



# SOLID WASTE WORKGROUP REPORT

A strategic, long-range plan to reduce the county's municipal waste stream

*November 2012*

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## **OVERVIEW AND BACKGROUND**

### ***“One Man’s Trash is Another’s Treasure”***

In March of 2012 Commissioner Doug Howard formed the Solid Waste Workgroup (the Workgroup) to develop a long-range plan to 2030 that includes solid waste management strategies capable of reducing the county’s municipal waste stream. Commissioner Howard charged the Workgroup with recommending strategies that are:

1. real technology
2. that will handle a significant portion of the solid waste stream and
3. can be provided at a cost which is in proportion to the benefits it provides to the county

The Workgroup met with various members of the solid waste community to identify current technologies and conducted an in-depth review of the costs and benefits of implementing these technologies alone, or in conjunction with other strategies for Carroll County.

The County has had a successful recycling program since the late 1980’s and since that time the program has been updated, improved and expanded. The idea of reducing waste at the front end and reusing materials and products has become more widely accepted over the years, both locally and corporately. As a result, the County has increased its rate of recycling.

The County also encourages backyard composting and makes composting bins available for purchase by residents.

In order to increase resident participation and make a more significant reduction, the Board of Commissioners has three options:

1. Encourage voluntary compliance with recycling guidelines
2. Offer economic incentives to residents through lowered costs waste options, or
3. Mandate compliance

The Solid Waste Group focused on the solutions that would encourage voluntary compliance and offer economic incentives. Incentives are possible because the county receives substantially more revenue from selling recyclable materials than from hauling waste out of Carroll. There is one recommendation with a mandatory component.

While the waste reduction efforts to date have resulted in improvements, a long-range plan with definitive actions will be necessary due to anticipated maximum usage of current landfill sites and increasing costs of long-distance hauling of the County’s waste.

It is clear to the Workgroup that the County must reframe the concept of waste away from something that must be buried, burned or hauled away to a resource that can be converted into a revenue stream. This goal can be accomplished by fostering efforts that reduce the amount of waste actually entering the stream, increasing all types of recycling and ultimately reducing costs to county residents and the negative impact on our environment.

## **EXECUTIVE SUMMARY**

The report contains recommendations for reducing the county's current waste stream, lowering the existing annual \$2.5 million subsidy to the Solid Waste Enterprise Fund and creating entrepreneurial opportunities.

All of the recommendations are existing technologies which have been successfully employed in other areas of the country for many years.

The Workgroup found that the county makes more money from single-stream recycling than it does by disposing waste via the transfer station. The county nets \$7 per ton for waste (\$62 tip fee minus \$55 hauling and disposal fee) and \$15 per ton for single-stream recyclable materials. Therefore the county loses revenue by not diverting more recyclable materials out of the waste stream. This loss is further exacerbated because the county pays a contractor to haul this discarded recyclable material to a landfill in Pennsylvania. It is safe to estimate that tens-of-thousands of tons of recyclable materials are not sorted out of Carroll's waste each year thereby causing the county to lose revenue on each lost ton. Additionally, our landfill space needs to be recognized as an asset and diverting material conserves the space and extends the life of the landfill and therefore its value. Logic, economics and environmental stewardship therefore dictate the recommendations to increase recycling and reduce waste.

In the **short-term** (12 to 24 months), the Workgroup recommends:

- the county purchase and distribute more recycle containers;
- place dumpsters at remote sites so residents can drop-off recyclable materials;
- develop educational materials for haulers, municipalities and residents;
- pursue a commercial composting operation at the Northern Landfill;
- encourage county haulers to use volume based billing (aka Pay-As-You-Throw);
- create a small scale construction & demolition recycling operation;
- comply with new state law that requires multi-family residential units to separate recycled materials from the trash;
- establish a material recovery facility (MRF)

For the **long-range** (3 to 10 years), the Workgroup recommends:

- the county establish a Resource Recovery Park at the Northern Landfill which incorporates many of the short-term recommendations;
- continue to investigate emerging technologies as they move from theory to reality

The Workgroup found viable options for these efforts in both the private and the public sector depending on the recommendation and the interest of the Board of County Commissioners.

# **RECOMMENDATIONS**

Understanding the general format of this report will be helpful to fully and easily read the recommendations.

