library	Rain Gardens; Bioretention; Bioswale	Completed	0.76
Upper County Community Recreation Center	Dry Pond Retrofit	Completed	3.63
Colesville Park & Ride	Bioretention; Water Quality Inlets	Completed	1.28
Greencastle Park & Ride	Bioretention; Water Quality Inlets	Completed	1.77
Little Falls Library	Bioretention	Completion Expected December 2017	0.68
Germantown MARC Park & Ride	Water Quality Inlets; Underground Water Quality Filters	Construction Expected November 2018	6.35
Longwood Recreation Center	Bioretention; Sand Filter	Construction Expected February 2018	0.6
Potomac Recreation Center	Bioretention; Permeable Paver; Underground Sand Filter; Water Quality Inlets	Construction Expected February 2018	2.4
Total			**18.39**

13. County LEED Certified Building Statistics

Facility	LEED Certification	Construction Waste Diverted from Landfill	Building Materials with Recycled Content	FSC Certified Wood used in Construction	Building Materials Harvested or Manufactured Locally	Water Use Reduction[18]	Energy Use Reduction[18]
MCPS Food Distribution Center	Silver	77%	20%	97%	33%	36%	19%
Mid County Community Recreation Center	Silver	87%	n/a	n/a	100%	43%	35%
Plum Gar Recreation Center	Silver	50%	n/a	n/a	n/a	n/a	n/a
Travillah Fire Station	Silver	82%	25%	n/a	22%	33%	21%
Animal Services and Adoption Center	Gold	96%	15%	n/a	24%	40%	14%
Circuit Court South Tower	Gold	93%	26%	80%	40%	35%	24%
Colesville Depot	Gold	98%	14%	n/a	43%	41%	18%
Equipment Maintenance and Transit Operations Center	Gold	75%[17]	20%	50%	20%	40%	n/a
Gaithersburg Library	Gold	79%	33%	97%	35%	30%	n/a
Glenmont Fire Station 18	Gold	92%	18%	n/a	27%	46%	19%
3rd District Police Station	Gold	94%	24%	51%	24%	37%	17%
Olney Library	Gold	83%	20%	76%	22%	38%	20%
Progress Place	Silver	92%	19%	100%	16%.	36%.	18%
Scotland Neighborhood Recreation Center	Gold	75%[17]	22%	50%[17]	28%	44%	n/a
Silver Spring Library	Gold	85%	20%	76%	27%	43%	28%
White Oak Recreation Center	Gold	85%	20%	50%[17]	40%	50%	32%

17 Montgomery County achieved LEED points for this category that require at least the minimum threshold listed to be met. In cases where a more precise number was not available, we substituted the minimum needed to achieve the points. Actual percentages for some of these categories may be even higher.

18 Water use reduction and energy use reduction are compared to a baseline building performance rating calculated following guidelines provided by the U.S. Green Building Council.

MISCELLANOUS DATA[19]

14. Estimated Utility Costs by Type

Utility Type	Unit of Measure	Unit Costs FY15	Unit Costs FY16	Unit Costs FY17
Electric	kWh	$0.121	$0.125	$0.118
Water & Sewer	Kgal	$15.121	$16.239	$18.458
Natural Gas	Therm	$0.945	$0.852	$0.939
Fuel Oil #2	Gal	$2.631	$1.782	$3.143
Propane	Gal	$3.819	$3.640	$3.526

15. Utility Costs Estimates for FY18 for New Buildings

New Building FY18	Floor Area (SqFt)	OBI FY19	Average Annual Utility Costs/Floor Area (SqFt)
2nd District Police Station- Bethesda	38,000	$101,612	$2.67
GOOD HOPE NRC (NEW)	14,000	$28,150	$2.01
Total		**$129,762**	

16. Total Building Square Footage Fueled by Electricity and Natural Gas

Group	Fund	Utility	Bldg. Sq.Ft. FY15	Bldg. Sq.Ft. FY16	Bldg. Sq.Ft. FY17
County Facilities	NDA	Electricity	6,358,260	6,507,442	6,602,407
		Natural Gas	4,607,254	4,723,160	5,004,430
Recreation	Tax Supported	Electricity	738,122	738,122	799,922
		Natural Gas	584,373	584,373	619,029
Mass Transit	Tax Supported	Electricity	842,578	842,578	902,793
		Natural Gas	25,000	25,000	40,179
Liquor	Non Tax Supported	Electricity	58,354	329,051	348,723
		Natural Gas	-	311,886	327,334
Solid Waste Disposal	Non Tax Supported	Electricity	19,506	21,910	21,910
		Natural Gas	-	-	-
Motor Pool	Non Tax Supported	Electricity	149,163	149,163	122,842
		Natural Gas	152,179	152,179	152,179
Parking Lot District	Non Tax Supported	Electricity	6,753,807	6,782,998	6,556,558
		Natural Gas	**2,269,112**	**2,042,672**	**2,042,672**
County TOTAL		**Electricity**	**14,919,790**	**15,371,264**	**15,355,155**

