

T&E COMMITTEE #1,2
September 26, 2011

Update/Discussion

MEMORANDUM

September 22, 2011

TO: Transportation, Infrastructure, Energy & Environment Committee

FROM:  Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Recycling Update and Discussion Regarding County Use of Non-Recyclable Materials (including polystyrene)**

The following officials and staff are expected to participate in this discussion

Montgomery County Public Schools

- Philip J. McGaughey, Jr., Chair of the Interagency Procurement Coordination Committee (IPCC) and Director of Procurement, Montgomery County Public Schools (MCPS)
- Sean Gallagher, Assistant Director, Department of Facilities Management, MCPS
- Kate Heinrich, Assistant Director, Division of Food and Nutritional Services

Montgomery County Government

- Dan Locke – Chief, Division of Solid Waste Services (DSWS), Department of Environmental Protection (DEP)
- Eileen Kao – Chief, Waste Reduction and Recycling Section, DSWS, DEP
- Pam Jones, Acting Chief of Procurement, Department of General Services (DGS)

Background

During the FY12 budget process, the T&E Committee asked the Department of Environmental Protection (DEP) to provide, in the fall timeframe, a recycling update to the Committee. On June 2 (see memorandum on ©18-19), Council President Valerie Ervin asked the T&E Committee to discuss the County's use of products that are currently not recyclable, including polystyrene. Given some of the commonality between these two items, Council Staff has combined these items into one memorandum for purposes of the Committee discussion.

DEP staff have prepared a presentation (slides attached on ©1-15) to update the Committee on a number of DEP-Solid Waste initiatives and will also be available to participate in the discussion regarding polystyrene and other materials currently not recycled by Montgomery County. The Chair of the Interagency Procurement Coordination Committee (IPCC) will also be

available to discuss current efforts by the agencies to coordinate efforts to reduce procurement costs and increase environmentally preferred purchasing.

Montgomery County Public Schools staff will be available to discuss the specific topic of polystyrene use in school cafeterias (and MCPS’ review of a request from a Piney Branch Elementary School group, which was seeking to end the use of polystyrene at the school and instead use recyclable trays).

Council Staff suggests the following order of items for the Committee meeting:

1. Recycling Update and Discussion – Presentation by DEP Staff

Perhaps of most interest to the Council with regard to the recycling update, are the County’s efforts to maximize its recycling rate. The County’s goal for many years was to recycle “50% by 2010.” The County achieved a rate of approximately 44%, and DEP is now in the process of considering what level and kind of recycling goal (or goals) would make sense moving forward.

A waste composition study, which identified the quantities of different materials in the County’s waste stream, was last done in 2009. A major goal of such a study is to better understand what potentially recyclable materials are present in the waste stream and, thus, where opportunities may exist to improve the County’s recycling rate of these different materials.

DEP sampled the County’s waste stream and identified 58 types of materials in 10 categories, and looked at these materials in terms of the total amount generated, the amount captured (recycled), the amount disposed of, and what level of increase in capture rate it would take (across each category) to achieve the County’s 50 percent recycling rate goal. A summary table with this information (based on FY09 actual data) is attached on ©33.

The chart below summarizes the additional waste the County would need to capture to meet its 50 percent recycling goal, based on FY10 actual data. Note: FY11 actual data is not yet available.

Waste Capture Goal (in tons)	
Total FY10 Municipal Solid Waste	1,080,346
Total FY10 Waste Recycled	471,361
Recycling Rate	43.6%
Recycling Rate Goal	50%
Waste Capture Goal at 50%	540,173
Additional Waste Capture at 50% goal	68,812

The composition study identified non-residential paper as the biggest opportunity to boost recycling rates with regard to materials already banned from the disposal stream, and food waste as the biggest opportunity of materials not currently banned from the disposal stream.¹

¹ In July 2008, DEP substantially expanded its plastics recycling program. While not representing as high a percentage of waste stream tonnage as paper and food waste, any increases in the capture rate of plastics does positively affect the overall recycling rate.

The single-family sector recycles approximately 66 percent of its mixed paper waste generated. The non-residential sector is at about 57%, and generates about 50% more mixed paper waste than the single-family sector.

Food waste is the largest non-banned material type. However, currently, almost no food waste is recycled from the single-family sector, and very little is recycled in the other sectors.

Ramping up recycling (i.e., composting) of food waste is complicated by the fact that the County's yard trim compost facility is designed to process yard trim only. Therefore, the County's food waste composting efforts will need to rely on emerging markets in the region.

DEP is in the process of establishing a food waste recycling pilot project at the Executive Office Building (EOB) cafeteria to test the feasibility of a more comprehensive food waste recycling effort.

2. County Agency Procurement Initiatives/Environmentally Friendly Purchasing

Please see attached memorandum from the IPCC Chair on ©16 and 17. The IPCC meets periodically with the Council's Government Operations & Fiscal Policy (GO) Committee. The focus of the IPCC's efforts over the past year has been to facilitate single-agency managed contracts for green vehicles and office paper (30% recycled content).

The County's Department of General Services is required (by Section 11B-56 "Procurement of goods containing recycled materials") to report to the Council by September 30 of each year on its environmentally friendly purchasing efforts. This year's report is currently being finalized.

3. Recycling Potential and Alternatives to the Use of Polystyrene

DEP staff can update the Committee on polystyrene recycling. Currently, Montgomery County does not process polystyrene for recycling. As part of the regular waste stream, it is burned at the Resource Recovery Facility (RRF), and any residual ash is sent to an out-of-county landfill.

Polystyrene can be recycled. A recent article from the Gazette Newspapers (see ©20-21) notes that Carroll County's polystyrene is reprocessed at a facility in Pennsylvania. However, according to the article, the market for this material is limited. Montgomery County DEP staff are quoted in the article as noting that "the materials we accept for recycling is really based on those that have strong, stable markets." DEP staff will be available at the meeting to talk more about current market conditions and challenges for Montgomery County to recycle this material.

With regard to alternatives to the use of polystyrene, MCPS staff will be available to discuss MCPS' use of polystyrene trays in its school cafeterias. MCPS has studied the costs of switching to pressed paperboard trays, and found that the cost for pressed paperboard trays is about four times the cost of polystyrene trays (12 cents per tray versus 3 cents per tray, with an increased annual cost totaling about \$1 million).

The polystyrene issue came up several years ago in the context of the Young Activist Club at Piney Branch Elementary School. This group supported moving to reusable trays and flatware utensils and adding a dishwasher on site. In March of 2010, a majority of Councilmembers sent a letter to MCPS in support of the Young Activist Club's request (see ©25-26).

MCPS had previously reviewed this issue (see analysis dated June 2009 on ©27-32), concluding that a move to reusable trays and utensils in general at Montgomery County schools was problematic for space reasons and that, even at schools such as Piney Branch Elementary School which have space, the upfront and annual costs associated with a dishwashing system are more than twice the cost of the current practice and far higher than the costs estimated by the Club. MCPS suggested that it would consider implementing a switch to pressed paperboard trays at Piney Branch Elementary School if the school community was willing to raise funds to cover the additional cost (\$4,500).

In response to the Council letter, MCPS reiterated its conclusions above and also noted that, of Piney Branch Elementary School's carbon impact, polystyrene trays make up approximately 0.2% or less (see letter on ©22-24).

Attachments

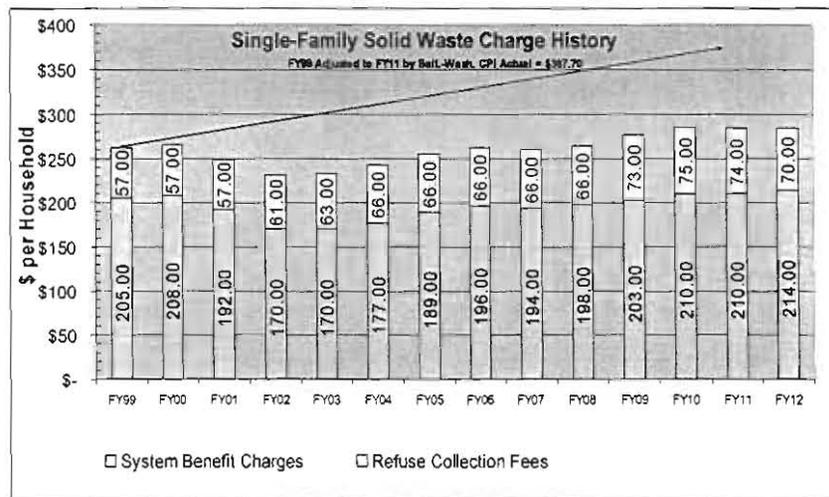
KML:f:\levchenko\solid waste\quarterly briefings\t&e committee 9 26 11 recycling update.doc

