

INTRODUCTION

and

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I. INTRODUCTION

Statement and Purpose

The purpose of this document is to outline Carroll County's plan for the management of wastes generated in the County now and in the future. The Solid Waste Management Plan will provide the County with a plan for safe and adequate management for the County's solid waste for the ten-year planning period. Carroll County first developed its Plan in 1979. It was updated in 1983, 1996, 1999, 2002 and 2006. This plan has been officially adopted by the Board of County Commissioners for Carroll County.

Current regulations (COMAR 26.03.03) governing the development of solid waste management plans, require the Plan to address waste management and recycling for a period of at least ten years. This Plan provides for the mandated ten years of management and addresses options for management well into the future. At a minimum, the Plan will be reviewed, and updated if necessary, at least every three years.

This Solid Waste Management Plan has been prepared in accordance with current State regulations (COMAR 26.03.03). The Plan is divided into five chapters. The first chapter presents the legal and institutional framework, including County goals and objectives. Chapter Two presents County physiographic, land use and demographic data. Chapter Three outlines the current solid waste management system operating in the County and presents data on solid waste trends and projections. Chapter Four details the evaluation of current and future alternative programs and technologies for solid waste management in the County. Chapter Five presents the implementation plan, schedule, and costs for implementing the Plan.

Plan Approval Process

Plan preparation was performed by the County staff responsible for solid waste management operations in Carroll County. Outside agencies, including the Health Department reviewed the Plan and submitted comments. Citizens were also part of the planning process, as were members of the Carroll County Environmental Advisory Council (EAC). All comments were factored into the Plan. A draft version of the Plan was also submitted to the Maryland Department of Environment (MDE) for a preliminary review. Comments were received and modifications made to the document.

Section 9-503 of the Environment Article Annotated Code of Maryland requires that each County maintain a solid waste management plan covering at least a ten year period. It also provides for a regular interval of amendment of the Plan and procedures for adoption. Section 9-503 also requires that the County conduct a public hearing prior to adoption and makes provisions for advertisement and circulation of the hearing.

Certification

This Plan is certified to be prepared in accordance with COMAR 26.03.03.

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As defined by the original Federal Solid Waste Disposal Act in 1965, solid waste includes the non-hazardous solid, liquid, or contained gaseous refuse generated by industrial, commercial and residential sources. Clearly this definition covers many types of waste, and all are addressed in this Plan. The principal focus of the Plan remains the management of waste generated by residential and commercial sources and actually brought to County facilities.

The disposal of solid waste is regulated under part 258 of Title 40 of the Federal Code of Regulations which sets federal criteria for municipal solid waste landfills, including location restrictions, facility design, and operating criteria, ground-water monitoring requirements, financial assurance and closure and post-closure care requirements.

In 1979, EPA promulgated criteria under Subtitle D of the Resource Conservation and Recovery Act (RCRA) that established minimum performance standards for both new and existing municipal solid waste landfills. States were to use these criteria to classify their disposal facilities as either open dumps or sanitary landfills. Landfills classified as open dumps were to be closed or modified to meet the Federal guidelines. Each state is required to develop a plan to implement the regulations. Under those plans, many local facilities will either close or be upgraded in order to achieve compliance. Carroll County's facilities, both open and closed, can achieve compliance.

Recycling is commonly considered to be the most environmentally sensitive method available to reduce solid waste disposal. The Maryland Recycling Act (Maryland Environmental Code §9-1703) requires counties with a population over 150,000 to reduce their waste 20% through recycling. Counties whose population is under 150,000 are required to recycle 15% of their generated waste. In the Fall of 1998, Carroll County exceeded the 150,000-population mark, changing the County's mandated recycling rate from 15% to 20%. The County's curbside recycling program was instituted in 1992 with a year-end result of 13% recycling rate. Even though recycling is faced with many challenges, especially fluctuating markets, it still continues to provide numerous benefits, including reducing landfilling of materials, conserving energy and natural resources, creating jobs and economic development.

