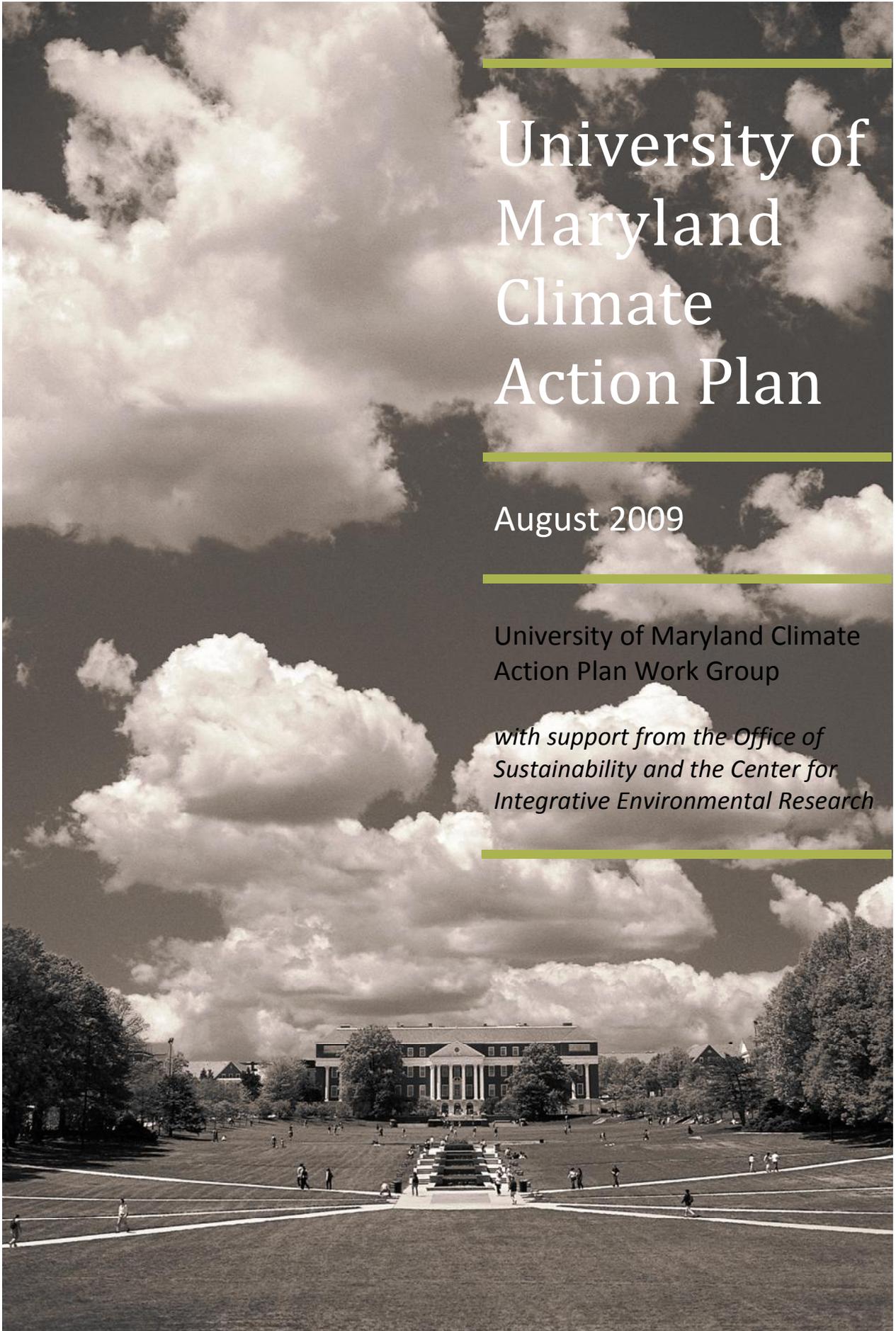

University of Maryland Climate Action Plan

August 2009

University of Maryland Climate
Action Plan Work Group

*with support from the Office of
Sustainability and the Center for
Integrative Environmental Research*



**University of Maryland
Climate Action Plan**

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
CHAPTER 1. INTRODUCTION	6
CHAPTER 2. ADMINISTRATIVE POLICIES	21
CHAPTER 3. POWER AND OPERATIONS	26
CHAPTER 4. TRANSPORTATION	35
CHAPTER 5. SOLID WASTE	49
CHAPTER 6. EDUCATION AND RESEARCH	54
CHAPTER 7. FINANCING THE PLAN	59
CHAPTER 8. TRACKING PROGRESS AND NEXT STEPS	60
APPENDIX I. ACRONYM LIST	62
APPENDIX II. CLIMATE ACTION PLAN WORK GROUP MEMBERSHIP LIST	63
APPENDIX III. ENVIRONMENTALLY PREFERABLE PROCUREMENT POLICY	65
APPENDIX IV. ADDITIONAL STRATEGIES FOR FUTURE CONSIDERATION	69