DSWS T & E Briefing

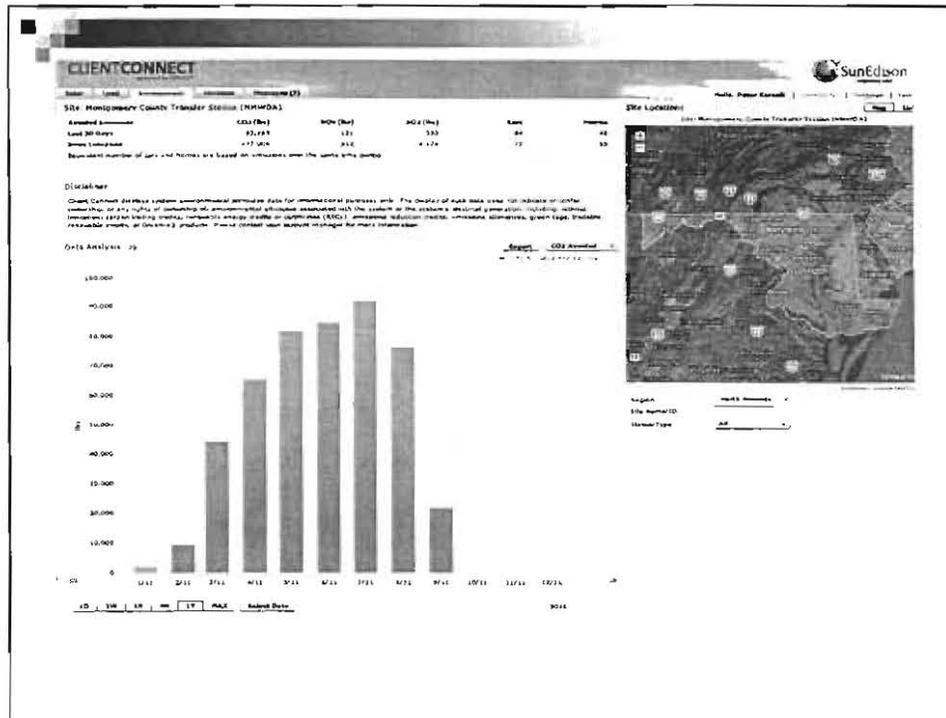
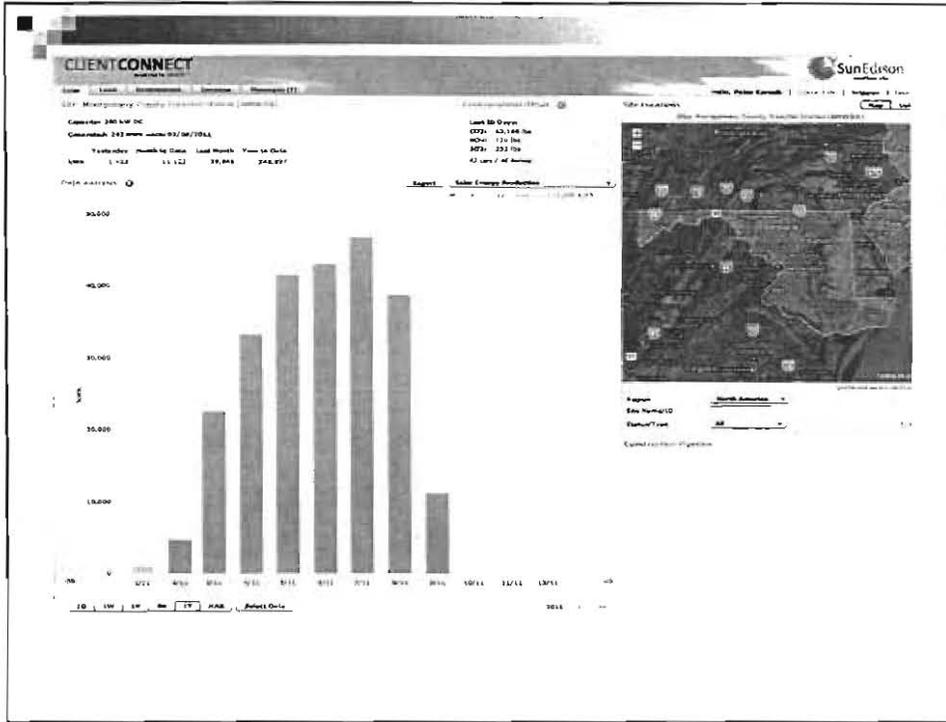


September 26, 2011

Single – Family SWS Charge History



Solid Waste Charges do not include leaf vacuuming charges



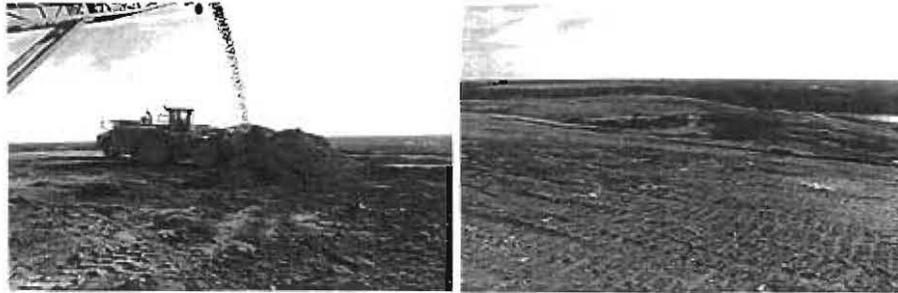
Ash Recycling at Old Dominion Landfill (fall 2010)



Additional Metal Recovered During Screening of the Ash (about 2,000 tons per year)



Screened Ash Used as Alternate Daily Cover



Ash Recycled Under the Out-of-County Contract in Last 12 Months

- Approximately 167,000 tons of ash residue have been beneficially reused in the last 12 months at Old Dominion Landfill, in Henrico County, VA.
- The County receives a \$2.50 per ton credit for each ton of ash recycled resulting in a savings of \$417,500 in contract costs over the past year.

Collections Update FY12

- “Missed collections” down 25%
- Recycling bin requests up 21%
- Recycling Services to 210,000 homes
- Refuse Services to 90,000 homes
- 125 vehicles in collection fleet
- All current refuse and recycling collection contracts have or will expire 2010 – 2012

What's new in 2011 Collection Contracts

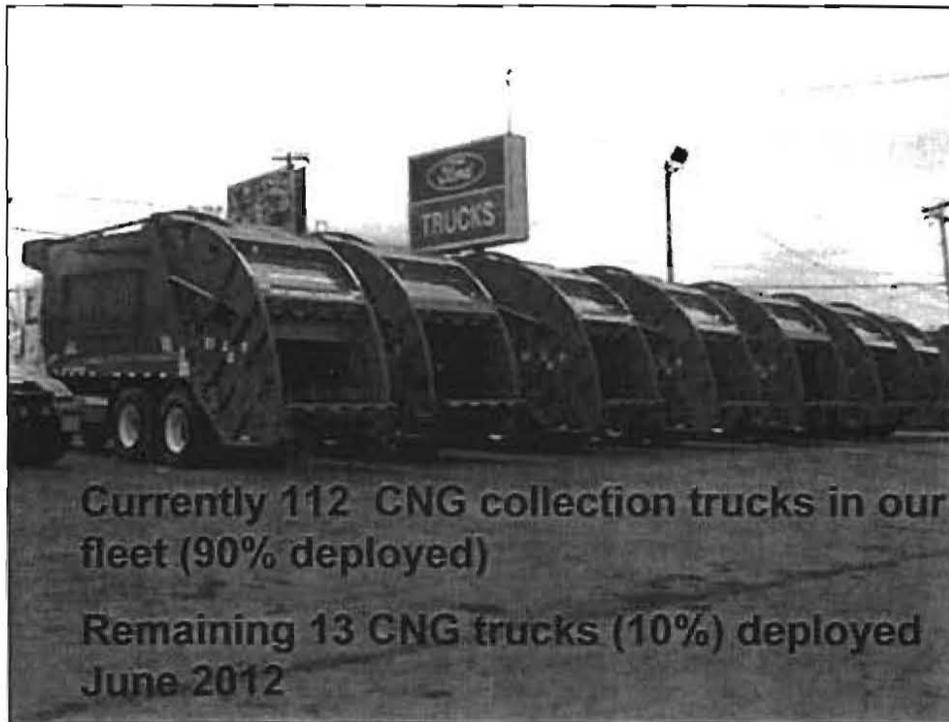
- Require all new vehicles
- All vehicles must meet 2010 EPA air quality/ emission standards
- All collection vehicles will be powered with compressed natural gas (CNG)
- Supervisors' vehicles hybrid or CNG
- Savings to date = \$1 million per year

Why CNG?

- **It's Cleaner**
 - Reduces smog causing Nitrogen Oxide (NOx) emissions by 80%
 - Reduces greenhouse gas emissions 10 – 15%
 - Reduces asthma causing particulate matter (soot) by 74 – 90%
 - Cleaner air for collection personnel and community
 - Engines meet 2010 EPA vehicle emission requirements
- **It's Cheaper**
 - Nationwide 15 - 30% less per gallon than diesel (Mont Co 30%)
 - Cleaner fuel = lower maintenance costs
 - State and Federal Tax Credits available for vehicle purchase (\$32,000 per vehicle federal tax credit) 80% of incremental cost
- **It's Quieter**
 - 50 - 90% quieter than diesel trucks
- **It's Domestic**
 - 97% of U.S. natural gas is produced in the U.S.

New 2010 CNG Powered Trucks





Food Waste Recycling

Demonstration Project in EOB Cafeteria



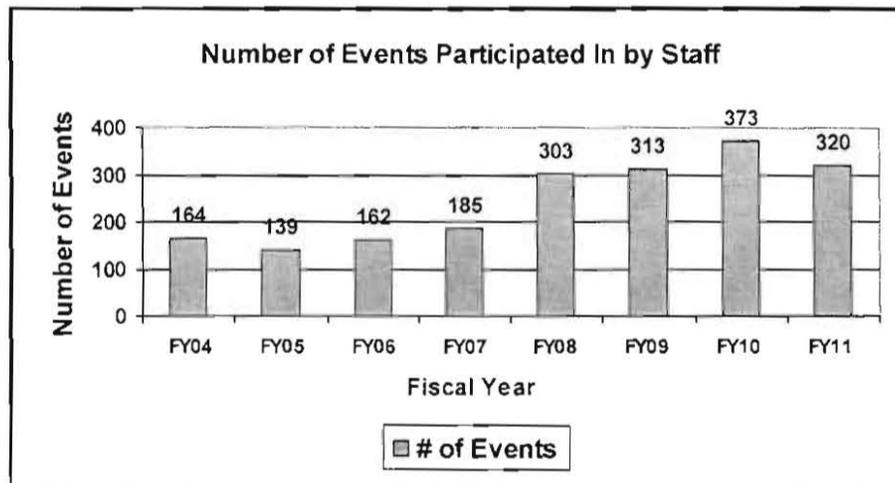
- Showcase and highlight to others
- Planning/prep phase now
- Pre-consumer food waste for recycling
- Additional waste reduction and recycling best practices as well
- Education and training materials
- Containers and storage
- Collection and transport
- Reports and data