The Solid Waste Workgroup has organized the alternatives in order of priority with the first alternative representing that which the Workgroup believes is the best to implement as soon as possible because it is the easiest and most cost effective followed by alternatives that should be pursued but that will take more time and/or money to implement.

The final section encompasses the Workgroup's long-range recommendations for the county which includes a cohesive system for waste reduction, reuse and recycling.

The overall plan envisions the county implementing each of the alternatives listed below over time and in incremental steps leading ultimately toward a comprehensive Resource Recovery Park.

## **SET A LONG-RANGE WASTE REDUCTION GOAL**

### **Recommendation:**

Set a waste-reduction goal similar to that set for agricultural preservation in Carroll County. The Workgroup recommends a goal of 80% county-wide recycling by Fiscal Year 2018 as calculated by the Maryland Department of the Environment.

The county should work toward waste independence or self-sufficiency which means it is able to deal appropriately with the waste it produces without relying or depending on other jurisdictions.

### **Current Status:**

There is currently no formal long-range waste reduction goal in Carroll. The county had a 46.17% recycling rate for 2010 as reported annually to the Maryland Department of the Environment.

### **Rationale for Recommendation:**

A clearly identifiable number will aid in education and marketing efforts and give residents an incentive to reduce the amount of waste entered into the waste stream.

Setting a waste-reduction goal will give residents an objective to reach for. Many county residents are familiar with the county's agricultural preservation goal and they should be similarly familiar with the county's waste reduction goal.

### **Financial considerations:**

There is no cost associated with this recommendation.

## **RECYCLING: EDUCATION & MARKETING**

### **Recommendation:**

The Workgroup recommends that the county implement an aggressive education effort to improve recycling rates across the county and to inform citizens of the new initiatives implemented in accordance with this plan.

Create a recycling task force to work with staff to assist in implementation of the recycling aspects of the plan. The duties would include assistance in outreach, education and brainstorming new ideas to encourage recycling.

The Workgroup also recommends changing the name of the landfill to Carroll Resource Recovery Park to reflect the county's long-range goal.

### **Current Status:**

The county staff currently employs many different strategies to educate on all aspects of recycling. Besides regular advertising and marketing efforts using direct mail, public service announcements and radio advertising, the recycling staff also has both a webpage and a Facebook page that are updated and maintained regularly. Staff also works closely with the public schools. These interactions include distributing program information, working with custodians to improve recycling efforts, outdoor school activities, Science, Technology, Engineering & Math (STEM) teacher workshops and developing service learning and SGA opportunities. Staff also works with other county and state agencies such as the Health Department, the public libraries and the water resource department. Community groups, such as scouting, 4H, citizen councils and senior groups are also regularly offered educational programs. Staff works with master gardeners regarding composting and rain barrel distribution and the Chamber of Commerce to inform businesses about the advantages of reducing and recycling. Finally, staff regularly attends numerous events representing the county, explaining the various programs and encouraging more recycling.

### **Rationale for Recommendation:**

Based on past increases in recycling as a result of educational efforts, it is clear that as people become more aware and more educated regarding recycling expectations the rate of recycling will increase. Education efforts will focus on simple things such as how to properly sort their waste or when and where to bring specific items for recycling, as well as more complex issues like composting.

Each aspect of this plan contains an educational component because educating citizens, businesses and haulers about the importance of reducing, reusing and recycling is the only way to implement this plan successfully.

### **Financial considerations:**

The county currently budgets for recycling marketing efforts – approximately \$60,000 in fiscal year 2012. The Workgroup recommends increasing this amount to allow additional marketing efforts including more targeted advertising.



The Workgroup also recommends augmenting education efforts by further reaching out to the business community to improve their participation in the various efforts to reduce the waste stream. This outreach can take many forms that can be determined by staff and the recycling task force.

## **RECYCLING: MARKETING BY HAULERS**

### **Recommendation:**

The Workgroup recommends that the county incentivize the haulers to increase recycling efforts by offsetting some of the costs imposed by the county by the requirement that haulers pick up recycling for free.

### **Current Status:**

Currently the county requires haulers to pick up single-stream recycling at no cost to the county or their customers.