EXECUTIVE SUMMARY

Commitment to Climate Action and Carbon Neutrality

The University of Maryland recognizes the exigency of climate change and the important role that it can play as an institution of higher learning in finding mitigation strategies to address this global challenge. As a signatory to the American College and University Presidents Climate Commitment (Presidents Climate Commitment), the University has demonstrated its commitment to addressing the issue of climate change and agreed to reduce and ultimately neutralize its greenhouse gas emissions. Carbon neutrality is defined as reducing greenhouse gas (GHG) emissions as much as possible and offsetting any remaining emissions so that net emissions to the atmosphere are zero. For additional background on climate change that motivated the University's participation in the Presidents Climate Commitment, see *Carbon Footprint of the University of Maryland, College Park: An Inventory of Greenhouse Gas Emissions (2002-2007)*.¹ While the University's actions cannot materially affect global geochemical cycles, the institution recognizes that it is responsible as a global citizen to diminish its emissions and in the process of doing so will improve its efficiency and influence its students, faculty, and staff. As part of the Presidents Climate Commitment, the University also agreed to increase research on climate change and expand the educational curriculum focused on sustainability.

The University of Maryland's Climate Action Plan (CAP) is a 40-year strategic plan for how the campus will become carbon neutral by 2050. Because of the long-term nature of the plan and the uncertainties surrounding the needed institutional, technological, and behavior changes, the plan will continue to be updated and evolve. The plan builds upon the vision and core principles for sustainability laid out in the 2001 Facilities Master Plan, the 2005 Environmental Stewardship Guidelines, and the 2008 Strategic Plan and details how the campus will reduce its GHG emissions through diverse strategies. The University has agreed to submit a Climate Action Plan to Presidents Climate Commitment organizers by September 2009, and following submission of this document, conduct greenhouse gas inventory updates every two years and milestone reporting in off years.

Campus Greenhouse Gas Inventory

In 2008, the University published a detailed inventory of its GHG emissions from FY 2002 through FY 2007. The inventory scope included emissions associated with electricity and steam consumption, fuel use, commuting, air travel, the University fleet, Shuttle-UM buses, agricultural releases, solid waste management, and fugitive refrigerant releases. In Fiscal Year (FY) 2005, the University emitted approximately 321,000 metric tons of carbon dioxide equivalents, roughly the same amount of carbon dioxide annually emitted by 54,600 cars² or sequestered by 96,500 acres of Maryland forest³. The major sources of emissions were electricity consumption, transportation, and steam use (for heating and air conditioning campus buildings). FY 2005 is used as the baseline year for the plan. The next GHG inventory will be released in Fall 2009.

¹ http://www.cier.umd.edu/UMD_GHG_FullRpt_FY02-07.pdf.

² Assuming a car traveled 15,000 miles/year * 0.045 gallons/mile * 0.00871 MT_{CO₂e}/gallon = 5.88 MT-CO₂e/year.

³ Assuming an acre of mature trees absorbs 3.33 MT-CO₂e per year (Duke University).

Climate Action Plan Development Process

Since December 2007, more than 50 students, faculty, and staff representing 35 different schools, departments, and offices have worked to devise emission reduction strategies as part of the Climate Action Plan Work Group. In addition to being focused on strategies related to the major sources of emissions, the group also explored how to integrate sustainability and climate change-related learning and problem solving into teaching and research.

No single strategy will allow the University to become carbon neutral. Instead, the University needs a diverse portfolio of strategies – including operational, technical, educational, behavioral, and financial approaches. A number of GHG reduction strategies are already being implemented, promoting greater partnership among campus departments. An important early outcome of this process is the new relationships that have already been developed and the information sharing and collaborations that are emerging from the Work Group. Cooperation and collaboration are essential in implementing a comprehensive Climate Action Plan and meeting the complex challenges of carbon neutrality.