Historically, management of solid waste within Carroll County often consisted of open dumps, as was the case in many rural areas. There is a map with legends that appears later in this document that reflects the proliferation of open dumps that were once the norm for the County. This bringing of waste to the dumps, either by individuals or by the organized collection efforts within municipalities was often accompanied by burning. As public concern about environmental impacts of this type of waste management began to grow, the laws cited above gradually came into force. Following the open dump period within the County, there began a more organized effort to bring landfilling under County control, and in the 60's and 70's, the County took over the operations of a number of these facilities; specifically and principally at Bark Hill, Hodges, John Owings and Kate Wagner. Activity at each of these facilities ceased about 15-20 years ago, and today, Bark Hill, Hodges and John Owings are covered with an impermeable cap. The County is in the process of determining the most appropriate action for the Kate Wagner Landfill. In 1980, Hoods Mill Landfill was constructed. This was the first facility in the County that was built as a sanitary landfill. Hoods Mill continued to operate until the Summer of 1994. It also received closure in

accordance with Subtitle D regulations. That action was completed in the Fall of 1998. The only landfill currently operating in the County is Northern Landfill, which is several miles to the east, southeast, of

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Westminster. That landfill was first brought into operation in the latter part of 1988, and it was constructed completely in accordance with Subtitle D regulations. At present, two of the four planned cells for Northern have been constructed with minimal filling activity occurring at this point in time, just within Cell 2. Projections for Cell 4 and the Cap Cell are detailed in Chapter Five in our future plans. Projections for Cell 4 and the Cap Cell are detailed in Chapter 5. Plans for construction of Cell 3 in 2006 are being finalized.

At present, most MSW generated in Carroll County is disposed of in out-of-county landfills. The difficulties associated with solid waste management, in general, have resulted in many communities transporting their wastes great distances for disposal, resulting in increased disposal costs. At present, this is not the case in Carroll County as adequate landfill space exists for many years as long as the majority of waste is not being landfilled. Siting new landfills is difficult due to increasing public opposition and because the environmental risks are, at best, not well defined. As siting becomes more difficult, and as the volume of waste increases, solid waste disposal, which was once considered solely a local problem, has become a combined local, State, regional, and national concern. Regardless of the fact that Carroll County currently has adequate landfill space, investigation is continuing into alternatives to local landfilling, including an increased emphasis on waste prevention, recycling, transfer, composting and waste-to-energy. Additional local landfill development must also be considered a contingency.

Alternatives to the reliance on landfills in Carroll County include a combination of waste minimization, education, transfer (short and long-term), composting, source separation, recycling, and waste-to-energy, all of which result in waste avoidance, residual reuse, or resource recovery but still also require minimal landfilling dependence.

Over the past 50 years, waste combustion became the first choice of many local officials nationwide. This process reduces waste volume by up to 90% and allows for continued operation of existing collection systems. Most newly constructed waste combustion plants, however, are no longer merely incinerators, but waste-to-energy facilities that convert useful thermal energy from burning solid wastes to steam and/or electricity and thus, recover valuable resources from the waste stream. The process also offsets the need to prematurely consume finite resources such as oil, gas and coal. Proposals for new combustion facilities, like those for landfills, often meet considerable public opposition. The public has concerns about effective control of air emissions from combustion plants, as well as for safe disposal of residual ash. Similarly, the public is also concerned over the potential for ground water contamination, as well as air pollution from landfills.

According to the Environmental Protection Agency (EPA), in 1999, U.S. residents, businesses and institutions produced more than 230 million tons of MSW, which is approximately 4.6 pounds of waste per person per day, up from 2.6 pounds per person per day in 1960. EPA's composition of waste materials generated is shown in Table I-1.

Packaging accounts for about one-third of all municipal waste, by weight. The largest percent of the packaging is paper, followed by glass, plastic, and metals. Because of the decreased use of steel and glass in the manufacturing of containers, packaging and containers have been growing at a slower rate than the rest of the solid waste stream when measured by weight, but not by volume. For example, a 1988 EPA Study concluded that while plastics accounted for only 8% of discarded materials by weight, they accounted for 20% by volume.

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Variations in the volume and composition of solid waste are affected by numerous factors including changes in population, development trends, land use, affluence, technology and patterns of social changes. In general, as population and wealth increases and as the ability to produce disposable packing and products improves, waste volumes increase.

During the ten-year planning period, landfills will continue to play an important role in solid waste disposal in Carroll County, even if greater use is to be made of recycling, composting, and combustion. When considering any management techniques; however, the cost must be weighed against the benefit. For example, of the approximate 120,000 tons of MSW generated in Carroll County each year, it is estimated that about 20,000 tons cannot and should not be, combusted, i.e., most construction debris, old appliances, ferrous and non-ferrous metals, glass, and other materials which will not burn. If all of the 100,000 tons remaining were combusted, over 25,000 tons would end up as ash or residue, which must be managed somehow, landfilling being an option.