### **Rationale for Recommendation:**

When the Workgroup met with the haulers, it was suggested that haulers would be interested in helping the county market recycling, but that under the current tipping fee structure it is not financially feasible. By compensating the haulers in some way either for the marketing efforts or for tipping recycling, recycling rates will increase. As recycling rates climb, the county saves landfill space here and in Pennsylvania, increases revenue from the recycling center with which the county has contracted and eliminates unnecessary waste entering the waste stream.

### **Financial considerations:**

The county currently budgets for recycling marketing efforts – approximately \$60,000 in fiscal year 2012. Some portion of this could be saved if the haulers were directly marketing recycling to their customers.

The county currently nets \$8<sup>1</sup> for each ton of single-stream diverted from the waste stream, some portion of this money could be allocated to the haulers to increase marketing, reduce some of the recycling burden from the haulers and increase the overall rate of recycling.

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<sup>1</sup> County nets \$8/ton for each ton diverted to recycling as follows:

	\$15/ton for recyclables under current contract
<u>Minus</u>	<u>\$ 7/ton in lost income because waste doesn't enter the landfill</u>
	\$ 8/ton net income

## **RECYCLING: STAFFING & TRAINING**

### **Recommendation:**

The Workgroup recommends that the county hire at least one more person to help with the educational efforts necessary to properly implement the recommendations in this plan.

### **Current Status:**

The county currently has one staff member who handles all alternative waste matters including recycling.

### **Rationale for Recommendation:**

The proposed plan is aggressive and will require significant effort on the part of the county to implement it in the most cost effective and efficient manner.

### **Financial considerations:**

The cost is dependent upon the salary and benefits during the work years and through the new employee's retirement.

Some funding for this position would come from the increased income the county will receive from the additional recycled materials diverted from the waste stream. For example every 1,000 tons of discarded waste diverted from the waste stream equates to \$8,000 in increased income to the county.<sup>2</sup>

The Workgroup believes that some of this work could be augmented by training appropriate volunteers.

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<sup>2</sup> County nets \$8/ton for each ton diverted to recycling as follows:

	\$15/ton for recyclables under current contract
Minus	<u>\$ 7/ton in lost income because waste doesn't enter the landfill</u>
	\$ 8/ton net income

## **RECYCLING:** **LARGE RECYCLING CARTS**

### **Recommendation:**

Purchase a variety of larger recycle carts for county-wide distribution including the municipalities.

Offering various sizes to the residents will allow residents to choose the size that accommodates their lifestyle the best. Taneytown recently distributed large recycle carts and some were returned because they were too large.

### **Current Status:**

Large recycling carts were distributed in 2010 to 10,618 households.

Taneytown just distributed large carts in order to encourage additional recycling. The workgroup has been told that Taneytown's rate of recycling has increased since the large carts were distributed.

### **Rationale for Recommendation:**

Recycling will be easier for residents if they have carts of adequate size to hold a significant volume of recycled materials. In a continued effort to increase recycling rates around the county, the Workgroup believes that providing additional large recycling carts to most of the county's residents will have an immediate positive impact by giving residents an easy means of collecting large amounts of recycled materials.

Haulers know that residents that use larger carts recycle more than residents who use smaller carts.

### **Financial Considerations:**

The Workgroup suggests the project be funded with the extra money in the Solid Waste Enterprise Fund and then replenished with money saved by burying some waste in Northern Landfill and not hauling it to Pennsylvania. The diversion of waste to the Northern Landfill would occur over a series of months so as to not burden either the landfill staff or negatively impact the company hauling waste to Pennsylvania.

Currently the county pays \$55.00 per ton to haul waste to Pennsylvania. If the county buried 10,000 tons of waste in Northern Landfill rather than hauling it to Pennsylvania, the county would save \$550,000. Burying 10,000 tons would only shorten the life of the landfill by approximately 3 months. But the expected increased recycling should lengthen the life on the landfill.

This savings could be used to pay for the large recycling carts provided to residents. The carts cost approximately \$62 each.

As an alternative to burying more waste in the landfill, funding could come from offering residents an alternative to the free landfill coupons. Each year residents receive two

landfill coupons worth \$15.50 each. The coupons could offer either the 500 pounds of waste disposal or both coupons could be used (\$31.00) toward the purchase of a recycling cart.