Key Assumptions

The University is committed to being a leader in sustainability – nationally, within the State of Maryland, and within higher education. This is a natural role for a leading public research institution. Given the fundamental role that energy plays in every aspect of campus life, technical and behavioral expertise is needed to reduce energy use and determine new ways to operate. Reductions are needed from the three campus sectors that contribute the vast majority of the emissions – Power/Operations, Transportation, and Solid Waste. Fortunately, many good efforts that will contribute to emission reductions are already taking place on campus. However, the scope of the challenge to become carbon neutral necessitates a paradigm shift in how the campus operates and does business. New thinking is needed to challenge long held assumptions, policies, and practices.

The campus is charting new territory. Many of the strategies in this document are best estimates about what might be possible in the milestone years leading up to 2050. As new markets, technologies, and regulatory programs emerge, the plan must be periodically revised. Thus, the Climate Action Plan will be a living document and campus progress must be measured to guide future actions.

There are a number of policy barriers that can discourage the campus and other universities from investing in low carbon infrastructure. These include how the campus energy budget is financed through the State of Maryland (see page 24) and prescriptions in the Energy Policy Act of 2005 that govern the types of alternatively fueled vehicles that state fleets may purchase. Such barriers will need to be removed if the University is going to have the ability to aggressively invest in energy efficiency and conservation and new transportation technologies. Successfully promoting the advancement and deployment of new technologies will require leadership in the policy realm.

The profound challenges of climate change represent a tremendous opportunity for an institution with expertise in diverse disciplines that can devise strategies to address the problems posed by a warming planet. The campus will need to be aggressive, within the bounds of current budget restrictions, to effectively leverage that expertise over the near term. The campus is working toward a goal of carbon neutrality by 2050, but clear progress needs to be made much sooner.

Juxtaposed with the environmental challenges are profound economic issues that are constricting state and University resources. There is tremendous uncertainty in the future of energy prices which makes the benefit cost analysis of energy saving technologies exceedingly difficult. These factors will influence

how quickly the campus can work to reduce its carbon footprint where strategies are capital intensive or require extensive staff support.

It is assumed that the campus will continue to grow in its energy usage beyond the FY 2005 baseline, despite best energy efficiency and conservation efforts. Every effort should be made to use existing facilities more efficiently, but it is understood that growth will take place. This growth will need to be powered by 100 percent renewable energy, most likely procured from off-campus sources, so that the benefits of campus hard work to reduce emissions through energy efficiency, conservation, and behavior change are not eroded by new energy demand.

And finally, in keeping with the spirit of the Presidents Climate Commitment, this plan is not solely about strategies and actions with measureable emission reduction benefits. Part of this plan is about integrating sustainability into the lifeblood of the institution – teaching, research, and service. Efforts to educate and incentivize research will likely have strong paybacks, but they will not be quantifiable using the same calculus used to evaluate energy efficiency or renewable energy applications.

Findings

The Climate Action Plan Work Group has identified over 40 strategies, which if fully implemented, would enable the campus to achieve its goal of carbon neutrality by 2050. The Work Group and support staff have carefully articulated these strategies with the best available information, but in many cases there is great uncertainty about what will be possible ten to forty years in the future. Because of this, periodic updates to the Climate Action Plan are vital to the success of the effort and will afford much greater precision as more distant milestones come onto the horizon. Figure A. below shows how the articulated strategies would contribute to carbon neutrality by 2050, if all strategies, including carbon offsets for each sector’s emissions which cannot be otherwise reduced, were implemented. The dashed line shows the University’s emission reduction goals over time. In the graph, the right X-axis is flipped to show progress over time toward carbon neutrality (net emissions to the atmosphere are zero).

