

CHAPTER IV OF TEN YEAR SOLID WASTE MANAGEMENT PLAN
ASSESSMENT OF EXISTING SOLID WASTE MANAGEMENT SYSTEM

Baltimore County has developed a sound and flexible solid waste management system adequately handling all the material currently being generated. Looking to the future, there are two main challenges to face in terms of disposal capacity – the likelihood of more trash (residents have been generating an average of 1% more trash each year, per person, and the County’s population continues to increase, though at a slower rate; see Table III-1) **and a need to secure replacement outlet(s) for trash by 2011-2012.**

Baltimore County’s solid waste/recycling program has received numerous international, national, and statewide honors during the past decade. The Solid Waste Association of North America conferred its Bronze Award for Integrated Program Excellence on Baltimore County’s Bureau of Solid Waste Management in 2001. The National Recycling Coalition has recognized the Bureau *twice* in the past ten years, first with its Outstanding Market Development Award in 1999 and later with its Outstanding Community or Government Program Award in 2002. Furthermore, the Bureau has won top statewide honors *twice* in the past eight years. In 2001, the Maryland Recyclers Coalition bestowed its Outstanding Market Development Award on the Bureau. And as recently as June 2008, the Maryland Recyclers Coalition honored the Bureau with its Outstanding Government Leadership Award. While all of these awards and honors are cause for celebrating what Baltimore County has already accomplished, they are more important in confirming that there is a solid foundation and springboard for progress during the upcoming ten-year planning period.

As would be expected in light of so many solid waste/recycling program accolades, there are many positive aspects to the County’s solid waste/recycling situation. In recent years, Baltimore County has consistently documented more than 100,000 tons of residential recycling and 300,000 tons of commercial recycling per year. **In 2007, the County achieved an overall (combined residential and commercial) 62% recycling rate, the #1 recycling rate in the State of Maryland.** See Table IV-1. The County’s 62% recycling rate was more than **three times** the State-mandated 20% recycling rate for counties with a population exceeding 150,000 residents. A county’s recycling rate is based on an annual recycling tonnage report by each county to MDE and annual reports to MDE from solid waste acceptance facilities.

The County has also focused substantial effort on waste prevention (reduce and reuse). **In 2007, The County earned a 4% waste prevention credit towards an overall waste diversion rate of 66%, the #1 waste diversion rate in the State of Maryland.** See Table IV-1. The waste prevention credit is calculated based on counties’

annual reports to MDE of waste prevention activities. A county's "waste diversion rate" is the sum of its recycling rate and any waste prevention credit the county has earned.

Baltimore County has engaged in many, successful waste prevention ventures over the years. Three major initiatives will be discussed here. (For a more thorough overview of the County's waste prevention activities, see Appendix A – Source Reduction Credit Report to MDE for 2006). One of the County's greatest waste prevention achievements has come in the area of grasscycling ("cutting grass high and letting it lie"). As discussed in Chapter III, in four different years (1998, 1999, 2000, and 2006) and three different parts of the County where grass generation is highest (Towson-Timonium [twice], Catonsville, and Perry Hall-Overlea), the Bureau of Solid Waste Management conducted targeted grasscycling public education campaigns featuring direct mail, newspaper advertising, letters to community groups, and other outreach techniques. In all four cases, there was a measurable, positive impact on grass collections in the targeted routes compared to collection routes not targeted by the campaigns. In the most recent targeted grasscycling public education campaign, the County focused on 23,000 homes in the Towson-Timonium area. Grass collections in these areas declined 15% between 2006 and 2007, compared to just 4% in control group areas.

The County also has a consistent track record in promoting home composting. Since 1997, the Bureau of Solid Waste Management has hosted 13 truckload compost bin sales, leading to the sale of nearly 12,000 bins.

The County's Reuse Directory, revised every two years since its inception in 1999, is one of the most popular publications associated with the County's waste prevention program. See Chapter III for a complete description of this publication.