Outreach and Education

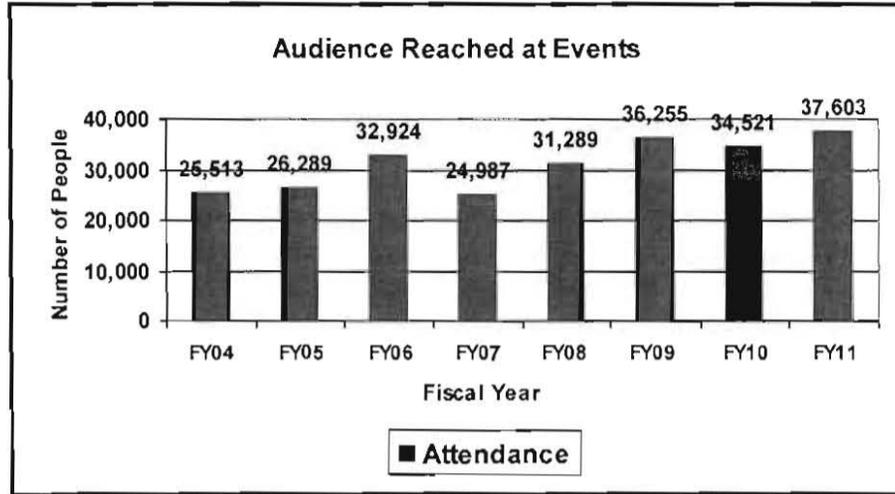


320 Events/Activities in FY11 Reaching 37,603
Participants Directly

Outreach and Education



Outreach and Education



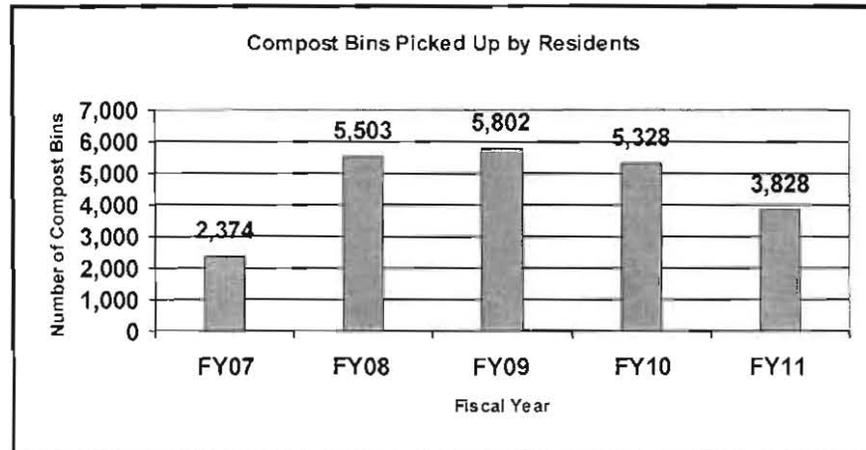
Grasscycling and Composting Education



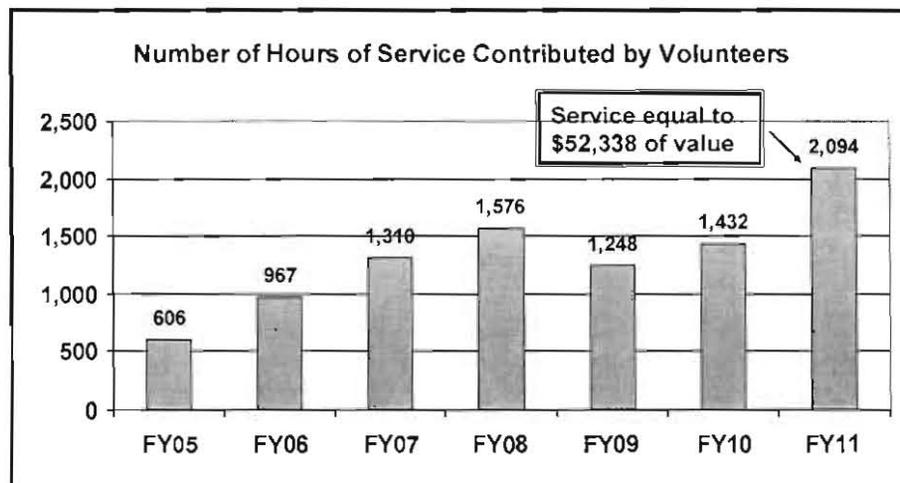
- Training Workshops/Seminars
- Website
- Electronic newsletters
- Outreach events
- Work with lawn service providers
- Compost demonstration site at Meadowside Nature Center
- Working on second site
- Revised educational materials and translations
- More compost bin distribution locations & hours



