

5.0 SOLID WASTE MANAGEMENT PLAN OF ACTION

An integrated Solid Waste Management Plan provides specific management tools to handle various components of the waste stream. Numerous programs, which comprise the integrated Solid Waste Management Plan, must be used in combination to complement each other. A solid waste management plan should not only include the programs, but also should address when and how these programs will be implemented, and at what cost.

Carroll County's Solid Waste Management Plan must respond to the requirements of the state-mandated recycling goals and all other federal, State and County regulations and laws. The goals and objectives illustrated in Chapter 1 address many of these requirements.

Based on the evaluations of existing and alternative technologies presented in Chapter 4, this chapter outlines a Plan of Action and Alternatives for the Carroll County Solid Waste Management Program through the Year 2026. A summary of the Plan recommendations to meet stated goals and objectives is presented below, followed by a description of individual recommended technologies and policies.

5.1 MEETING THE GOALS AND OBJECTIVES OF THE PLAN

5.1.1 PROTECTION OF HEALTH AND THE ENVIRONMENT

Most of the actions outlined in this Plan and the decisions behind them directly address a solid waste management program that has as a major factor - protection of the environment. Education, source reduction and recycling are intended specifically to reduce waste volumes and control waste composition. This has a direct effect on the volume of residual waste that requires management, minimizing the potential for environmental degradation. Facility siting criteria presented in Chapter 4 will be used when locating new solid waste facilities to ensure that, if needed, they are sited in areas of the county that will cause the least impact on health and the environment.

5.1.2 CONSERVATION OF NATURAL RESOURCES

A committed yard waste recycling program has been implemented to minimize the amount of land required for disposal facilities throughout the ten-year planning period. Currently, County residents can drop off acceptable yard and wood wastes at no charge; commercial businesses are charged a fee.

5.1.3 FINANCIAL SELF-SUFFICIENCY

It is intended that all County expenditures required to implement this Plan will be financed through tipping fees, or waste generation fees, and managed as an enterprise fund. At this time, the County General Fund is supplementing the Solid Waste Enterprise Fund. The Department of Public Works is currently evaluating the overall waste management in the County and will make recommendations on improvements, including funding options.

5.1.4 MULTI-JURISDICTIONAL SOLUTIONS

Regularly scheduled meetings of the SWAC and EAC will be available to discuss solid waste management issues. This is intended to ensure coordination between the public, the municipalities and the County Bureau of Solid Waste. Individual municipalities have unique concerns with regard to collection systems, recycling programs, and transportation

of waste to management facilities. The existing licensing system for waste collection will help individual municipalities tailor their collection systems and recycling programs to their individual needs.

Each municipality that desires to have a subsidiary plan incorporated by reference into the County Plan should initiate data-gathering and planning efforts required to produce a detailed plan. Based on the recommendation of the MDE, the organization of each subsidiary plan should parallel the organization of the County Plan as stipulated in COMAR 26.03.03. Municipalities are encouraged to develop their own plans. Consultation with surrounding counties, the Baltimore Metropolitan Council and the Northeast Maryland Waste Disposal Authority will also continue to evaluate potential regional facilities for materials recovery or composting, and the possibility of regional recyclables marketing efforts. Private MRF's located in neighboring counties could also potentially meet some of the Carroll County recycling program's requirements.

5.1.5 PUBLIC EDUCATION

Carroll County originally adopted a Recycling Plan in 1990, which became an integral part of the original Solid Waste Management Plan. The implemented public information program has expanded since then. Additional means of education and information dissemination have been developed, and will continue. The County was successful, through volunteers and County staff, in producing a video promoting waste prevention, reuse and recycling. The video is available at County libraries and is used for recycling presentations conducted by County staff. Educational presentations are provided to school and civic groups, as well as updates online through social media and local advertising. The County also provided a County-wide "mail out" of the County's Waste Management and Recycling Handbook. The Handbook incorporates the waste management hierarchy and all County waste management programs. It is continually updated. The Handbook and all aspects of the County's waste management program are available on the County's web site.

5.1.6 SOURCE REDUCTION

Source reduction will be encouraged through publicity campaigns designed to keep citizens aware of the options available. Source reduction is included in all waste management materials (brochures, booklets, video, and web page) and at all presentations.

5.1.7 COLLECTION

The licensing system in Carroll County will be continued in order to maintain control over hauler services, such as requirements for recyclable collection. This system provides for accounting of recyclables. Curbside recyclable collection is required to be made available by waste haulers.

Current discussion within the County SWAC involves renewed investigation of the option of establishing a contract or franchise form of collection rather than the current subscription system, also noted in the 2015 Solid Waste Study.

5.1.8 DISPOSAL FACILITIES

Carroll County will continue to provide disposal capacity for municipal wastes and rubble within the County throughout the ten-year planning period. There likely will be reliance for out-of-County transfer for disposal at a Subtitle D landfill. This reliance will help preserve in-County landfill capacity.

Regional solutions will continue to be considered if a firm commitment for capacity and tipping fees can be obtained for the ten-year planning period.