The County's "buy recycled" policy has some positive aspects in terms of promoting recycling market development. For example, this policy requires that at least 40% of County-procured paper be made of recycled content and that contracts specify packaging in recycled or recyclable materials. However, at least three aspects of this policy are problematic. First, it is unclear what products fall within the "paper products" category. The County policy is not explicit on this point, yet paper products run the gamut from printing paper to janitorial supplies. Second, federal standards for different paper product categories sometimes involve a percentage range (e.g., paper towels – 40%-60% post-consumer material). This raises the question of how the County's requirement of purchases at least 10% in excess of the federal standard can/should be applied to such ranges. Last but not least, with the passage of time and generally higher federal "buy recycled" percentage standards, it is at least a question whether the County standard set back in 1991 deserves to be reconsidered. See Chapter III for further details.

Consistency of implementation and enforcement of the County's "buy recycled" policy (e.g., when a consultant does not submit double-sided copies of reports) is also an issue. Clarification and/or revision of the County's "buy recycled" policy could lay the

foundation for a renewed commitment to the policy. This, in turn, could make the policy a more effective tool for strengthening markets for recyclable materials, the original aim.

Just as there are some items of concern regarding the County’s “buy recycled” policy, there are some concerns regarding the broader solid waste/recycling “big picture.” The 1998-2006 trend lines (2003-2004 data discounted for analytical purposes due to the one-time impact of Tropical Storm Isabel) reveal some unpleasant realities. **During the 1998-2006 period population increased 7.2%, yet residential trash generation moved upwards 15.3% (about a 60,000 ton hike). Meanwhile, residential recycling tonnages (paper and bottles & cans) decreased by 14.9% and 11.2%, respectively, even though there were more people in the County available to recycle and an increased amount of material to recycle.** See Table IV-2. Focusing strictly on residential trash and recyclables (mixed paper and bottles & cans only; yard materials and other recyclables excluded), Table IV-2 also shows how recycling has declined from 11.9% in 1998 to 9.0% in 2006.

One factor contributing to the reductions in recycling tonnages was “lightweighting,” the practice of using less weighty packaging for products. It is unclear exactly how much of a difference “lightweighting” made, but the general shift from glass to plastic packaging is hard to miss at grocery stores.

More residential material will almost certainly be generated annually over the next ten years as the County’s population moves beyond its current level of about 800,000 residents. All of this makes planning for the next ten years, with vision further out, that much more important.

An assessment of the collection, processing, marketing, and disposal systems in Baltimore County follows.

In general, the residential collection system is functioning in a satisfactory manner, and is capable of doing so for the foreseeable future. Baltimore County’s 47 residential collectors continue to perform the day-to-day core services upon which residents rely. With collection decentralized among 47 collectors (many family-owned businesses of long standing), the County has successfully avoided dependency on any one collection company.

Costs associated with providing trash and recycling collection services (e.g., fuel, insurance, and equipment) have risen sharply in recent years. These cost pressures are placing greater than usual stress on the County’s collection system, and prompting a closer review of collector compensation. Three County drop-off centers are available for both recycling and disposal (ESL, BCRRF, and WAF), providing supplemental collection options available to all County residents.

In November/December 2006, the Northeast Maryland Waste Disposal Authority (NMWDA) sponsored a comprehensive solid waste/recycling survey, at Baltimore County’s request and in cooperation with other Authority jurisdictions. See Appendix B.

The telephone survey included 223 Baltimore County residents, keeping the margin of error down to +/- 6.6% at a 95% confidence level.

The following results from the 2006 Authority survey indicate a relatively high degree of overall resident satisfaction with the County's current solid waste/recycling program:

- 79% of County residents surveyed said they considered the County's trash/recycling collection service satisfactory (49% strongly agreed);
- 74% said it is convenient to recycle; and
- 66% said the information the County provides makes it easy to know what can be recycled.

The Authority survey was also designed to probe for residents' concerns about the collection program. When directly asked about the following topics, at least 20% of County residents expressed some degree of concern:

- 39% reported they had difficulty finding convenient storage for their recyclables;
- 30% said they were not sure recycling helped the environment;
- 29% felt recycling collection frequency was not satisfactory;
- 26% did not believe collected recyclables really got recycled; and
- 21% found the trash/recycling collection schedule difficult to follow (though 60% strongly disagreed with this).