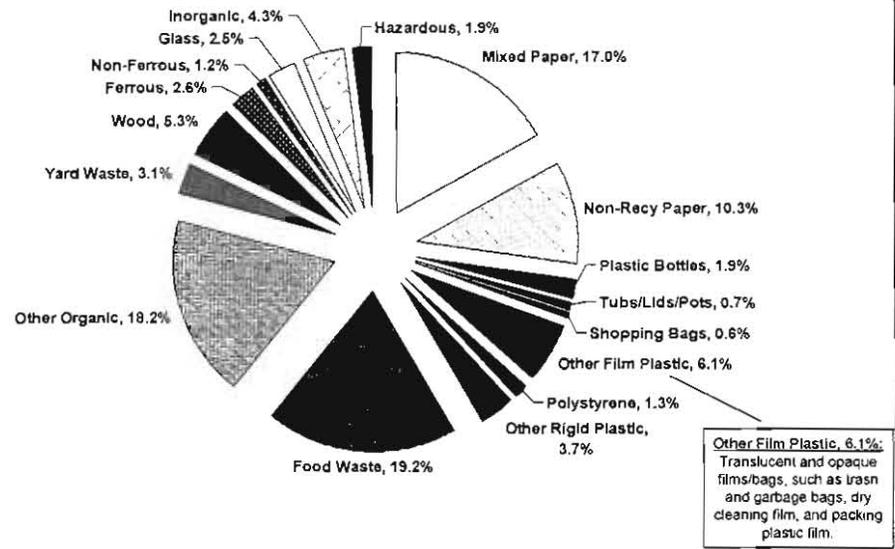
Backyard Compost Bins



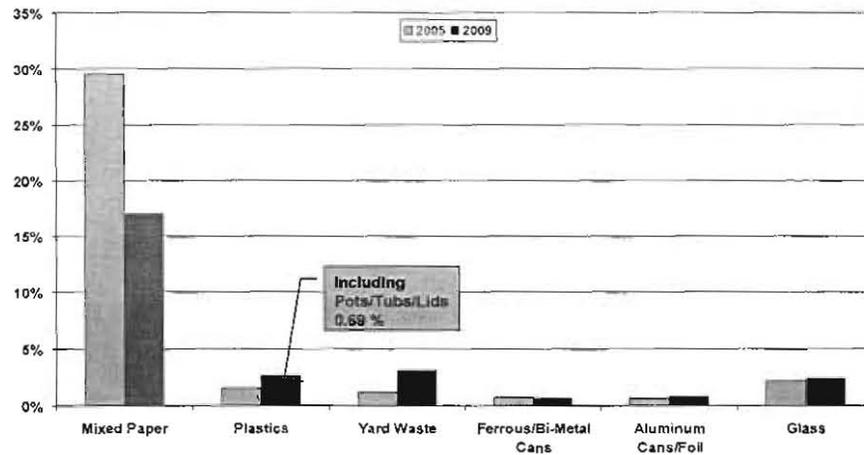
Recycling Volunteer Program



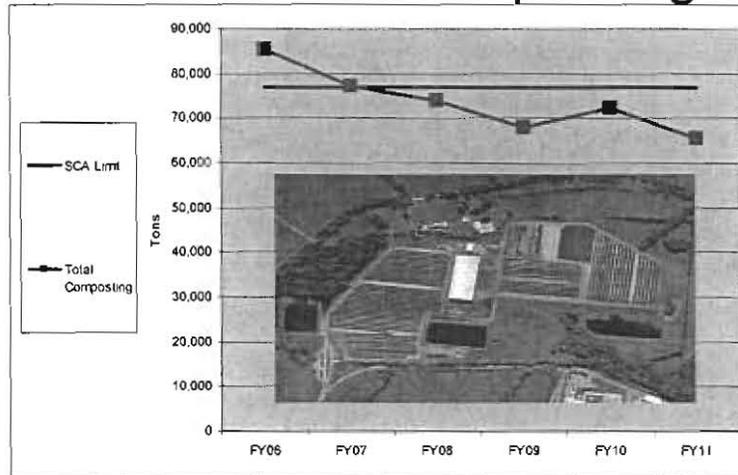
Waste Composition Results 2009



Comparison: 2005 vs. 2009 Recyclables in Waste Stream

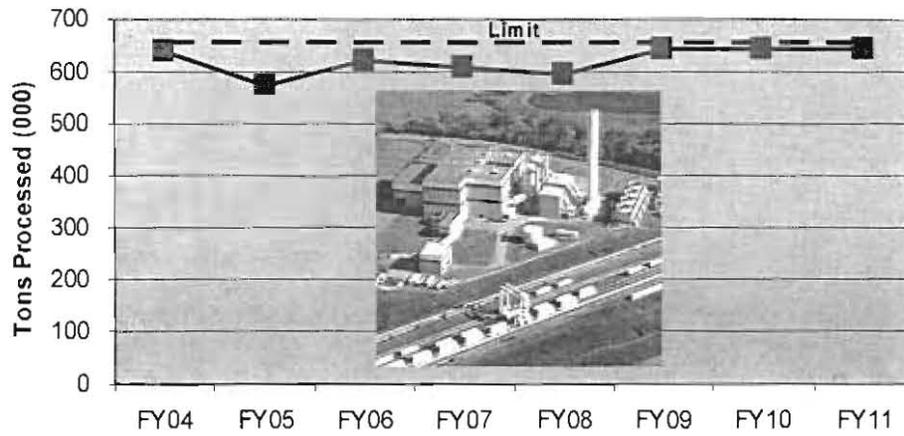


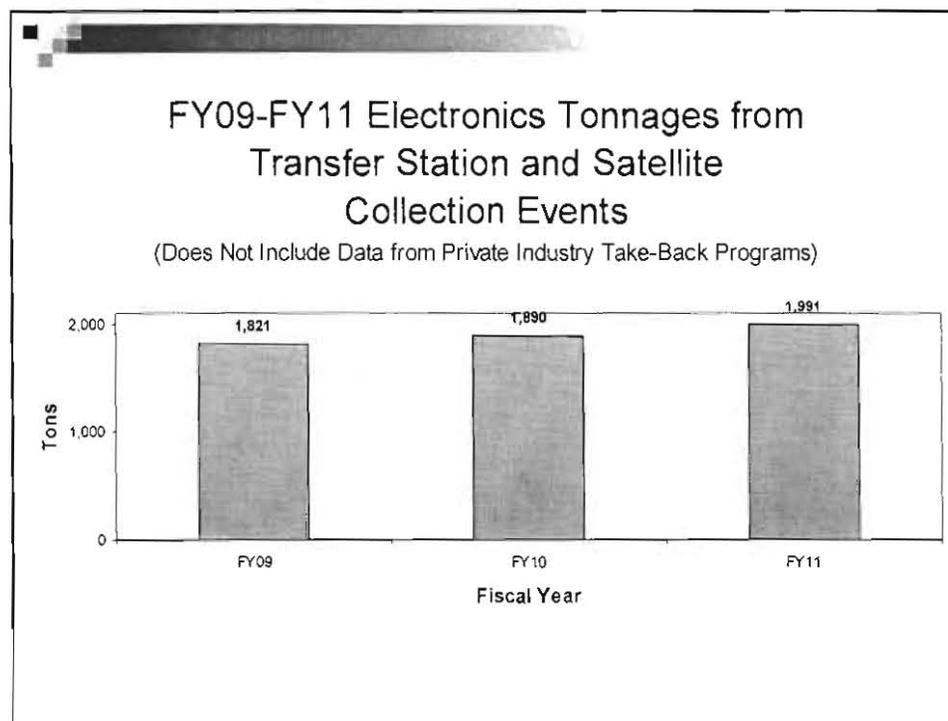
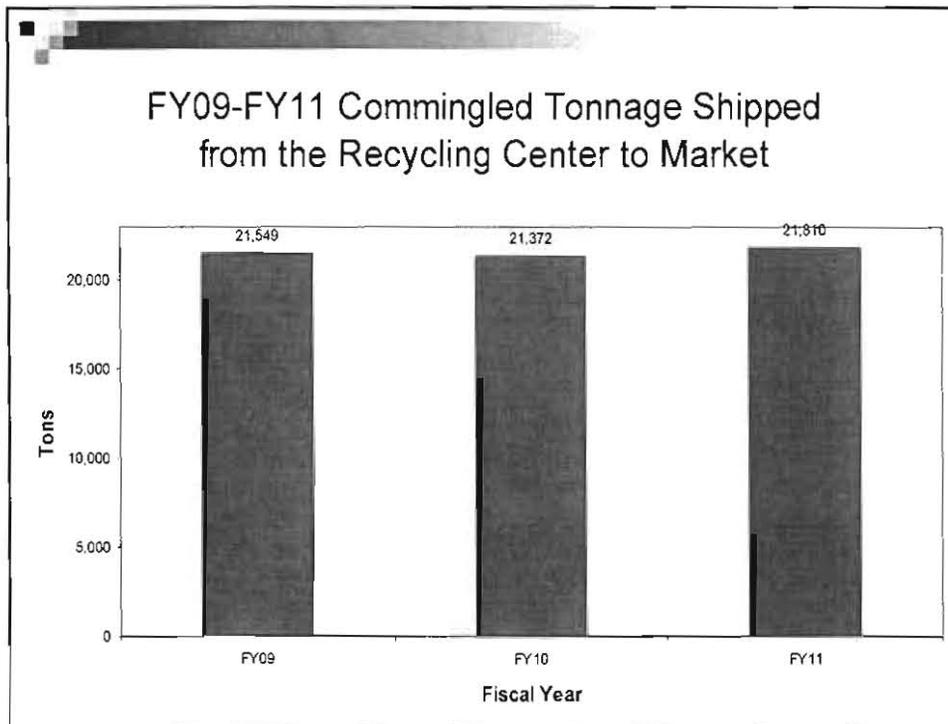
Yard Trim Composting



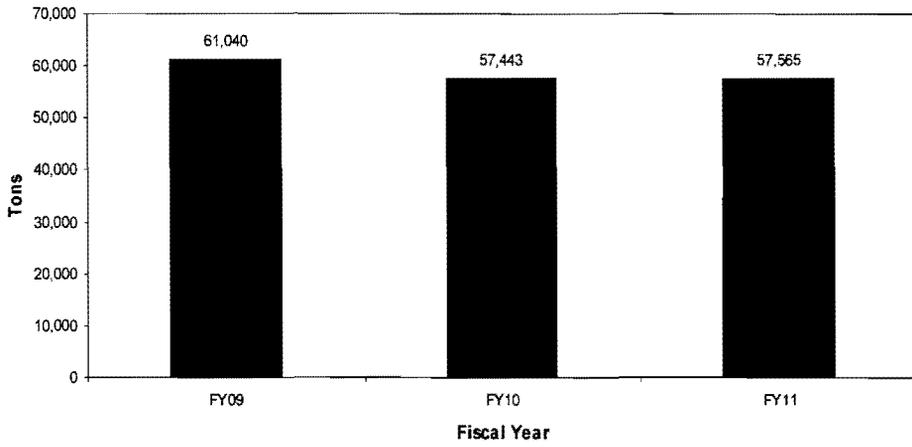
	FY06	FY07	FY08	FY09	FY10	FY11
Delivered to Dickers on Facility	76,948	69,033	74,040	67,928	72,349	65,393
Diverted to Back-Up Facilities	8,530	8,247	0	0	0	0
Total Composted	85,478	77,280	74,040	67,928	72,349	65,393

Waste Processed at County RRF





FY09-FY11 Mixed Paper Tonnage Shipped from the Recycling Center



MEMORANDUM

September 26, 2011

TO: County Council

FROM: Interagency Procurement Coordinating Committee (IPCC)

SUBJECT: Environmentally Preferable Procurement

The members of the IPCC are: (1) Philip J. McGaughey, Jr., Chair IPCC, Director of Procurement, Montgomery County Public Schools; (2) William T. Anderson, Procurement Officer, Housing Opportunities Commission; (3) David E. Dise, Director, Department of General Services (DGS), Montgomery County Government; (4) Pam Jones, Division Chief, DGS, Office of Procurement, Montgomery County Government; (5) Stacey M. Pearson, Maryland-National Capital Park and Planning Commission; (6) Cathy Martin, Acquisition Director, Washington Suburban Sanitary Commission; (7) Dr. Janet Wormack, Director of Procurement, Montgomery College.

Since inception of the IPCC over twenty years ago, Montgomery County agencies have participated in many cost saving projects through cooperative purchasing efforts. Procurement staffs have collaboratively planned and executed (and continue to do so) various acquisitions to support all Montgomery County agencies. These actions have resulted in the purchase of electricity, hybrid vehicles, natural gas, gasoline, online training, health care benefits, life insurance, vision services, dental benefits, and actuary services while also looking at purchasing “green”, environmentally preferable goods and services.

In addition to utilizing county agency staffs, considerable help is received through the Metropolitan Washington Council of Governments (COG), Maryland Public Purchasing Association (MPPA) and other respective educational and professional associations used in the procurement profession. Our goal in this area is to refine what constitutes “green purchasing” so that our efforts are relevant to the agency and understood by employees and suppliers. Based on our work together, the group developed a purchasing policy that promotes the use of environmentally preferable products to the extent possible.

The IPCC, in an effort to better coordinate the purchase of Environmentally Preferable Products (EPPs) and to provide resource tools to its customers, developed a “green” website with specifications of most commonly purchased EPPs, third party certifications, and definitions. Two of its members also participate in the State of Maryland’s Strategic Subcommittee on Green Purchasing. The additionally informational learned will be applied to enhance the website and develop additional strategies. Some of the collaborative work already completed in this area include:

- Completed a cross-agency procurement seminar dedicated to environmentally preferable products with presentations from small business and other agencies. This was a training opportunity for agency staff members.

- Through a single-agency (County) managed contract, purchased vehicles including “green” automobiles, which include hybrid and partial zero emission cars.
- Through a single-agency (MCPS) managed contract, purchased paper using various post-consumer waste requirements in the specifications to ensure the paper is defined as an environmentally preferable product. The group used the Federal Government standard, which considers paper manufactured with pulp comprised of 30% post-consumer waste to be recycled.
- Developed EPP website as a resource tool for staff and department users; will be modified based on additional resource tools learned from participation in State Strategic Subcommittee.

The group is working with key internal customers to help end users with “green” cleaning products using guidance from school state law. This item is in its infancy and strategies are still being developed.

Although not related to environmental purchasing the group works extremely well together and interacts even if a single agency has a specific problem. This synergy serves its members well and a solution may be just a phone call away. In closing, the five major members of the IPCC believe there are other actions to be pursued and as time permits continues to explore opportunities presented by senior management staffs, internal staffs and vendors.