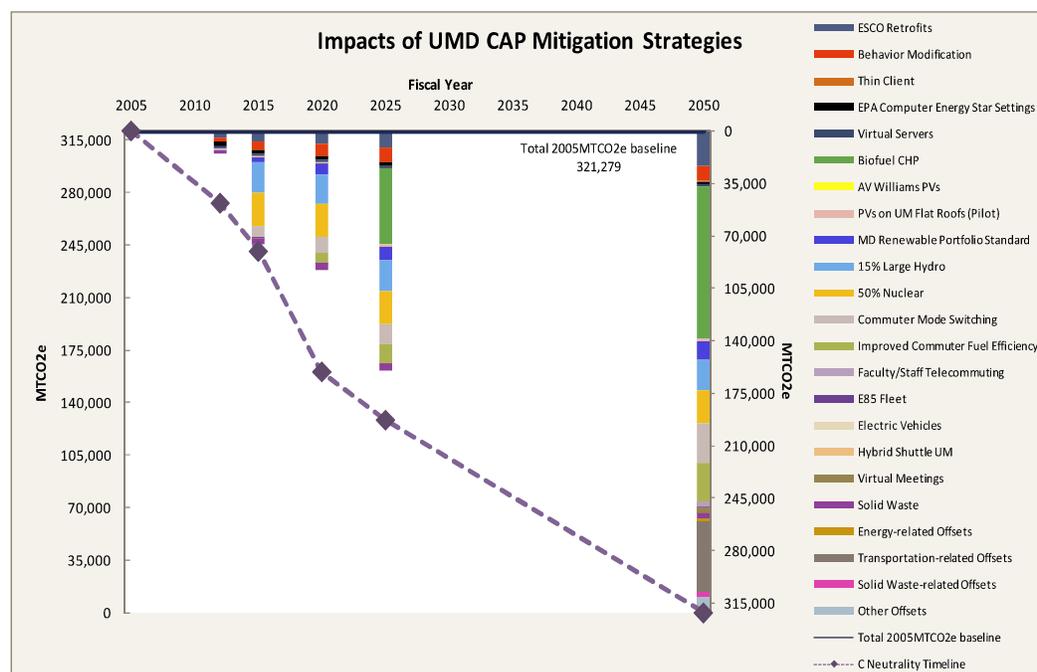


Figure A. Impacts of University of Maryland CAP Mitigation Strategies

The plan provides details about how the three campus emission “sectors” (Power/Operations, Transportation, and Solid Waste) will deliver emission reductions between 2010 and 2050. In early years, the campus is challenged to meet its milestones in some cases, and the currently envisioned strategies fall a bit short of the target. This demonstrates that updates to the plan will have to be ambitious and the campus will have to be innovative to meet these milestones.

As the biggest contributor, power and operations (60 percent of 2005 emissions) provides a host of strategies, which if implemented fully, would neutralize campus emissions from energy by 2050. It should be noted that given the unknowns associated with on-campus renewable energy applications, should these not prove viable, key targets would not be met and other approaches would be needed.

As the second largest contributor, campus transportation (34 percent of 2005 emissions) has a challenging task because much of these emissions are outside of direct University control. The University cannot control who drives to campus, their gas mileage, or how campus personnel travel for official campus business. What the University can control is the provision of options – low carbon commuting options such as Shuttle-UM, vanpools, and designated bicycle lanes on campus as well as air and ground travel alternatives such as convenient, reliable options for video conferencing.

Solid waste emissions are small (2 percent of 2005 emissions) and given the near-term ambitious waste diversion goals that have been suggested for the campus, this “sector” would outperform expectations, potentially reducing emissions more than 2.5 times the overall campus GHG reduction goal by 2015. Plans for further solid waste diversion post 2015 will need to be established.

And finally, there are “other” sources of emissions (from agriculture, refrigerants, and stationary sources) that together accounted for 3 percent of campus emissions in 2005. These emissions were not addressed in this plan given their relatively minor contribution, but they must be addressed in the future so that the campus can attain neutrality. If these emissions cannot be lowered, the plan assumes that carbon offsets would need to be purchased in 2050 to reach the campus’ carbon neutrality goal.

Priority Strategies for Near-term Implementation

There are a number of strategies and policies that need to be implemented within the next 3 years if the campus is going to make strong progress toward carbon neutrality. The near-term priority strategies include:

Administrative Policies – Make progress on the following policies that are critical hurdles to campus efforts to reduce emissions

- Strategy 2.1 - Seek state support for “carbon neutral” new buildings through increased energy efficiency; renewable energy applications on site; and renewable energy procurement.
- Strategy 10.0 - Recognize repayment of internal loans to fund capital improvements for energy efficiency and conservation measures.
- Strategy 11.0 - Educate lawmakers about the need for state policy that supports additional capital investment for high performing, energy efficient buildings (life cycle costing).

Power and Operations

- Strategy 1.0 - Existing building retrofits, including Energy Performance Contracts (EPCs) for energy intensive buildings.
- Strategy 2.0 - Seek state support for carbon neutral new buildings through energy efficiency, renewable applications, and renewable energy procurement.

- Strategy 3.0 - Provide incentives to departmental energy users to conserve energy.
- Strategy 4.1 - Conduct a feasibility study for a biofuel powered combined heat and power plant.
- Strategy 7.0 - Procure off-site renewable energy to offset campus growth.
- Strategies 8.1 to 8.3 - Work with Office of Information Technology (OIT) and departmental IT staff to promote low-carbon computing through the promotion of hardware solutions (Thin Client and virtual servers) and behavior change (computer power settings).