In general, input received to date on the current residential collection system through the public participation process (Solid Waste Management Citizens Review Committee meetings [3]; public discussion meetings in Arbutus, Pikesville, Catonsville, and Rosedale; Planning Board meeting, public hearing) has been very consistent with that expressed by residents in the Authority survey. The most significant difference between feedback at meetings and feedback from the survey has been that concerns about the value and "reality" of recycling have been even less prominent among meeting participants than survey participants.

One area frequently mentioned as a concern during the public participation process was multi-family recycling. This must be acknowledged as a major gap in an otherwise generally sound residential solid waste/recycling system. In the early 1990s, the County adopted regulations in conjunction with the implementation of once a week recycling, once a week trash collection for all single-family homes and town homes. Those regulations, which remain on the books today, include the following statement: **"After this one and one program is initiated County-wide for single-family homes**

and town houses by July 1, 1995, it will be expanded to multi-family dwelling units.” [emphasis added] Now, approximately **thirteen years later and notwithstanding significant efforts to promote multi-family recycling, only a small minority of multi-family homes are part of the “one and one” recycling program.**

The County’s processing options are satisfactory at present, but major challenges lie ahead. At BCRRF in Cockeysville, the County has its own materials recovery facility (MRF) for sorting paper and bottles & cans. After sorting by detention center inmates under supervision by Maryland Environmental Service (MES) personnel at BCRRF, these recyclables are marketed by MES on the County’s behalf. **In recent years, revenues from the sale of recyclables have offset \$2 million per year or more (\$5 million in fiscal year 2008) in terms of overall Bureau of Solid Waste Management costs (about \$52 million in fiscal year 2008; thus, revenues offset nearly 10% of costs).** According to the 2006 Authority survey, most County residents have at least a general sense that recycling is cost-effective (72% disagreed with a statement to the contrary; 42% strongly disagreed). **This level of understanding is very important in that it means a strong majority of County residents already know that investments in recycling have paid off for them.**

Although recyclables have been generating revenue, the equipment at BCRRF has been aging. As needed, equipment has been replaced or modified to lengthen service life. Important decisions on equipment replacement and/or repair are being made and will continue to be made to ensure that recycling processing remains at least adequate.

The County is also analyzing the cost-effectiveness of the current curbside yard materials collection program, in order to assess where adding or deleting separate yard materials collections in the County might be appropriate.

As things stand now, Baltimore County’s only guaranteed outlet for trash after the year 2011 is the Eastern Sanitary Landfill in White Marsh. However, as demonstrated in this section, the County’s ownership and stewardship of this landfill assures the County a high degree of solid waste management independence, especially during the ten-year planning period. Without arranging for contract extensions and/or replacement capacity in the interim, the “worst case scenario” is that the County would lose 102,000 tons per year (Wheelabrator Baltimore) and up to 240,000 tons per year (Waste Management of Pennsylvania) in trash outlets by the year 2012. The County is currently considering future options for trash outlets through a Request for Proposal (RFP) process for disposal contracts. It is very likely that there will be substantial cost increases associated with entering into new contracts for waste to energy and out-of-County landfilling options. Meanwhile, the County’s best estimate is that by the year 2012 residential trash generation, primarily because of projected increases in per capita trash generation, will rise to 447,000 tons per year (more than 30,000 tons above the 2006 level). See Table III-1. To put in perspective the projection of 447,000 residential trash tons in 2012, that figure would rival the record set in 2004 (449,000 tons the year after Tropical Storm Isabel).

By 2018, residential trash generation is projected to reach 478,000 tons. That would be 70,000 more tons than in 2006 (with 70,000 tons being the equivalent of about 70% of the County's current "put or pay" commitment to Wheelabrator's waste to energy facility). Another way of thinking about the projected 70,000 trash ton increase from 2006 levels to 2018 is that it would be more than 1.7 times the amount of residential recycling in 2006 (40,000 tons of paper and bottles & cans).