MONTGOMERY COUNTY COUNCIL
ROCKVILLE, MARYLAND

VALERIE ERVIN
COUNCILMEMBER
DISTRICT 5

Memorandum

June 2, 2011

To: Council Vice President Roger Berliner, T&E Committee Chair

Re: Request for Briefing on County Use of Non-Recyclable Materials

I respectfully request a Transportation, Infrastructure, Energy and Environment (T&E) Committee meeting on County agency use of products that are currently not recyclable, including polystyrene.

At the County Council's February 2010 Town Hall meeting for students, we heard from the Young Activist Club at Piney Branch Elementary School. The Young Activist Club spoke eloquently about the No Styrofoam Campaign, and the desire to eliminate the use of polystyrene trays and plastic utensils by installing a dishwasher and purchasing a set of reusable trays and utensils for their school. After the Board of Education and Superintendent responded to my May 2009 letter indicating that Montgomery County Public Schools (MCPS) will not implement a dishwasher pilot program at Piney Branch Elementary, six County Councilmembers, including us, reasserted their support for the project in March 2010.

Further, several jurisdictions across the United States have enacted restrictions or bans regarding the purchase or use of polystyrene. The City of Takoma Park's resolution restricting the City's purchase of polystyrene food service ware became effective as of September 1, 2010.

As a leader in environmental sustainability, Montgomery County should consider the implications of purchasing non-recyclable products. In this respect, I would like to request a T&E Committee meeting on County agency use of non-recyclable products. Specifically, I would like the T&E Committee to take up:

- Types of materials that are not currently recycled in the County, with a focus on materials such as polystyrene (not including food);
- Available data on the composition of these materials in the County's waste stream;
- County agency and vendor expenditures on non-recyclable products;
- Potential ways to utilize reusable and/or recyclable products in the future; and
- Fiscal impacts of changes in the purchasing of these products.

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Thank you in advance for your continuing environmental leadership on the Council and your consideration of this matter. If you have any questions regarding this request, please feel free to contact my office.

Sincerely,



Valerie Ervin
Montgomery County Council President
Councilmember – District 5

c: Councilmembers
Keith Levchenko, Council Staff
Robert Hoyt, Director, Department of Environmental Protection

Gazette.Net

Maryland Community News

Published: Friday, July 22, 2011

Carroll County takes on polystyrene recycling by C. Benjamin Ford
Staff Writer

When Carroll County's recycling program set up bins to receive polystyrene containers, better known by the Styrofoam brand name, it became only the second jurisdiction in Maryland to recycle the material. The county provides space at its landfill entrance, near its other recycling bins, for private contractor Dart Container Corp. to set up a bin for polystyrene, said Carroll County Recycling Manager Maria Myers. The program launched July 1.

Carroll County decided to recycle polystyrene after Myers read an article about Dart's polystyrene recycling and contacted the company to see if it wanted to begin a project with Carroll County schools. Instead, the company offered the bins to collect recycling for the county, she said.

Recycling experts say polystyrene is difficult to recycle because the market for it is limited. Also, not all types of the material can be recycled.

But many people want to recycle as much as possible and Myers said she wanted to give residents that option.

"Folks really want to recycle everything they can," Myers said. "They just think it's the right thing to do to keep as much out of our landfills as possible."

The only other county in the state to recycle polystyrene, Washington County, also contracts out its recycling to a private company, which sorts the recyclables and sells the materials on the scrap market, said Tony Drury, the recycling program coordinator with the county's Division of Environmental Management's Solid Waste Department. Washington County's contractor determined which materials it could find markets for and what it would collect among recyclable material.

Washington County began its polystyrene recycling program last year, though figures were unavailable on how much of the ubiquitous, lightweight material the county has collected, Drury said.

In 2010, the county recycled about 55,000 tons of total material.

As more people see neighbors recycle, they also begin to recycle, said Steven L. Johnson, a professor at Temple University's Fox School of Business in Philadelphia who has studied social trends. Then it becomes a regular routine for them as well.

"Once people see their neighbors recycling Styrofoam they'll get on board," Johnson said.

Recycling programs vary throughout the state, from weekly curbside recycling in Baltimore city to residents dropping off their recycling at bins throughout Washington County, recycling experts said.

Statewide, about 43 percent of all waste was diverted to recycling instead of going into landfills or incinerators, said Jay Apperson, a spokesman for the Maryland Department of the Environment.

Maryland should be doing even more recycling, said Tommy Landers, spokesman for activist group Environment Maryland.

"Recycling is one of the smartest things we can do," Landers said.

Polystyrene is considered one of the more difficult materials to recycle, recycling experts said. Carroll and Washington counties both take only one type of polystyrene, known as Polystyrene No. 6, which is made into white takeout food cartons, cups and egg cartons as well as molded cushioning for electronic equipment. Neither center takes the polystyrene "peanuts" which are used to fill many boxes for cushioning. The peanuts are not Polystyrene No. 6, Myers said. She encourages people to take them to the Post Office or delivery companies, which can provide them to customers to use for packing shipments.

The polystyrene also has to be clean. Carroll County's polystyrene is reprocessed at a facility in Pennsylvania, which mixes it with other materials to make building insulation and picture frames, Myers said.

Nationwide, several cities have banned local businesses from using polystyrene containers, and debate over a similar ban is under way in California. One of the big concerns expressed by polystyrene critics is that the material is not biodegradable and is believed to take hundreds of years to break down in nature.

A coalition of business groups in California say the bans hurt small restaurants that cannot find cheaper alternative containers for takeout meals and that banning polystyrene hurts both businesses that operate on thin profit margins and customers, who would have the higher costs of packaging materials passed on to them.

The market for recycled polystyrene is too small for a jurisdiction such as Montgomery County to accept, said Eileen Kao, chief of the waste reduction and recycling section of the Montgomery County Department of Environmental Protection. The center received nearly 84,000 tons of recyclable materials in fiscal 2010.

"That is one material we don't collect," Kao said. "Our decision on the materials we accept for recycling is really based on those that have strong, stable markets."

Montgomery County's recycling program, which began in the 1970s, is considered one of the most extensive in the state in accepting a wide range of plastics and other materials, Kao said.

An estimated 44 percent of the waste generated in the county is recycled.

Montgomery County has made certain that before it accepts a recyclable product, a market for it exists, so the material doesn't end up in a landfill, Kao said.

Polystyrene "is one of those materials for which in our experience we've not had the confidence that there are strong stable markets for that material in the long term," Kao added.

If more stable markets become available, polystyrene will be added to the list of recyclable materials in Montgomery County, Kao said.

cford@gazette.net

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MONTGOMERY COUNTY BOARD OF EDUCATION

850 Hungerford Drive ♦ Rockville, Maryland 20850

April 15, 2010

The Honorable Valerie Ervin, Vice President
The Honorable Roger Berliner
The Honorable Marc Elrich
The Honorable George Leventhal
The Honorable Nancy Navarro
The Honorable Duchy Trachtenberg
Montgomery County Council
Stella B. Werner Council Office Building
100 Maryland Avenue
Rockville, Maryland 20850

Dear Councilmembers Ervin, Berliner, Elrich, Leventhal, Navarro, and Trachtenberg:

Thank you for your letter dated March 23, 2010, regarding the Piney Branch Elementary School Young Activist Club's proposal to install a dishwashing machine at Piney Branch Elementary School. We appreciate the students' enthusiasm and tenacity in advocating for this issue. This proposal has been extensively considered and analyzed. In spite of the sincere advocacy of the students and public relations actions of the group's sponsors, we do not believe the request to install a dishwasher is in the best interest of Montgomery County Public Schools (MCPS). We are not persuaded that there are sufficient environmental benefits from this proposal to justify the additional costs and staff efforts associated with implementing the proposal.

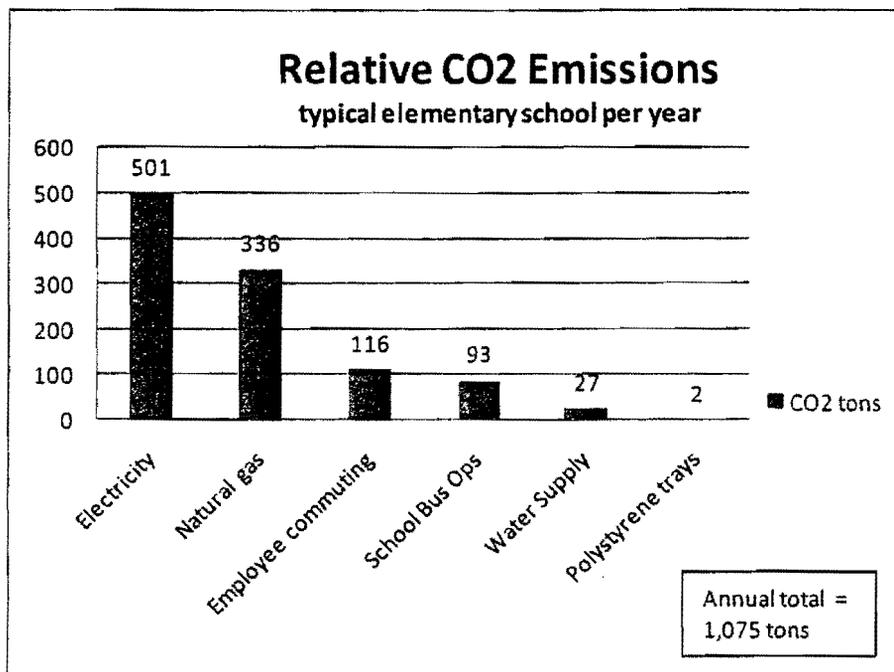
It appears that there are two separate issues that have become intertwined by the sponsors of the Young Activists Club—eliminating polystyrene trays and installing a dishwashing machine. Eliminating polystyrene is a much larger issue than disposable trays at one elementary school. Polystyrene food packaging and serving materials are regulated by the United States Food and Drug Administration (FDA) and are approved for use in restaurants across the county, state, and country. MCPS operates over 200 food service facilities and relies on the use of FDA-approved materials to provide more than 30,000 nutritious and economical meals each school day. Any discussion about eliminating the use of polystyrene items from the food service industry should not be limited solely to school cafeterias.