17. County Utility Expenditures FY15-FY17[20]

Fund	Utility	Total Consumption FY15	Total Cost FY15	Total Consumption FY16	Total Cost FY16	Total Consumption FY17	Total Cost FY17
NDA	Electricity	172,657,714	$20,546,268	165,844,792	$20,730,599	180,070,870	$20,708,150
	Natural Gas	2,046,621	$1,921,777	1,781,987	$1,514,689	1,861,237	$1,747,702
Tax Supported	Electricity	17,294,492	$2,213,695	19,026,224	$2,378,278	21,233,927	$2,611,773
	Natural Gas	574,108	$559,755	499,324	$423,926	486,090	$449,633
Non Tax Supported	Electricity	26,706,512	$3,391,727	32,217,984	$3,995,030	30,868,878	$3,796,872
	Natural Gas	358,413	$335,116	297,507	$258,236	312,025	$299,544
County TOTAL	**Electricity**	**216,658,718**	**$26,151,690**	**217,089,000**	**$27,103,907**	**232,173,674**	**$27,116,795**
	Natural Gas	**2,979,141**	**$2,816,648**	**2,578,818**	**$2,196,851**	**2,659,352**	**$2,496,879**

19 In an effort to merge and consolidate reporting to save paper and increase efficiency, this document includes data that was historically reported under the annual Resource Conservation Plan.
20 Source: County Executive's Budget Book.

18. County Utility Expenditures FY15–FY17

Utility	Actual Consumption FY15 (kWh)	Actual Cost FY15	Actual Consumption FY16 (kWh)	Actual Cost FY16	Actual Consumption FY17 (kWh)	Actual Cost FY17
Traffic Signals and Streetlights	69,913,229	$8,739,154	67,936,307	$8,492,038	71,943,856	$8,992,982

19. Clean Energy Purchase

Clean Energy Volume 2017 (kWh Equivalent)	Percent Purchased 2017[21]	FY17 Cost
270,700,000	100%	$181,369

21 Includes 100 percent of the electricity use of County facilities and additional renewable energy credits to mitigate for natural gas and oil used in County facilities and fleet.

20. Maryland Energy Administration MD-Smart Energy Community Grants and Utility Incentives FY13-FY18

Fiscal Year	MEA Grants	Utility Incentives	Projects
FY18	$216,475	$884,237	CHP, LED Lighting, HVAC Upgrades, and Solar PV
FY17	$235,000	$29,024	CHP, LED Lighting, HVAC Upgrades, and Solar PV
FY16	$467,250	$378,306	LED Lighting, HVAC, Building Envelope and Energy Efficient Transformer Upgrades
FY15	$338,646	$176,549	LED Lighting and HVAC Upgrades
FY14	$405,000	$327,880	LED Lighting, HVAC Upgrades and Fleet conversion to Compressed Natural Gas
FY13	$625,000	$252,791	LED Lighting and HVAC Upgrades
Totals	**$2,287,371**	**$2,048,787**	

PLANNING AHEAD

Montgomery County is continually planning, evaluating, and pursuing new opportunities to green its government operations. To further enhance green government efforts and to foster even greater collaboration across County government, we are leading several strategic planning processes over the next year, including:

▶ A County government operations Sustainability Plan that will identify goals, targets, and actions for each topic area identified in this report.

▶ A strategic Energy Management Plan that will outline goals, targets, actions, timelines, and staff roles and responsibilities toward maximizing energy efficiency of the County's portfolio of buildings.

▶ A comprehensive plan for installation and management of solar energy systems at County facilities. The plan will include a target for the total clean energy to be installed on County facilities and a process to vet new facilities for renewable energy projects. Montgomery County is currently evaluating options to install additional microgrids, including solar, to improve the resiliency of the County's portfolio of facilities. The County also is exploring options for net zero facilities where possible.

AWARDS AND RECOGNITIONS

▶ Nine National Association of Counties (NACo) Achievement Awards for sustainability initiatives since FY14, including an award for Sustainable Government Communications in FY17.

▶ Five consecutive Alliance for Workplace Excellence Eco-Leadership awards.

▶ Smart Energy Community Designation from the Maryland Energy Administration.

▶ ENERGY STAR 2017 designation earned for Health and Human Services Administrative Offices.