The Eastern Sanitary Landfill, with an estimated remaining trash capacity of about 9.2 million cubic yards as of January 1, 2007, is the County's ultimate assurance that it can handle the County's next decade of trash. The County estimates that 276,000 cubic yards of landfill space were used at ESL in 2006, down from 321,000 cubic yards in 2005. Assuming this 2006 landfilling rate would continue at a steady clip (and in reality the volume landfilled at ESL fluctuates considerably from year to year, largely due to how much trash is transferred out-of-County), **the County estimated in its 2006 annual disposal facility report to MDE that ESL would not be full until the year 2039.** A year earlier, using the same estimating methodology but based on a year when more trash entered ESL, the County projected ESL would reach capacity by 2033.

Since the County owns the Eastern Sanitary Landfill, there is more than ample assurance that the County has adequate disposal capacity through 2018 and beyond. The following variables will help determine just how far beyond 2018 the County can rely on ESL for trash disposal:

- the degree to which changes in residential trash generation track those projected in Table III-1;
- potential changes to the County's waste prevention and recycling program, which might impact trash generation (e.g., a 20% increase in paper and bottles & cans recycling from the 2006 level of 40,000 tons [8,000 tons], projected over the 2007-2018 period, would mean a 96,000 ton decrease in what otherwise would have been handled as trash); and
- the possibility of a growing gap between trash generation and the availability of other outlets for trash if replacement capacity, currently ensured through a contract with Wheelabrator Baltimore and Waste Management, is not found by 2011.

Even under the hypothetical "worst-case scenario" alluded to above, in which the County does not arrange for contract extensions and/or any replacement capacity beyond 2011, ESL would still have sufficient capacity to handle the County's residential trash through the planning period and beyond. As Table IV-3 lays out in much greater detail, nearly 800,000 cubic yards of capacity would be projected to remain at ESL as of January 2019 under this "worst-case scenario." This would be enough to cover the County's trash disposal needs beyond the end of the planning period and into the following decade.

The bottom line is that ESL's longevity will be a function of choices the County and its citizens make, and circumstances that cannot be predicted (e.g., major natural and man-made disasters). Looking out further than required for Ten Year Solid Waste Management purposes, but with an eye to the County's long-range future, the County may wish to consider options for maintaining a strong measure of solid waste management independence. If the County were to opt in favor of siting, designing, and constructing a new facility providing capacity for residential trash (e.g., waste to energy facility or landfill) in the County, it would probably take about 10 to 15 years of lead time to accomplish.

The County's Master Plan 2010 does not directly address the siting or operation of solid waste management systems or facilities. However, if a new facility were deemed necessary, all applicable State and County regulations would, of course, need to be followed. The following items would need to be considered in establishing a new facility providing capacity for residential trash in the County (information resources in parentheses):

1. Topography (USGS Quadrangle Maps, <http://topomaps.usgs.gov/>)
2. Soil Types and Their Characteristics (Soil Conservation Service, <http://soils.usda.gov/survey/>)
3. Geologic Conditions (USGS Geologic Map Database, <http://ngmdb.usgs.gov/>)
4. Location (Baltimore County Zoning Requirements, Table II-1)
5. Use and Depth of Aquifers (MDE Water Programs, <http://www.mde.state.md.us/Programs/WaterPrograms/index.asp>)
6. Location of Wetlands (Baltimore County DEPRM Wetland Guidelines, <http://www.baltimorecountymd.gov/Agencies/environment/waterqua.html>)
7. Location of Surface Water Sources and Their Flood Plains and Watersheds (Baltimore County DEPRM Wetland Guidelines, <http://www.baltimorecountymd.gov/Agencies/environment/waterqua.html>)
8. Existing Water Quality Conditions (Baltimore County DEPRM Wetland Guidelines, <http://www.baltimorecountymd.gov/Agencies/environment/waterqua.html>)
9. Incompatible Land Use (Baltimore County Zoning Requirements, Table II-1)
10. Planned Long-Term Growth Patterns ("Baltimore County Master Plan 2010", http://www.baltimorecountymd.gov/Agencies/planning/master_planning/index.html)

11. Federal, State, and Local Laws and Areas of Critical State Concern (as designated by the Department of State Planning) (see Chapter I)

The County's three transfer stations (ESL in White Marsh, BCRRF in Cockeysville, and WAF in Halethorpe) greatly enhance the County's flexibility in reaching trash outlets. These three facilities give the County the capability to transfer trash to a variety of sites, including ones the County is not presently utilizing. However, the transfer stations at ESL and BCRRF, already handling large trash volume as of now, will need to be modified and/or expanded to accommodate projected increases in trash generation.