The installation of a dishwashing machine as a means to eliminate polystyrene trays is not viable. MCPS has determined the actual costs of the dishwashing machine proposal and compared them to the costs developed by the Young Activist Club's sponsors. We have offered to explore options to discontinue the use of polystyrene trays at Piney Branch Elementary School. The Young Activist Club's sponsors chose not to pursue other options but persisted in their quest to install a dishwashing machine as the only means to eliminate polystyrene trays. We believe that decision has placed everyone, including the students, in a difficult situation.

MCPS has demonstrated its commitment to sustainable practices in its operations. We have attempted to concentrate limited resources to produce the greatest return on investment, ensure a

healthy environment for students and staff, and reduce the system's overall carbon footprint. MCPS has focused its resources on reducing energy consumption and increasing recycling rates through its School Energy and Recycling Team (SERT) program; installing solar photovoltaic panels on eight schools; having 18 schools (occupied, under construction, or in design) that will be Leadership in Energy and Environmental Design (LEED) certified, and implementing "green" cleaning practices throughout the system.

Our staff has evaluated the various components that comprise the carbon footprint of Piney Branch Elementary School. As seen in the chart below, polystyrene represents approximately 0.2 percent of the carbon footprint. However, small as this is, this figure still overstates the carbon impact from the polystyrene trays. All polystyrene cafeteria trays are incinerated in the Resource Recovery Facility. Because polystyrene is composed of hydrocarbons, all of the energy content of the polystyrene is released in the incineration process and is used to produce electricity. Because the polystyrene is incinerated at very high temperatures, typically between 1,800 degrees to 2,000 degrees Fahrenheit, the products of combustion are primarily carbon dioxide and water—the same as the products of combustion from the majority of other fuels used to generate electricity. Therefore, the carbon footprint from polystyrene is effectively recycled into useful electricity and the environmental impact is relatively small.



Given this data, we are not convinced that the elimination of polystyrene trays would have significant environmental benefits relative to what could be achieved with investment in other measures. If we are going to invest staff time and funding, there are many more opportunities to pursue in regard to energy efficiency and conservation that will deliver a positive return on investment and have a much greater impact on carbon emissions.

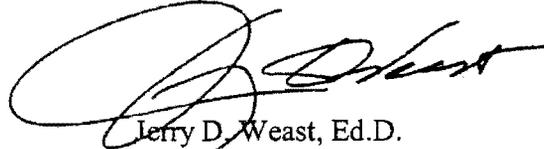
While we enjoy the support of the County Council on many efforts, we believe we have given the Young Activist Club's proposal thorough consideration and must respectfully disagree with the councilmembers' urging to proceed with the proposal to install a dishwashing machine at Piney Branch Elementary School. MCPS believes the elimination of polystyrene requires a much larger dialogue that would involve all food service establishments in the county. MCPS would be happy to participate in such a dialogue if the Council chooses to take the lead in this effort. However, it needs to be clearly understood that the cost to the MCPS Food Services program would be at least \$1 million annually.

With limited resources and staff time, we must make choices about how to invest in initiatives that will make the most difference for our mission and benefit to our community. I hope that with the above information you can understand the reasons for our decision. We appreciate your understanding of the various issues that must be considered in the selection of cafeteria trays and utensils. Should there be additional questions, Mr. Joseph Lavorgna, acting director, Department of Facilities Management, is available to speak with you by telephone at 240-314-1060.

Respectfully,



Patricia O'Neill, President
Board of Education



Jerry D. Weast, Ed.D.
Superintendent of Schools

PO:JDW:jlc

Copy to:

Senator Raskin
Delegate Hixson
Delegate Hucker
Delegate Mizeur
Council President Floreen
Councilmember Andrews
Councilmember Knapp
Mayor Williams
Members of the Board of Education

Mr. Bowers
Dr. Lacey
Dr. Stetson
Ms. Mills
Mr. Generlette
✓ Mr. Lavorgna
Ms. Wood
Ms. McGuire



MONTGOMERY COUNTY COUNCIL
ROCKVILLE, MARYLAND

March 23, 2010

RECEIVED

Montgomery County Public Schools
850 Hungerford Drive
Rockville, MD 20850

OFFICE OF THE
SUPERINTENDENT OF SCHOOLS

Patricia O'Neill, President, Montgomery County Public Schools Board of Education
Dr. Jerry Weast, Superintendent, Montgomery County Public Schools

Dear Ms. O'Neill and Dr. Weast:

On February 3, the County Council held its first Town Hall meeting for students. We heard from many youth around the county about various issues, many of which were education related. Anna Brookes, a member of the Young Activist Club and 3rd grader at Piney Branch Elementary School, testified and spoke eloquently about the No Styrofoam Campaign at Piney Branch Elementary School.

As you know, Piney Branch Elementary School would like to eliminate the use of Styrofoam trays and plastic utensils by installing a dishwasher and purchasing a set of reusable trays and utensils for their school. The Young Activist Club first met with Councilmember Valerie Ervin, Chair of the Education Committee, regarding their proposal in May 2009. Councilmember Ervin wrote a letter to the Montgomery County Board of Education and the Superintendent requesting that Piney Branch be able to proceed with this pilot project. In June 2009, Dr. Jerry Weast replied in a letter that he was "willing to consider allowing the Piney Branch Elementary School Parent Teacher Association to pilot the use of paperboard trays providing that it pay the cost differential of about \$4,500." In December, Councilmember Marc Elrich discussed the issue with various members of the Board of Education, expressing his support for the project and willingness to help find a solution.

However, Montgomery County Public Schools (MCPS) have indicated that they will not implement a dishwasher pilot program at Piney Branch Elementary.

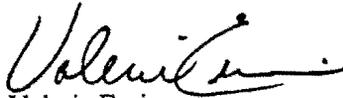
A majority of the County Council believes that MCPS should allow this pilot to proceed so that we can determine whether using reusable trays and utensils can reduce our carbon footprint. Piney Branch Elementary School understands that there will be upfront costs including purchasing the trays, utensils and a dishwasher. They also recognize there will be increased labor expenses as well as incremental costs for water and electricity. The Young Activist Club has promised to absorb 100% of the expenses associated with this program and will sign a Memorandum of Understanding with MCPS. To date, the Young Activist Club has raised more than \$10,000 and they feel that this will adequately cover the additional costs mentioned above.

Ms. O'Neill and Dr. Weast
March 23, 2010
Page 2

We wish to stress the environmental and public health implications of this change. Polystyrene is made from non-biodegradable fossil fuels, and has a high carbon footprint, all of which negatively impact the environment. Polystyrene also has adverse effects on public health, as it is made from styrene, a known neurotoxin and suspected carcinogen.

By approving this pilot project, MCPS will have access to data and information that will allow them to make an informed decision about whether this is a viable option for other facilities in the school system. Additionally, the Young Activist Club acknowledges there would be no obligation to continue this program at Piney Branch or to implement this program elsewhere in Montgomery County. This is a win-win proposal for MCPS, Piney Branch Elementary School, and the environment. Thank you for your time and consideration of this matter.

Sincerely,



Valerie Ervin
Council Vice President – District 5



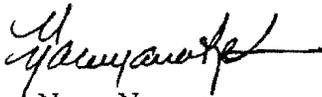
Roger Berliner
Councilmember – District 1



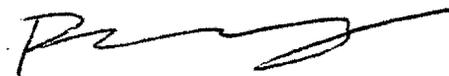
Marc Elrich
Councilmember – At Large



George Leventhal
Councilmember – At Large



Nancy Navarro
Councilmember – District 4



Duchy Trachtenberg
Councilmember – At Large

- c: Larry Bowers, Chief Operating Officer, MCPS
Joseph Lavorgna, Acting Director, Division of Facilities Management, MCPS
Suzanne Wood, Director, Division of Food and Nutrition Services, MCPS
Bertram Generlette, Principal, Piney Branch Elementary School
Bruce Williams, Mayor, City of Takoma Park
Jamie Raskin, Maryland State Senator, District 20
Sheila Hixson, Maryland State Delegate, District 20
Tom Hucker, Maryland State Delegate, District 20
Heather Mizeur, Maryland State Delegate, District 20
Essie McGuire, County Council Staff



June 24, 2009

The Honorable Valerie Ervin, Chair, Education Committee
Montgomery County Council
Stella B. Werner Council Office Building
100 Maryland Avenue
Rockville, Maryland 20850

Dear Ms. Ervin:

Thank you for your letter to Ms. Brandman and to me, dated June 12, 2009, regarding the proposal to eliminate polystyrene cafeteria trays and plastic utensils at Piney Branch Elementary School. I certainly appreciate students and community members researching issues and proposing improvements.

Dishwashing equipment was removed from Montgomery County Public Schools (MCPS) schools more than 25 years ago as a cost-savings measure. Polystyrene trays have been used since that time. The Division of Food and Nutrition Services continually reviews non-polystyrene options for cafeteria trays; however, over the years, these options have been found to be very expensive. As you are aware, the financial condition of the Division of Food and Nutrition Services has progressively worsened with the poor economy. The division will end this fiscal year with a \$2 million deficit. If the Division of Food and Nutrition Services purchases non-polystyrene trays for student use systemwide, there will be an additional expense to the division of more \$1 million, which will only further increase the deficit. The cost of meals to the paying student would have to be increased significantly to cover this additional expense. Although there appear to be some compelling arguments for discontinuing the use of polystyrene cafeteria trays, the trays continue to be safe, affordable, and are disposed of in an environmentally responsible manner.