Ultimately the additional recycling that will occur will save the county money on hauling the waste to Pennsylvania and will actually increase the Solid Waste Fund through sales of this additional recycled material to Recycle America.

**RECYCLING:**  
**VOLUME BASED BILLING**  
(AKA Pay-As-You-Throw)

**Recommendation:**

Encourage Volume Based Billing (VBB) through a concerted educational program designed for haulers, municipalities and residents.

The municipalities actually have the best opportunity to implement VBB as each municipality contracts with haulers for service to their residents and a VBB system can save the municipality and its resident's money.

**Current Status:**

This billing method is available to any hauler, but only one hauler currently bills under this system for some of its customers.

**Rationale for Recommendation:**

Volume Based Billing is a market-based approach used by many communities to assign the cost of collecting and disposing solid waste more equitably. Under a VBB system, those who dispose of more solid waste pay more and those who dispose of less, pay less. VBB provides an economic incentive for residents to sort their waste by reducing waste fees for those residents who increase their recycling rates while potentially increasing the revenue for the haulers.

VBB is a voluntary, market-based billing system between waste haulers and their customers.

The Workgroup believes additional recycling could be diverted from the waste stream if VBB was implemented across the county.

According to the Environmental Protection Agency (EPA) website there are thousands of communities in 40 states using some type of VBB system.

The EPA site also says that "Communities often implement VBB to encourage greater waste reduction, recycling, and composting. According to recent research (summarized in the Fall 1997 PAYT Bulletin), households generated between 14 and 17 percent less waste, on average, in the first year of VBB than they had in the year prior to program implementation. The amount recycled also increased by an average of between 32 and 59 percent. The type of rate structure a community chooses will have a strong influence on the extent of the waste reduction incentive."

Illegal dumping is a valid concern where VBB systems were implemented, but according to EPA the amount of illegal dumping did not increase in most communities.

**Financial Considerations:**

The county will receive less revenue from haulers, but increased revenue from the material recovery facility for the value of the recycled materials taken there for sorting and selling.

The only cost incurred by the county would be the expense of additional education to the public, the municipalities and the haulers regarding VBB.

## **RECYCLING:** **REMOTE DROP-OFF SITES**

### **Recommendation:**

The group recommends that empty roll-off dumpsters be placed around the county in remote locations every other weekend to facilitate collection of recyclable materials for single-stream recycling.

The Workgroup further recommends the county try this concept as a pilot program in one location to determine its efficacy and to determine whether the system will be abused. If the pilot shows that inappropriate dumping is occurring then the Workgroup recommends a county employee monitor the waste disposal at each site during the open hours.

### **Current Status:**

The county currently operates a remote drop-off site at Hoods Mill Landfill.

### **Rationale for Recommendation:**

Having additional recycling drop-off sites and making single-stream recycling as easy as possible will encourage increased recycling.

Two sites could be available the first and third weekends and the other two sites could be open on the second and fourth weekends. The dumpsters should be placed on Friday afternoon and picked up on the following Monday and the contents dumped at the Northern Landfill. The County could use closed landfills for the Dumpsters or sites could be selected by residents working with their District Commissioner.

### **Financial considerations:**

The cost to deliver a dumpster to a remote location, pick-up and return the contents to the Northern Landfill is estimated at \$ 50 per one-hour round trip. No monitoring or staffing is required at the remote site beyond delivering and collecting the dumpsters before and after each scheduled collection date.

If the residents drop-off additional recyclable materials that are not being collected currently, the County will net \$8 per ton more by sending the materials to Recycle America than shipping them to Pennsylvania as waste.<sup>3</sup>

The County will need to keep records to determine whether the remote sites are cost effective.

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<sup>3</sup> County nets \$8/ton for each ton diverted to recycling as follows:

	\$15/ton for recyclables under current contract
Minus	<u>\$ 7/ton in lost income because waste doesn't enter the landfill</u>
	\$ 8/ton net income



## **RECYCLING: MULTI-FAMILY UNIT RECYCLING**

### **Recommendation:**

The Maryland General Assembly passed House Bill 1 in the 2012 legislative session which requires apartment buildings or condominiums with ten or more dwelling units to provide for collection and removal for recycling of recyclable materials for the residents. This law takes effect on October 1, 2012 and must be implemented before October 1, 2014.