5.1.8.1 LANDFILL DISPOSAL OF MSW

Carroll County is at present operating one permitted sanitary landfill facility. Northern Landfill, located in the east central portion of the County, has the capacity to serve Carroll County for the ten years covered by this Plan and beyond. As was described in Chapter 3.0, Carroll County is also operating a successful recycling program that at present has reduced the County's waste stream by over 30%.

As this Plan has stated, even though the County has adequate landfill space to service the County through 2026, there is a need to continue to investigate alternatives to landfilling. Those alternatives include waste minimization education, recycling and source separation, composting, waste-to-energy, and transfer. In addition, the County will continue to investigate the viability of reclamation efforts such as mining and/or leachate recirculation in order to accelerate decomposition before mining. This latter approach is dependent on the State receiving full approval of solid waste management activities from the EPA.

The actions proposed in this document utilize the existing solid waste system currently in place in Carroll County with a few added components to satisfy the requirements of this Plan. Components of the Plan that affect County Landfills are:

1. Continued operation of Northern Landfill.
2. Continued use of Hoods Mill as a drop-off site.
3. Operation of a transfer station and MRF at Northern.
4. Continued investigation of waste processing alternatives such as waste-to-energy or any other new waste management technologies.
5. Investigate the potential of establishing sewage sludge composting.
6. Continue to encourage waste minimization.
7. Continue to encourage recycling efforts and encourage their expansion.
8. Continue to divert unnecessary wastes such as yard waste.
9. Continue efforts at regional cooperation.

Carroll County's plan is to continue to rely on landfill disposal at licensed existing facilities during the period of this Plan. Quantities of wastes that will require landfiling are estimated for each year during the period of the Plan (see Table 5-1). The waste stream is estimated based on population projections furnished by the Carroll County Department of Planning.

a. Hoods Mill Landfill

The east segment of Hoods Mill landfill was closed in 1994. Convenience drop-off bins are available for residential use on the first and third Saturdays of the month from 7:00 a.m. to 3:00 p.m. There is a potential future west cell at Hoods Mill. The County has no plans to develop that site as a landfill at this time. Currently, the west side, 30+ acres, is leased to a private mulch/compost operation. The lease is for ten years with two additional five year terms.

b. Northern Landfill

The Northern landfill will continue to be used to its permitted volume capacity. There are four stages to the solid waste portion of the Northern Landfill that includes cells SW-1, SW-2, SW-3 and SW-4. Each cell will be filled in numerical order. Cells will be filled from the protective fill over the liner to the limit shown on "Final Grading Plan". Upon completion of cells SW-1 through SW-4, a Capping Cell will also be filled over the original cells. The capacity of each cell was originally estimated as follows:

Permitted Landfill Capacity (Cubic Yards)

Cell SW-1	338,557 CY
Cell SW-2	668,205 CY
Cell SW-3	342,844 CY
Cell SW-4	732,414 CY (Not Yet Built)
Subtotal	2,082,020 CY
Capping Cell	1,422,167 CY (Not Yet Built)
Total	3,504,187 CY Permitted

Remaining Permitted Capacity (Tons)

Based on an aerial survey conducted January 5, 2016, approximately 2,291,198 CY of permitted capacity remains.

Landfill compaction rate is based on the amount of waste in tons being disposed per cubic yard of permitted volume. Based on recent average compaction rates of approximately 700 lbs./CY (0.35 tons/CY), Northern's remaining capacity converts to 801,919 tons. If the landfill is utilized at an annual average disposal of 15,000 tons/year, 53 years of capacity remains (approximate calendar year 2068).

At an anticipated improved compaction rate of 1,000 lbs./CY (0.5 tons/CY), the remaining capacity is 1,145,599 tons. If landfiling 15,000

tons/year, then 76 years of capacity remains (approximate calendar year 2091).

5.1.8.2 RUBBLE DISPOSAL

There were two stages to the rubble portion of the landfill, Cells R-1 and R-2. Each cell was filled in numerical order. Cell R-1 was capped in 1994. Cell R-2 opened in the fall of 1992 and was capped in 1998. Rubble cell capacity at Northern was as indicated:

Cell R-1	73,300 C.Y.
Cell R-2	20,050 C.Y.
Total	93,350 C.Y.

5.1.9 RUBBLE RECYCLING

At the present time, the only private rubble recycling facility is owned and operated by C. J. Miller, LLC.

5.1.10 RESIDENTIAL RECYCLING

The County's recycling effort includes licensing haulers and requiring them to offer a curbside recycling service to all of their customers. For residents who self-haul their own waste, the County offers two drop-off sites. The Recycling Center, located at the Northern Landfill, is available six days per week. Hoods Mill Landfill provides a drop-off site on Saturdays only for residents who live in the Southern end of the County. Effective December 1, 2005, the County started a permanent electronics recycling drop off at the Recycling Center located at the Northern Landfill. Acceptable electronics are accepted from residents only.

5.1.11 COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL RECYCLING

Offices, stores, institutions and industries typically generate 50% of the municipal solid waste stream in a community. In Carroll County, landfill records estimate approximately 50% of waste received is from non-residential sources. The reference to a commercial recycling program is inclusive of commercial, industrial and institutional sources.