Transportation

- Strategies 1.1 to 1.6 - Expand the provision of low-carbon commuting options and increase commuter utilization of these modes including Shuttle-UM, vanpools, carpools, biking, etc.
- Strategy 4.0 - Explore how video conferencing facilities could be better promoted and used as substitutes for certain types of campus business travel.
- Strategy 7.2 - Procure 12 all electric vehicles and scale up purchases as technology is tested and proven for campus needs.
- Strategy 9.0 - Explore how local sources of carbon offsets might be developed to address transportation-related emissions that the University cannot otherwise reduce.

Solid Waste

- Strategy 1.0 - Develop a campus-wide waste reduction, recycling, and composting plan by 2010 that increases the diversion of solid waste from landfills to meet the goals for the CAP.

Education and Research

- Strategy 1.1 - Make education- and research-related resources that relate to climate change, energy efficiency, and economic and environmental sustainability available to the campus.
- Strategy 2.4 A - Integrate themes of sustainability throughout various disciplines via the “Chesapeake Project,” a faculty workshop designed with the Center for Teaching Excellence.
- Strategy 3.0 B - Actively consider sustainability and climate-related research and education programs (including scholarships and fellowships) in the portfolio of solicitations for donor support and alumni giving.

Next Steps

As the plan is implemented, the more than 40 strategies will need to be prioritized, resourced, and assigned to appropriate campus champions for further action. In many ways, one of the most important outcomes from the Climate Action Plan process has been the relationships that have been established that will foster new “low-carbon” collaborations across campus – both to implement CAP strategies and to devise approaches that have not even been conceived of yet. This human capital will be vital to the campus’ success in attaining carbon neutrality and becoming a model for a green university.

The Vice President for Administrative Affairs has recommended that the President form a University Sustainability Council that would be responsible for monitoring campus progress and overseeing future updates and revisions of the Climate Action Plan. The Council would consist of senior administrators and select faculty, staff, and students, and would be supported by the Office of Sustainability. The Council would make recommendations regarding a new Campus Green Fund and would seek funding from appropriate sources to support priority climate mitigation and sustainability strategies.

3/16/2015

Buy Green

The University of Maryland is committed to purchasing energy efficient and environmentally friendly products. Try using these tools to identify such products:

EnergyStar : Find energy efficient products via this website jointly sponsored by the U.S. Department of Energy and the Environmental Protection Agency.

E-Peat : EPEAT is a system to help purchasers in the public and private sectors evaluate, compare and select desktop computers, notebooks and monitors based on their environmental attributes. EPEAT also provides a clear and consistent set of performance criteria for the design of products, and provides an opportunity for manufacturers to secure market recognition for efforts to reduce the environmental impact of its products.

Once you've identified a product, please check our [Master Contracts](#) to determine if the desired item is available for you to place your own order using the p-card or ELF Master Contract Release. If the item is not available on one of our contracts, please send your requisition to Procurement and Supply so that we can procure the item for you.

Green Office Supplies: Both of our approved Master Contracts for office supplies now include an extensive selection of green products. A summary of available products from each supplier is available at **Rudolph's** or **Guy Brown**.

Authorized users should consult the catalogs for more information, or they can log on to our approved Master Contracts with Guy Brown or Rudolph's. Contact General Stores at 301-405-7337 if you require more information or assistance.

Buy Recycled Content Paper: Per the University's Environmentally Preferable Procurement Policy VIII-3(10), Section V2.a "by July 1, 2012, only general purpose office paper made from 100% post-consumer recycled content shall be procured." These are high-quality, competitively priced paper products available through our approved Master Contracts with Guy Brown and Rudolph's. The policy is located at <http://www.president.umd.edu/policies/viii310c.html>

Buy Recycled Furniture and Seating: Maryland Correctional Enterprises offers a variety of furniture and seating products made in part with recycled materials. For more information click <http://mce.md.gov/MCE/Environment/tabid/179/Default.aspx> to go to the MCE homepage and click the "Buy Green Purchasing" link.

Check out Green Purchasing focus, the Maryland Green Purchasing Committee Winter Newsletter, located at: <http://content.govdeliery.com/accounts/MDDGS/bulletins/e00a46>

Topics include: Guide to Buying Green with BISM, Guides to Buying Green on MRO contracts, Update to Environmentally Preferable Purchasing Best Practices Manual, Green Purchasing Vendor's Fair, and Sustainable Purchasing News.