Carroll County, like many other communities, has turned to recycling as a partial response to the need to maximize landfill capacity and minimize environmental impact. Theoretically, most consumer discards can be recycled, but in practice, recycling handles about the same percentage of the waste stream nationally as combustion. In 1992, about 13% of the municipal waste stream was recycled, up from 6.7% in 1990. Carroll County's original drop-off oriented program resulted in recycling of approximately 6% of the waste stream. Carroll County has also instituted a hauler mandated curbside program that has achieved the former 15% State recycling mandate and now exceeds the new 20% recycling goal. A recycling rate of 32% was achieved in 2004.

Composting, like other recycling techniques, is a proven technology and can be used to return organic materials to the soil, a form of recycling resources. Yard waste and sewage sludge composting is easily accomplished and can help to reduce landfill tonnages. Both yard waste and sewage sludge are readily converted into a usable soil additive eliminating the need to dispose of it in the landfill. Solid waste composting, however, does not have the history of success experienced with other waste streams. As technologies evolve, MSW composting may prove more economically viable and should remain a consideration. Success rates at operating plants have improved, but nuisance issues and market stability remain a concern.

All of the management options previously discussed assume waste generation. It is true that Carroll County must be realistic in its waste projections. It is also true that a strong emphasis on education to reduce the waste stream through consumer response and County purchasing policies, over the long term, is necessary. If we can reduce our reliance on technological treatment and disposal options by reducing the waste stream, then management will become less of a long-term concern.

In addition, as recycling is further utilized in Carroll County, its effect on the other aspects of solid waste management (i.e., landfills) will be regularly reassessed. During the ten-year planning period, the Solid Waste Management Plan for Carroll County will involve waste prevention/source reduction, recycling, yard trimmings and mulching, composting, landfill mining, leachate recirculation, C&D recycling, electronics recycling, transfer of the majority of MSW and minimal use of the Northern Landfill for disposal.

The Plan should be reviewed, and amended if necessary, as required or at a minimum, every three (3) years (Section 9-503 of the Environment Article, Annotated Code of Maryland), and an assessment of trends in

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volumes requiring ultimate disposal will be performed over that period and adjustments made. This planning

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effort will continue to assess the potential for use and reliance on waste management technologies other than landfilling, considering lead time necessary to design, license, and construct any new solid waste management facility.

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TABLES

TABLE I-1

**PROJECTIONS OF MATERIALS GENERATED*
IN THE MUNICIPAL WASTE STREAM: 1994, 2000, AND 2010
(In Thousands of Tons and Percent of Total Generation)**

MATERIALS	THOUSANDS OF TONS			PERCENT OF TOTAL			
	Year	1994	2000	2010	1994	2000	2010
Paper and Paperboard		81,300	91,260	108,860	38.9%	40.9%	41.5%
Glass		13,270	14,190	15,650	6.3%	6.4%	6.0%
Metals							
Ferrous		11,520	12,830	15,010	5.5%	5.8%	5.7%
Aluminum		3,060	3,510	4,300	1.5%	1.6%	1.6%
Other Non-ferrous		1,210	1,350	1,660	0.6%	0.6%	0.6%
Total Metals		15,790	17,690	20,970	7.6%	7.9%	8.0%
Plastics		19,840	23,290	28,940	9.5%	10.5%	11.0%
Rubber and Leather		6,370	7,280	8,780	3.0%	3.3%	3.4%
Textiles		6,560	7,490	9,220	3.1%	3.4%	3.5%
Wood		14,590	16,490	19,930	7.0%	7.4%	7.6%
Other		3,590	4,000	4,790	1.7%	1.8%	1.8%
Total Material in Products		161,310	181,690	217,140	77.2%	81.5%	82.9%
Other Wastes							
Food Wastes		14,070	14,900	16,300	6.7%	6.7%	6.2%
Yard Trimmings		30,600	23,000	25,000	14.6%	10.3%	9.5%
Misc. Inorganic Wastes		3,100	3,280	3,590	1.5%	1.5%	1.4%
Total Other Wastes		47,770	41,180	44,890	22.8%	18.5%	17.1%
Total MSW Generated Weight		209,080	222,870	262,030	100.0%	100.0%	100.0%

- Generation before materials recovery or combustion.
Source: Franklin Associates for EPA
Characterization of Municipal Solid Waste in the United States 1998 Update