Staff evaluated two options in addition to continuing the use of polystyrene trays. One option looked at the cost of switching to a recyclable pressed paperboard tray and the other option evaluated the true cost of installing a dishwasher and the requisite equipment at Piney Branch Elementary School along with purchasing reusable trays and utensils. The paperboard tray option would increase costs at Piney Branch Elementary School by about \$4,500. If that option were adopted for the system as a whole, the cost of trays would rise from \$369,000 for polystyrene to \$1,350,000 for pressed paperboard trays. The dishwasher option would cost about \$57,500 initially with recurring annual costs of about \$4,600. I do not believe that incurring the additional cost is a wise use of public resources at this time.

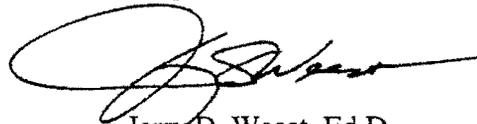
Office of the Superintendent of Schools

850 Hungerford Drive, Room 122 • Rockville, Maryland 20850 • 301-279-3381

I am willing to consider allowing the Piney Branch Elementary School Parent Teacher Association to pilot the use of the paperboard trays providing that it pay the cost differential of about \$4,500. We can evaluate the pilot at the end of next school year and decide whether the school community wants to continue to pay the increased cost for the recyclable paperboard trays.

If you have any questions regarding the enclosed report, please contact Mr. Joseph Lavorgna, acting director, Department of Facilities Management, at 240-314-1060.

Respectfully,



Jerry D. Weast, Ed.D.
Superintendent of Schools

JDW:jlc

Enclosure

Copy to:

Members of the Montgomery County Delegation
Members of the Montgomery County Council
Members of the Board of Education
Mr. Bowers
Mr. Lavorgna
Mr. Generlette
Ms. Lazor

(6)

Report on Polystyrene Cafeteria Trays and the Piney Branch Elementary School Proposal to Utilize Reusable Trays with a Dishwashing System

June 2009

Background

Over the past 25 years, Montgomery County Public Schools (MCPS) has implemented many process changes to its Food Service Program, improving efficiency and effectiveness. One major initiative was to streamline operations in the local schools by shifting food preparation operations first to regional full-production kitchens and finally to a central production facility. These improvements resulted in significant cost savings through the economies-of-scale gained through centralized mass-production operations. School-based staffing levels were reduced and school kitchens were converted to "satellite kitchens" that provide only limited capabilities needed for heating and serving food prepared at the central production facility. Dishwashing capabilities were eliminated as school kitchens were converted to the satellite model.

Even before the shift to centralized production, MCPS had switched from dishwashing systems to disposable polystyrene trays as a cost-efficient improvement. Polystyrene trays have long dominated the market because of their substantial economic advantage. The Division of Food and Nutrition Services continually reviews non-polystyrene options for trays; however, over the years, these options have been found to be very expensive. As you are aware, the financial condition of the Division of Food and Nutrition Services has progressively worsened with the poor economy and the division will end this fiscal year with a \$2 million deficit. If the Division of Food and Nutrition Services purchases non-polystyrene trays for student use systemwide, there will be an additional expense to the division of more than \$1 million, which will only further increase the deficit. The cost of meals to the paying student would have to be increased significantly to cover this additional expense. Although there appear to be some compelling arguments for discontinuing the use of polystyrene trays, the trays continue to be safe, affordable, and are disposed of in an environmentally responsible manner.

Piney Branch Elementary School PTA Proposal

In spring 2009, the Piney Branch Elementary School Parent Teacher Association (PTA) proposed that the school install a dishwasher and purchase reusable trays and flatware to eliminate the use of polystyrene trays. The proposal indicates that the students and PTA feel it is desirable to eliminate the use of polystyrene because of the associated negative environmental impact. In addition, the Piney Branch Elementary School PTA raised funds to help pay for the installation of a used/rebuilt dishwashing machine.

The PTA's proposal underestimates the actual cost of purchasing and installing a dishwashing machine and the related equipment to meet Montgomery County Department of Health and Human Services (DHHS) requirements. In order to comply with DHHS regulations and permit requirements, additional equipment such as a hood, clean and dirty tray tables, and ventilation system are required. Further, the proposal does not include some of the most significant operating costs such as the cost for the labor needed to operate the dishwashing machine, and the utilities and detergent costs associated with a dishwashing system operation.

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Safety and Environmental Issues

Cafeteria trays made of polystyrene are regulated by the Food and Drug Administration (FDA) because of their contact with food. The material that makes up this type of tray is inert in the environment. MCPS relies on the expertise of the FDA and uses trays that comply with FDA regulations for contact with food.

The majority of environmental concerns associated with polystyrene materials relate to the production or the disposal of polystyrene. The production is highly regulated by federal and state environmental laws, and it is beyond the purview of MCPS to review the laws or their enforcement. A main concern regarding disposal is that polystyrene does not biodegrade in landfills. However, this concern is not applicable to Montgomery County because all refuse that is collected from MCPS facilities is incinerated at the resource recovery facility (RRF) located in Dickerson, Maryland. This facility also is regulated and monitored to ensure that it operates properly. The available research shows that polystyrene can be safely incinerated. In addition, when polystyrene is incinerated in an energy recovery facility such as the RRF, it produces a high amount of energy per pound that is converted to electricity. Polystyrene also produces a low amount of residual ash compared to paper or cardboard. Therefore, MCPS reasonably relies on the federal and state regulators and the operators of the RRF to provide for the safe disposal of the polystyrene cafeteria trays.

Cost Comparison of Three Options:

In an effort to address the student and PTA interest in eliminating polystyrene trays and to help to balance the interest of MCPS to keep lunch prices as low as possible, the following three options were compared:

1. Continue to use polystyrene trays and plastic utensils (current practice)
2. Switch to a pressed paperboard type of tray or other recyclable material and continue to use plastic utensils
3. Switch to a reusable tray and reusable flatware utensils, modify the kitchen to install a dishwashing system, and create a new process for food service staff to wash trays and utensils

The Division of Food and Nutrition Services has researched the option of switching to a tray made of recyclable materials. The leading alternative available is pressed paperboard.

A cost comparison, provided in Table 1, details the initial setup and the annual operating costs for the three options. This cost comparison is limited to implementation at Piney Branch Elementary School given that it would not be feasible to install a dishwashing system in most MCPS schools because they were designed to only function as satellite kitchens.

The comparison shows that the lowest cost option is continuing the use of polystyrene trays. Use of pressed paperboard trays would be more than twice as expensive as the current practice. Paperboard trays cost approximately \$0.11 per tray as compared with \$0.03 per tray for polystyrene. For Piney Branch Elementary School to switch to pressed paperboard trays, operating costs would increase approximately \$4,500 per year. If MCPS was to switch to pressed paperboard trays in all schools, the annual cost for cafeteria trays would rise from

\$369,000 for polystyrene to \$1,350,000 for pressed paperboard trays, an increase of nearly \$1 million per year.

The operating costs for the reusable tray and dishwashing system option also are more than twice as expensive as the current practice. In addition, the initial setup costs are much more expensive than the Piney Branch Elementary School PTA proposal estimates. The proposal did not include costs associated with a ventilation system, tables, a dryer, and other DHHS requirements.

Conclusion

In order to keep lunch prices low for the 90,000 meals prepared daily by the Division of Food and Nutrition Services, MCPS uses the most economical option for providing cafeteria trays and utensils to students. Polystyrene is safe to use and disposal costs are minimal. As the disposal of used polystyrene is handled through the RRF, the embedded energy content is converted into electricity rather than being buried in a landfill. Therefore, the polystyrene trays offer a reasonable and cost-effective solution. Paperboard tray use would increase operating costs by about \$1 million annually.

The proposal to switch to reusable trays requires modifying school kitchens to include a dishwashing system. Many school kitchens have space and utility constraints that would be expensive to modify and expand. Even if there is available space such as in the case of the Piney Branch Elementary School kitchen, the cost to add a dishwashing machine and related equipment as required by DHHS and in conformity with building codes is \$57,000; substantially higher than estimated in the Piney Branch Elementary School PTA proposal. In addition, annual operating costs are \$4,582 per year more; more than twice the cost of the current practice. These costs are primarily for the labor and utilities costs required to operate the dishwashing system.

The provision of a nutritional breakfast and lunch to a large portion of Montgomery County students is an essential service. The price of meals has a strong correlation to the rate of student participation. It is very important to operate food services in the most cost-efficient manner possible. Therefore, the recommendation is to continue to use the polystyrene trays as the most efficient and effective system and one that keeps student meal prices at a minimum.

In researching how other school systems have handled this issue, it was found that some have provided an option for school communities who wanted to raise the funds needed to pay for the premium cost of recyclable trays. A possible way to address the interests of the students and PTA at Piney Branch Elementary School is to allow them to pay the cost premium of \$4,475 per year for using pressed paperboard trays at their school as a pilot program. The proposed pilot would allow the Piney Branch Elementary School community to express its advocacy for an alternative to polystyrene. At the end of the one-year pilot, the school community could continue to pay the premium or return to polystyrene trays.