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COMMUNITIES ON THE PATH TO ZERO WASTE

Michael Alexander, President



Federation of New York - Solid Waste and
Recycling Conference
May 20 - 23, 2012

What Zero Waste is not



- It is not “integrated” solid waste management
- It is not about getting to zero
- It does not accept current waste-to-energy technologies
- It does not accept current landfilling practices

What Zero Waste is

- It is a “total commitment” to pursue zero
- It is about being on a path to zero



The Zero Waste Cycle



Key Strategies – Getting to 50% Diversion



- Universal curbside recycling and composting collections
- Yard Waste drop-off centers
- **Pay-As-You-Throw** pricing structure
 - ★ single largest incentive to increase recycling
- Minimum 25% C&D recovery
 - ★ Incorporate recycling requirements and deconstruction into green building codes
- Education

Source: Eco-Cycle



Town of University Park Food Scrap Composting Program

Yes Please 😊

- ✓ All fruit and vegetable scraps – including rinds and cores
- ✓ Bread, cookies, crackers, pasta – pretty much anything made of flour
- ✓ Grains, cooked or uncooked – rice, oats, barley, wheat, etc.
- ✓ Coffee grounds, tea bags (no staples, please), filters
- ✓ Herbs and spices
- ✓ Egg shells (crushed well)
- ✓ Nuts and nutshells

No Thanks 😞

- ✗ Meat, poultry, or fish, including bones, fat, gristle, skin, etc.
- ✗ Dairy products, including cheese, butter, yogurt, sour cream, etc.
- ✗ Grease, oil, or sauce of any kind
- ✗ Pizza boxes, egg cartons, napkins, paper towels or kleenex

Program Contact:

For any questions or concerns about the program, contact:

Mickey Beall, Town of UP, 301-927-4262, mbeall@upmd.org



Town of University Park Food Scrap Composting Program

1. Insert a liner into your green countertop bin and fill with your food scraps.

Repeat as necessary.

Respect the bin:

- Let things cool: hot materials break down the liner
- Let things dry a little: damp is fine, drenched is not



2. Tie off your liner, and then place it in your white collection bucket.

Repeat as necessary.

3. Put your white collection bucket out beside your trash bin on Tuesdays.

Repeat each week.



Sustainable Community Essentials

Rapid Assessment

for Southwestern Pennsylvania



Green Vehicle Fleet Programming: Within your reach!

Why is Green Vehicle Fleet Programming essential to your municipality?

1. Achieves cost savings
2. Decreases emissions
3. Improves efficiency

In response to aggregated data from the Sustainable Community Rapid Assessment, municipal vehicle fleets were identified as an area ripe for improvement. This two-page handout provides case studies from two local municipalities pursuing Green Vehicle Fleet programs, as well as a variety of resources and tips to help you begin saving money and reducing emissions. With tight budgets and rising gas prices, Green Vehicle Fleet programming offers an array of low-cost initiatives that can produce meaningful cost-savings for your community.

First Steps: Cost-free ways to green your fleet

- **PLAN:** Route-planning and departmental trip coordination can reduce mileage.
- **SIZE RIGHT:** Right-sizing and down-sizing vehicles appropriate to the task.
- **TUNE-UP:** Preventative maintenance and scheduling regular maintenance per manufacturers' recommendations will ensure vehicles are performing optimally.
- **DON'T IDLE:** Reduce vehicle idling in accordance with the PA anti-idling law.
- **EDUCATE:** Employee training creates awareness and improves driving habits and vehicle performance.
- **PROVIDE OPTIONS:** Encourage walking, biking, and public transportation as an alternative to driving.
- **BENCHMARK:** Inventory your current vehicle fleet by recording make, model, year, use, years in service and MPG.

Next Steps: Investing in your green fleet

- **FUELING UP:** Consider the use of alternative fuels for vehicles in the fleet.
- **PURCHASE SMART:** When replacing vehicles in the fleet, consider flex-fuel, hybrid, and electric vehicles.

Who should be involved?

1. Top municipal leadership
2. Municipal vehicle maintenance personnel
3. Purchasing Department
4. Public Works Department
5. Police and Fire Departments
6. Finance staff

Quick Resource Guide (click on the link to access):

The resource sheet is just the beginning. To learn more on how you can begin a Green Vehicle program check out the following:

ICLEI's 8 Steps to Green Your Fleet:

www.morpc.org/pdf/Green_Your_Fleet.pdf

Sustainable Jersey Green Fleet Resource Sheets:

http://sustainablejersey.com/actiondesc.php?arr_num=109&id_num=12111

Five-step Green Fleet Framework:

<http://business.edf.org/projects/fleet-vehicles/five-step-green-fleet-framework>