Opportunities for recycling or landfilling construction and demolition (C&D) material exist in the County (e.g., Days Cove Rubble Landfill and Honeygo Run Reclamation Center Rubble Landfill in northeastern Baltimore County) and outside of the County. On the order of 300,000 tons per year of C&D material, much of which is from in-County, is being accepted by Days Cove Rubble Landfill and Honeygo Run Reclamation Center Rubble Landfill, according to their 2006 reports to the County. However, both Days Cove and Honeygo Run estimate that they will run out of capacity within about a decade. Historically, the private sector has met needs as they have arisen for handling C&D materials. Nevertheless, with so much material per year at stake, the County needs to monitor the situation regarding C&D capacity.

The County's arrangements with Baltimore City to handle the County's wastewater at the City's Back River and Patapsco Wastewater Treatment Plants are satisfactory.

Eastern Sanitary Landfill currently meets the County's need for asbestos disposal capacity. The County "Regulation for Acceptance of Non-Hazardous 'Special' Solid Wastes at Eastern Sanitary Landfill" describes the procedure by which this material must be delivered to ESL. The regulation states, among other things, that the generator must receive approval from the County to deliver the asbestos and that a representative from both the generator and DEPRM must be present while the material is delivered. There is adequate capacity for disposal of asbestos at ESL beyond the ten-year period covered by this plan.

In the event of an unplanned spillage or leaking of hazardous waste within the County, the situation would be handled on the front line by the Fire Department's Hazardous Material Unit, which operates out of the Brooklandville Fire Station and has three satellite hazmat units spread throughout the County. Disposal of this material would be handled on a case-by-case basis with input from the Fire Department and DEPRM.

Overall, the situation regarding collection and processing/disposal of commercial recyclables/trash appears to be satisfactory for the next ten years. See, for example, Tables III-1 and IV-1, which document that commercial recycling tonnage has exceeded commercial trash tonnage from 2002 forward. Unlike the residential sector, where trash generation is projected to grow substantially (primarily due to per capita

generation increases), the commercial sector is not projected to produce much more trash as time goes on (about 373,000 tons in 2018, only slightly above the 372,000 level in 2005). See Table III-1. While nothing can be stated with certainty, existing and/or new collection, processing, and disposal firms and facilities are expected to be adequate to handle the level of materials anticipated. However, the County does not expect to continue transferring commercial trash out-of-County after January 2010. The impact in terms of solid waste management during the planning period cannot be known at this time.

Recycling materials that would otherwise become “waste” is each resident’s responsibility, for fiscal as well as environmental reasons. The cost of wasting recyclables, already high, will almost certainly increase sharply during the solid waste management plan period. It is also true that under our current system solid waste management costs are borne in the same proportion by recyclers and non-recyclers alike, even though non-recyclers are responsible for a disproportionate share of those costs. Stated simply, non-recyclers create most of the disposal costs all residents share, while *only* recyclers help offset these costs.

In summary, the County’s existing solid waste/recycling infrastructure (collection, processing, marketing, and disposal), allowing for some improvements as outlined above, appears to be adequate at least through 2018. The more the County is successful in persuading residents to prevent waste and recycle more of what is generated, the less stress the overall solid waste management system will experience. Furthermore, the degree to which the County is successful in securing replacement capacity (waste to energy and/or out-of-County landfilling) for the post-2010/2011 time frame will be important in determining how long ESL can accept trash beyond the end of the planning period.