**Table 1 - Piney Branch Elementary School
Cafeteria Tray Cost Comparison**

Initial setup cost				
Items	Polystyrene trays and plasticware utensils	Pressed Paperboard and plasticware utensils	Reusable plastic trays and steel flatware utensils	Comment
Dishwasher, associated equipment			27,100	Based on Nyikos Associates foodservice facility design estimate
Trays, flatware, racks, caddies, other supplies			3,343	Based on the Division of Food and Nutrition Services estimate
Mechanical, electrical rough in and installation			12,000	Based on the Department of Facilities Management estimate
Exhaust hood and ductwork			15,000	Based on the Department of Facilities Management estimate
Subtotal	0	0	57,443	

Annual Operating Costs				
Items	Polystyrene trays and plasticware utensils	Pressed Paperboard and plasticware utensils	Reusable plastic trays and steel flatware utensils	Comment
Disposable trays	2,900	7,425		Actual cost of polystyrene, estimated cost of paperboard
Plastic flatware	1,200	1,200		Actual cost for FY09
Labor	baseline	baseline	7,912	Per health code and for efficient operation, two staff members would be needed to operate the dishwashing machine. The task is estimated to take 1.5 hours to process the trays and flatware through the dishwasher and dryer for a total of 3 hours of staff time per day. Labor is based on a rate of \$13.32/hour and 198 paid days.
Replacement trays			70	Based on 10% lost, damaged, stolen
Replacement flatware			150	Based on 20% lost, damaged, stolen
Tipping fee	50	N/A (recyclable)	N/A	Tipping fee is the cost to dispose of trash at the Shady Grove Transfer Station, currently \$56/ton.
Utilities cost			600	Based on \$3 per day for electricity and water to operate the dishwashing machine
Subtotal	4,150	8,625	8,732	Cost per year

Summary of Cost Increases over Current Practice				
Item	Polystyrene trays and plasticware utensils	Pressed Paperboard and plasticware utensils	Reusable plastic trays and steel flatware utensils	Comment
Annual cost increase over baseline	Current practice	4,475	4,582	Cost per year
Initial equipment cost	No change	No change	57,443	One time cost

Waste Recycling by Material Type: Achievement, Opportunity and Challenge

	FY09 Actuals															Opportunity Currently Disposed (Tons)	Success Scenario To Reach 50% Overall Recycling Rate				
	Single-Family			Multi-Family			Non-Residential			Multi-Family & Non-Residential			Aggregate Actual FY09				Disposed Tons Targeted	Additional Capture (tons)	Generated (tons)	Captured (tons)	Capture Rate %
	Generated (tons)	Captured (tons)	Capture Rate %	Generated (tons)	Captured (tons)	Capture Rate %	Generated (tons)	Captured (tons)	Capture Rate %	Generated (tons)	Captured (tons)	Capture Rate %	Generated (tons)	Captured (tons)	Capture Rate %						
Banned ER15-04	295,000	238,980	81.0%	26,659	9,155	34.3%	295,832	191,699	64.9%	322,491	201,054	62.3%	617,491	440,034	71.3%	177,457	65,317	617,491	505,351	81.8%	
Subtotal, Banned Components	295,000	238,980	81.0%	26,659	9,155	34.3%	295,832	191,699	64.9%	322,491	201,054	62.3%	617,491	440,034	71.3%	177,457	65,317	617,491	505,351	81.8%	
Paper	94,939	62,687	66.0%	11,912	1,890	15.9%	153,383	87,077	56.8%	165,295	88,967	53.8%	260,234	151,655	58.3%	108,579	39,865	260,234	191,620	73.6%	
Glass	19,859	15,140	76.2%	3,233	763	23.6%	12,131	3,728	30.7%	15,365	4,491	29.2%	35,223	19,631	55.7%	15,592	5,739	35,223	25,370	72.0%	
Other Ferrous	15,533	10,609	68.3%	2,749	1,307	47.6%	84,263	57,151	68.9%	67,011	58,458	87.2%	82,544	69,067	83.7%	13,477	4,960	82,544	74,028	89.7%	
Yardwaste	151,625	144,270	95.1%	5,880	4,645	79.0%	50,244	39,584	78.8%	56,124	44,229	78.8%	207,749	188,499	90.7%	19,250	7,085	207,749	195,584	94.1%	
Narrow-Neck Plastics	6,869	3,701	53.9%	1,105	132	12.0%	5,277	100	1.9%	6,382	232	3.6%	13,250	3,933	29.7%	9,318	3,430	13,250	7,362	55.6%	
Ferrous/Bimetal Containers	2,940	1,690	57.5%	837	318	38.0%	2,976	379	12.7%	3,813	697	18.3%	6,752	2,387	35.4%	4,365	1,607	6,752	3,994	59.1%	
Aluminum Beverage Cans	1,271	706	55.5%	443	33	7.3%	2,181	214	9.8%	2,624	246	9.4%	3,895	952	24.4%	2,943	1,083	3,895	2,035	52.3%	
Other Aluminum (Foil)	648	21	3.2%	226	1	0.3%	1,360	1	0.0%	1,585	1	0.1%	2,233	22	1.0%	2,211	814	2,211	836	37.4%	
Other Non-Ferrous Metal	1,317	157	11.9%	275	65	23.8%	4,017	3,665	91.2%	4,293	3,731	86.9%	5,610	3,888	69.3%	1,722	634	5,610	4,522	80.6%	
Potential and Encouraged	43,291	17	0.0%	12,252	1	0.0%	69,724	5,685	8.2%	81,976	5,686	6.9%	125,267	5,703	4.6%	119,564	-	125,267	5,703	4.6%	
Food Waste	43,291	17	0.0%	12,252	1	0.0%	69,724	5,685	8.2%	81,976	5,686	6.9%	125,267	5,703	4.6%	119,564	-	125,267	5,703	4.6%	
Shopping Bags	2,327	-	0.0%	514	-	0.0%	1,210	197	16.3%	1,724	197	11.4%	4,051	197	4.9%	3,854	-	4,051	197	4.9%	
Other Film Plastic	13,506	-	0.0%	2,851	-	0.0%	23,035	-	0.0%	25,886	-	0.0%	39,392	-	0.0%	39,392	-	39,392	-	0.0%	
Plastic Flower Pots	260	21	8.1%	28	1	3.6%	86	1	1.2%	114	2	1.8%	374	23	6.2%	351	-	374	23	6.2%	
Plastic Tubs and Lids	1,491	121	8.1%	418	4	1.0%	2,297	3	0.1%	2,715	7	0.3%	4,205	128	3.0%	4,077	-	4,205	128	3.0%	
Other Rigid Plastic	9,409	369	3.9%	3,001	61	2.0%	14,705	1,678	11.4%	17,706	1,739	9.8%	27,116	2,108	7.8%	25,008	-	27,116	2,108	7.8%	
Textiles & Leather (no Rugs)	9,958	113	1.1%	3,584	4	0.1%	16,375	5,858	35.8%	19,959	5,862	29.4%	29,917	5,975	20.0%	23,942	-	29,917	5,975	20.0%	
Carpets / Rugs	2,646	-	0.0%	2,390	-	0.0%	12,310	-	0.0%	14,701	-	0.0%	17,346	-	0.0%	17,346	-	17,346	-	0.0%	
Wood Waste (including Pallets)	4,778	4,501	94.2%	1,565	80	5.1%	36,942	21,145	57.2%	38,507	21,225	55.1%	43,285	25,726	59.4%	17,559	-	43,285	25,726	59.4%	
Whole Tires (as Rubber)	1,909	1,747	91.5%	561	434	77.5%	4,369	2,184	50.0%	4,930	2,618	53.1%	6,839	4,365	63.8%	2,473	-	6,839	4,365	63.8%	
Lubricants (e.g. Motor Oil)	3,445	3,377	98.1%	970	895	92.3%	2,436	2,153	88.4%	3,405	3,048	89.5%	6,850	6,425	93.8%	425	-	6,850	6,425	93.8%	
Electronics	6,382	1,587	24.9%	2,574	57	2.2%	5,483	759	13.9%	8,057	816	10.1%	14,439	2,403	16.6%	12,036	-	14,439	2,403	16.6%	
Batteries	211	201	95.3%	170	7	4.2%	1,451	1,400	96.5%	1,620	1,407	86.8%	1,831	1,608	87.8%	223	-	1,831	1,608	87.8%	
Latex Paint	241	47	19.6%	15	2	11.1%	192	1	0.7%	207	3	1.4%	448	50	11.2%	398	-	448	50	11.2%	
Tire Steel	486	247	50.9%	132	62	46.8%	855	309	36.1%	987	370	37.5%	1,472	617	41.9%	855	-	1,472	617	41.9%	
No Markets	3,966	-	0.0%	1,745	-	0.0%	8,763	-	0.0%	10,508	-	0.0%	14,474	-	0.0%	14,474	-	14,474	-	0.0%	
Other Wood	3,966	-	0.0%	1,745	-	0.0%	8,763	-	0.0%	10,508	-	0.0%	14,474	-	0.0%	14,474	-	14,474	-	0.0%	
Other Glass	231	-	0.0%	318	-	0.0%	543	-	0.0%	861	-	0.0%	1,092	-	0.0%	1,092	-	1,092	-	0.0%	
Disposable Diapers	11,640	-	0.0%	2,543	-	0.0%	2,843	-	0.0%	5,386	-	0.0%	17,025	-	0.0%	17,025	-	17,025	-	0.0%	
Other Waste	52,032	-	0.0%	14,088	-	0.0%	82,327	-	0.0%	96,414	-	0.0%	148,447	-	0.0%	148,447	-	148,447	-	0.0%	
TOTAL	463,206	251,330	54.3%	76,377	10,762	14.1%	581,778	233,272	40.1%	658,156	244,034	37.1%	1,121,361	495,364	44.2%	625,997	177,457	1,121,361	560,681	60.0%	

Notes:
Banned ER15-04
These materials are required to be recycled under Executive Regulation 15-04, and are banned from disposal in waste from all sectors.

Increased Capture Needed as % of Banned Tons Disposed **36.8%**

Overall Capture Rate Necessary for Banned Materials **81.8%**
Current Capture Rate of Banned Materials **71.3%**

Potential and Encouraged
Markets vary for these materials. Although not subject to the disposal ban, recycling is encouraged for all materials for which there are available markets.
No Markets
No existing or anticipated markets for these materials.

* http://www.montgomerycountymd.gov/content/dep/solidwaste/reference/recycling_rate/RecyclingRateDisplayForWeb.pdf

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