Alternative Fuel Programs for Municipal Fleets:

www.nlc.org/File%20Library/.../alternative-fuel-programs-cpb-fall08.pdf

Fuel Efficient Vehicles for a Municipal Fleet:

www.mass.gov/Eoeea/docs/doer/green.../efficient-vehicles-slides.pdf

Clean Cities 2011 Vehicle Buyer's Guide:

www.afdc.energy.gov/afdc/pdfs/49488.pdf

A Green Fleet is a Cost-Efficient Fleet:

www.fleetchallenge.ca/pdfnew/media/Green_Fleets_Article_rogersmith.pdf

Fleet Planning and Polices:

<http://www.garfieldcleanenergy.org/trans-fleets-2010-workshop.html>

SWPA and Green Fleet programs:



Monaca Borough

Monaca Borough is at the beginning stages of its Green Fleet vehicle program. Monaca has recently installed GPS tracking devices in its vehicle fleet. Having GPS systems in a vehicle can provide a great deal of helpful information, including being able to tell if a vehicle is idling. Incorporating technology systems like GPS can provide a wealth of information for the municipality and streamlines interdepartmental use. (Continued on next page)

One of the easiest ways to improve fleet efficiency is employee training. Monaca Borough reminds employees, “if you’re not moving, shut off the car.” Municipal manager, Mario Leone, points out how important it is to optimize vehicle use, “Do we [always] need a full size pick-up truck?” Vehicle right-sizing is another cost-free way to improve vehicle efficiency. While Leone is pleased to be reducing emissions and improving air quality in his community, the impetus for the Green Vehicle fleet is also driven by economic reasons and the cost savings for the municipality. Leone discussed that different fleets, like that of the police department, have different needs and uses for their cars. The Monaca police department already has bicycles, but they have started considering the purchase of a Segway for the municipal parking attendant. The borough now has access to good data on fuel costs for the police department vehicles, but Leone is hoping to begin recording more meticulously the performance of all the fleet cars so as to target deficiencies and improve strategies for emission reduction and cost-savings.

Leone pointed out there is always an opportunity for change and improvement. A vehicle commonly purchased by local governments, the Ford Crown Victoria, is no longer being manufactured. And since, “we have to make a change anyways”, Monaca may consider flex-fuel vehicles, or electric cars on the market like the Chevy Volt. Leone is even looking into a new police car being manufactured by Carbon Motors, a dedicated police car model with fuel efficiency in mind. Next on Leone’s agenda is to focus on preventative maintenance for his public works fleet. With employees from multiple departments utilizing the public works fleet, it is difficult to keep track of wear and maintenance schedules. Leone is considering using the GPS systems to log information and provide municipal staff with alerts for scheduled maintenance on the fleet.



GPS Systems in Monaca Borough



Cranberry Township, like Monaca Borough, sees a great duality in pursuing a Green Vehicle Fleet program: a commitment to sustainability and reducing energy costs. These goals are formally recognized in the township’s comprehensive plan, specifically driven by its energy reduction action plan. The purchase of four hybrid vehicles by the municipality in 2010 was featured in a [Post-Gazette article](#) in which Jason Dailey, facilities manager, explained, “We believe that the technology of the hybrid vehicle has come a long way and that the price points now make achieving a greener fleet more sensible and truly responsible to the tax dollar.”

While Cranberry Township is thrilled to have the addition of hybrid vehicles to the fleet, the township is also making great strides in other ways, that don’t come with a big price tag.

- Monitoring fuel consumption reports, comparing mileage, fuel economy, vehicle usage, and work orders assigned.
- Educating employees on the new PA anti-idling law.
- A vehicle replacement policy that addresses minimum benchmarks for a vehicle to be considered for purchase.
- Evaluating alternative fuel technologies for medium duty vehicles.
- Retiring vehicles from the fleet that are no longer fuel efficient.
- Regularly monitor Preventative Maintenance schedules for all vehicles to ensure optimal parameters are being met.
- Train mechanics on current and upcoming technology.
- Equipment cost share between divisions.

Just as Monaca Borough is using GPS technology to improve its vehicle fleet efficiency, Cranberry Township operates a very impressive fueling system, tied to its asset management and work order system. Municipal employees are assigned a unique ID, along with the vehicle. The municipal employee enters the hours of use (or mileage) into the fueling system, which interfaces with the work order system. According to Dailey, “When a vehicle reaches the manufacturers’ prescribed recommendation for the vehicle or piece of equipment (hours or miles) a service request gets generated and a work order is electronically prepared. The chance that an oil change or tire rotation would get missed is virtually eliminated with the automated system and therefore the operational efficiency is greatly enhanced.”