Table IV-1

Maryland Recycling Act Recycling and Waste Diversion Rate Information

Year	Residential Recycling Tons	Commercial Recycling Tons	Total Recycling Tons	Recycling Rate	Waste Prevention Credit	Waste Diversion Rate
1998	102,864	205,542	308,406	32%	N/A	N/A
1999	80,461	319,249	399,710	38%	N/A	N/A
2000	109,127	306,056	415,182	40%	N/A	N/A
2001	110,708	333,147	443,855	40%	3%	43%
2002	106,751	352,533	459,284	42%	4%	46%
2003	119,421	306,156	425,577	40%	4%	44%
2004	122,118	334,147	456,265	41%	5%	46%
2005	113,020	568,018	681,038	46%	5%	51%
2006	120,607	603,846	724,453	45%	5%	50%
2007	113,610	1,099,720	1,213,330	62%	4%	66%

Note 1: Data in this table comes from Baltimore County's annual report to the Maryland Department of the Environment (MDE). Recycling tons include only those materials within the scope of the Maryland Recycling Act of 1988 (e.g., land clearing and demolition materials excluded).

Note 2: Waste prevention credits, up to a maximum of 5% depending on the extensiveness of a county's waste prevention activities, became available following enactment of Maryland Senate Joint Resolution 6 (2000). Baltimore County initiated this legislation and took a lead role in developing the checklist used in assessing what percentage credit a county is entitled to (see Appendix A).

Table IV-2

Residential Trash and Recycling Collection Data ("Curbside" and Drop-off Centers)

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Bottles & Cans Recycling Tons	8,654	8,235	8,327	8,222	8,411	8,312	8,216	7,875	7,687
Paper Recycling Tons	38,526	39,249	40,404	37,227	35,209	34,394	34,596	32,740	32,801
Total Recycling Tons	47,180	47,484	48,731	45,449	43,620	42,706	42,812	40,615	40,488
Trash Tons	347,668	361,720	373,815	383,962	393,523	430,061	449,004	415,337	408,127
Trash & Recycling Tons	394,848	409,204	422,546	429,411	437,143	472,767	491,816	455,952	448,615
%Recycling/Trash & Recycling	11.9%	11.6%	11.5%	10.6%	10.0%	9.0%	8.7%	8.9%	9.0%
<u>Change (1998 - 2006)</u>									
	<u>Total Tons</u>	<u>Percentage</u>							
Bottles & Cans Recycling Tons	-967	-11.2%							
Paper Recycling Tons	-5,725	-14.9%							
Trash Tons	60,459	+15.3%							
Population (see Table III-1)	57,322	+7.7%							

Note: 2003 and 2004 tonnages are not used for analytical purposes because of the one-time impact of Tropical Storm Isabel (Sept. 2003).

Table IV-3
"Worst Case Scenario" Projections Regarding ESL Capacity
as of January 2019

This table illustrates a scenario in which no replacement capacity is found after Waste Management of Pennsylvania and Wheelabrator Baltimore arrangements expire.

Basic Assumptions	
	Tons *
a. Projected Trash 2007-2018: ¹	5,381,802
b. Trash to Wheelabrator Baltimore Jan. 2007-Dec. 2011: ²	-510,000
c. Trash to WM of Pennsylvania Jan. 2007-Jan. 2010: ³	-648,107
d. Trash to ESL 2007-2018: ⁴	4,223,695

* All trash tons are residential trash.

¹ Source: Table III-1

² 102,000 tons/year multiplied by five years.

³ Based on the tons transferred through the County's agreement with WM of Pennsylvania in 2006 (210,197) multiplied by three years, plus the average tons/month (17,516) to account for January 2010.

⁴ Projected trash for 2007-2018 minus trash kept out of ESL through contracts ending January 2010/December 2011 as shown in b. and c.

"Worst Case Scenario" Projection of Remaining ESL Capacity as of January 2019		
	Tons *	Cubic Yds. **
e. Capacity Remaining at ESL as of January 2007: ⁵	4,616,240	9,232,480
d. Trash to ESL 2007-2018: ⁴	-4,223,695	-8,447,390
f. Capacity Remaining at ESL as of January 2019:	392,545	785,090

⁵ Source: 2006 Solid Waste Tonnage Report for ESL as submitted to MDE and dated February 27, 2007 (see p. 8, footnote aa).

** Conversion of tons to cubic yards based on conversion included in 2006 Solid Waste Tonnage Report for ESL as submitted to MDE and dated February 27, 2007.