An effective commercial recycling program is critical to meeting diversion rate objectives. Commercial wastes contain a high percentage of recyclable materials, including corrugated cardboard (30 to 50%), office paper (20 to 40%), glass, aluminum, scrap tires, ferrous metals and landscaping debris.

The potential for increasing commercial recycling in the County can be reached by expanding participation by businesses and increasing recovery of the two materials that provide 90% of traditional commercial waste: corrugated cardboard and office paper.

Carroll County's business community strongly supports channeling as many programs as possible through the private sector. That philosophy, combined with limited public funds, means Carroll County's emphasis will be on privately provided recycling collection and marketing. The County will serve mainly as a vehicle for education and coordination of the various business sectors to increase commercial recycling.

5.1.12 MATERIAL RECOVERY FACILITY (MRF) DEVELOPMENT

Carroll County has contracted for MRF services since 1992 with a private contractor. In 1998, the County constructed a Material Recovery Facility (MRF) adjacent to the transfer station at the Northern Landfill. The MRF operation began in March of 1999. The MRF accepts an average of 61 tons of recyclables per day (residential and commercial). Containers (glass, plastics and cans) are reloaded and sent to another facility for further processing. Old Corrugated Cardboard (OCC) and mixed paper are baled and sent to markets. The MRF is a County-owned facility; however, the services are contracted through a private enterprise.

5.1.13 YARD TRIMMINGS

In conjunction with the yard trim ban in May 1994, the County implemented a yard waste management program. An expanded publicity program explaining the merits of not bagging grass clippings and backyard composting is a part of the program. The establishment of local yard waste recycling sites throughout the County would minimize transportation costs as collection and transportation are the most costly element of a yard trim program.

Carroll County established a yard trim and mulch site at Northern Landfill. Yard trim is accepted free of charge from residents. Commercial businesses are charged a fee. Backyard composting and leaving grass clippings on the lawn will continue to be encouraged as the preferred method of managing yard trim. Carroll County will continue operating a mulch program, either through private partnership or by County staff.

5.1.14 WASTEWATER TREATMENT PLANT SLUDGE

At present, Carroll County is landfilling most of the sewage sludge brought to Northern Landfill. Many of the towns also land apply sewage sludge (see 4.5.2).

5.1.15 SCRAP TIRES

The County continues to accept automobile and light truck scrap tires from residents and businesses. Residents can deliver up to five scrap tires annually. Residents are charged per tire; bulk loads are charged a special rate. A contractor is currently hauling all the scrap tires off site for disposal.

5.1.16 HOUSEHOLD HAZARDOUS WASTES

During the years of 1989 through 1995, the County conducted annual Household Hazardous Waste Collection Days at the Vehicle Maintenance Center. In 1996 and 1997, a Household Hazardous Waste site was constructed and residents could take their household hazardous waste to the Northern Landfill one day per week. With the advent of a transfer station, the permanent program was discontinued. In 2005, the County held a one-day Household Hazardous Waste event. Due to the success of the event, the County has offered residents a twice-a-year opportunity for disposing of their household hazardous waste.

5.1.17 CONTROLLED HAZARDOUS SUBSTANCES

Industries and commercial establishments in the County that generate and ship controlled hazardous substances, including special medical wastes, are closely regulated by the Hazardous Waste Management Division of the Maryland Department of the Environment and are not under the jurisdiction of this Plan. Each shipment must be manifested, and volumes and types of materials reported to the MDE. No acceptance or treatment facilities exist, or are planned within the County. No additional actions for hazardous waste management are recommended under this Plan; however, the County reserves the right to address the management of controlled hazardous substances under a separate plan.

5.1.18 OTHER WASTES

Miscellaneous or special waste categories that must be managed include asbestos, dead animals, grease, septage, leachate, and agricultural wastes. Existing and proposed management practices for these wastes are as described in Chapter 3.

5.1.19 OPTIONS FOR FURTHER CONSIDERATION

As was discussed earlier in the Plan, options are being considered that will continue to divert solid waste in Carroll County away from the exclusive use of landfills. Options being considered at specific sites include:

1. At the Northern Landfill site,
 - a. Continued landfill operation at reduced rates of fill
 - b. Leachate recirculation
 - c. Landfill mining, and
 - d. C&D recycling
2. At the Hoods Mill landfill site,
 - a. Continue leasing the west segment and future cell as a composting facility to a private enterprise

Non-specific site possibilities include:

1. Relocating of transfer station to railhead
2. Regional drop-off and customer convenience centers
3. Siting a future landfill or waste conversion facility
4. County mandated collection
5. System benefit or other revenue measures to ensure the continuation of the enterprise aspect of operations.

5.2 CONCLUSION

The County's efforts at integrated waste management, including an aggressive Recycling Program, will continue to evolve and be reflected in future updates to this Plan. State requirements are for a review and re-adoption every three years. Today, Carroll has positioned itself well to take advantage of market conditions and fluctuations through construction of a transfer station and material recovery facility. These facilities will be the cornerstone of our plans for the foreseeable future.