Learn more about Sustainable Community Essentials at: www.sustainablecommunityessentials.org



**THE ORIGINAL GREEN
SEAL OF APPROVAL
SINCE 1989**

GS-37 Green Seal™ Standard for Cleaning Products for Industrial & Institutional

A Guide to Leadership in I&I Cleaning Products

Cleaning products are vital for a healthy and aesthetically pleasing indoor environment but may harm human and environmental health. Many chemicals found in these products can be hazardous to human and aquatic life, and both manufacturers and users may be exposed to harmful chemicals.

These products often contain volatile organic compounds (VOCs) which are chemicals that can have short and long-term health effects and contribute to the formation of ground-level ozone pollution.

Green Seal offers the GS-37 Standard as a comprehensive benchmark for sustainable cleaning products for industrial and institutional use, and identifying products that are sustainability leaders in the industry.



Scope of Standard

This standard establishes requirements for industrial and institutional general-purpose restroom, glass, and carpet cleaning products, including those that contain enzymes or microorganisms.

Key Areas Addressed

GS-37 protects water and air quality, human health, and the environment by requiring products to be sold in concentrated form*, prohibiting harmful chemicals, specifying sustainable packaging, and limiting VOC content. These criteria are intended to protect the health of building occupants and those using the product, as well as lower the impact of the product on the environment.

The requirements in the standard cover:

- Product Performance
- Human Health Protection
- Environmental Protection
- Packaging
- Training
- Labeling

Product Performance

Certified cleaning products must demonstrate effective performance, comparable to that of nationally-recognized products in their categories. These products effectively clean common soils and surfaces when used as directed. The performance is measured using industry-standard test methods.

**SUSTAINABILITY
LEADERSHIP STANDARDS**



**INDEPENDENT
THIRD-PARTY
CERTIFICATION**



**SUSTAINABILITY
RESEARCH &
LIFE CYCLE ANALYSIS**



**TECHNICAL ASSISTANCE
FOR INSTITUTIONAL
GREENING**



Human Health and Environmental Protection

GS-37 enhances the safety of cleaning products by requiring them to be non-toxic and non-irritating to skin and eyes. Products cannot be formulated with harmful chemicals from a comprehensive list, which includes heavy metals, phthalates, formaldehyde donors, carcinogens, mutagens, reproductive toxins, asthmagens, and ozone depleting compounds.

Water quality is protected by setting limits on phosphorus content (to prevent eutrophication), and environmental toxicity and bioaccumulation (to prevent harmful chemicals accumulating in the waterways). The content of volatile organic compounds (VOCs) is limited in order to prevent ground level ozone air pollution and to protect the health of users. The standard also sets requirements for products that contain microorganisms and enzymes, addressing concerns about biosafety, purity, and genetically modified microorganisms.

Concentration and Compaction

Most certified cleaning products are sold in concentrated or ultra-concentrated form*. This requirement reduces the volume of product sold, thereby minimizing packaging and transportation requirements, which leads to fewer trucks on the road, savings in fuel, and reductions in greenhouse gas emissions. Less packaging saves raw materials and reduces the waste stream.

Packaging Requirements

Packaging from cleaning products can contribute significantly to the volume of solid waste, depletion of non-renewable resources, and water and air pollution.

The certified cleaners primary package must contain at least 20% less material than an equivalent package; be recyclable and contain 25% post-consumer material, or be a refillable package with an effective take-back program. Harmful compounds, such as phthalates, bisphenol A, and chlorinated packaging material must not be added intentionally.

Training and Labeling Requirements

Specific training or training materials on the proper use of the product must be offered. Both product labeling and training materials must contain clear instructions for use, dilution, refilling, disposal, recycling, and appropriate precautions and recommendations for the use of personal protective equipment. The product label shall include English and another language, or English and a graphical representation or icons.

*Exceptions to the concentration requirement include toilet bowl/urinal cleaners, dry/absorbent compound carpet cleaners, and products solely labeled as carpet spot removers.

This is only a summary of the standard.

The full standard is available for free download at GreenSeal.org/GS37

For more information visit: www.greenseal.org, call: 202.872.6400 or email: greenseal@greenseal.org

Green Seal is an independent, non-profit organization dedicated to safeguarding the environment and transforming the marketplace by promoting the manufacture, purchase, and use of environmentally responsible products and services. Founded in 1989, Green Seal provides life-cycle, science-based environmental certification standards that are credible, transparent, and essential to creating a more sustainable world.