### **Current Status:**

There is no current requirement for property owners and managers to provide recycling carts for multi-family units.

### **Rationale for Recommendation:**

Requiring owners of multi-family housing units to provide recycling opportunities to its residents will increase the county's recycling rates.

The Workgroup was going to suggest Carroll County pass an ordinance requiring multi-family unit recycling, but Public Works staff advised that the state had already imposed this requirement.

### **Financial considerations:**

The county nets \$8 per ton for every ton of recycling diverted from the landfill.

## **COMPOSTING**

### **Recommendation:**

Create either a public or private composting facility at Northern Landfill. Compostable materials would be collected from food-handling businesses/services around the county such as grocery stores, restaurants, institutions and schools. (The Workgroup does not recommend a curbside organics program at this time.)

### **Current Status:**

The county does not currently have a composting facility. Some homeowners compost their private organic materials, but these are small-scale, home-based projects that divert only a small amount of organic materials.

The county does convert approximately 12,000 tons of yard waste into mulch each year and provide the end-product free-of-charge to residents. The yard waste would be a necessary ingredient for the compost process.

### **Rationale for Recommendation:**

Composting removes organic waste from the waste stream which reduces methane gas emissions, creates a natural and useable end product and saves the county the cost of hauling organic waste to Pennsylvania.

Composting is a real technology. It can be implemented on a small scale and grow to large scale over time as demand and needs increase. Done on a modest scale with most of the county's commercial waste producers participating, the county can expect to divert up to 20% of compostable waste from the waste stream. (This estimate is based on information obtained by members of the Workgroup at a recent waste conference.)

### **Financial considerations:**

A composting facility can be operated by a private enterprise or by the county. A large scale operation that accepts organic waste from surrounding jurisdictions will be the most financially attractive to a private enterprise, but a facility can be built and operated on a smaller scale.

According to presentations made by an expert in the composting industry, the minimum amount of material needed for a vendor to operate profitably is approximately 40,000 tons per year. However this minimum volume will not provide a tip fee low enough to create an economic incentive for businesses to sort organics from the waste stream.

The following are two examples of estimated construction and operational costs for a composting facility based on its size:

#### **I. 40,000 Ton Facility**

Construction cost for a 40,000 ton facility will be approximate \$6 million. Total operation and maintenance cost will be \$1.6 million per year. The operation will employ about 10

people and could have a contractor tip fee of \$55 per ton. It will require 14 wind rows. Adding a \$7 host fee makes the cost equal to the existing \$62 tip fee at the Northern Landfill which will not provide an economic incentive to businesses but will still provide environmental benefits by reducing methane gas.

## II. 150,000 Ton Facility

Construction cost for a 150,000 ton facility would be about \$20 million. Total operation and maintenance cost will be about \$4.2 million per year. The operation will employ about 20 people and could have a contractor tip fee of \$45 per ton. Adding a \$7 host fee provides a total cost of \$52 per ton which is \$10 less than the County's existing tip fee. The lower fee should provide an economic incentive for businesses to sort organic materials out of their trash.<sup>4</sup>

The contractor can obtain private financing for the construction costs and the composting facility could be located at the Northern Landfill.

An alternative for the financing could include some County money. If the County participated in the financing, then the contractor could lower the tip fee. The contractor's tip fee is inversely proportional to the volume of compost processed and the amount of debt service. The 40k and 150k facilities represent the minimum and maximum but there are other possibilities such as 80,000 tons and 100,000 tons.

Land for a composting facility is available at Cell # 4 in the Northern Landfill.

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<sup>4</sup> Construction costs were provided by a variety of sources including industry experts presenting to the Workgroup.

## **CONSTRUCTION & DEMOLITION DEBRIS**

### **Recommendation:**

Create a small scale C&D recycling area in order to recover the recyclable or reusable materials.

Create a construction and demolition debris (C&D) recycling center.

### **Current Status:**

Construction and demolition debris is currently buried in Northern Landfill.

### **Rationale for Recommendation:**

C&D waste currently goes into the landfill, increasing the burden on landfill loading and operation. Also waste from sources such as solvents or chemically treated wood can result in soil and water pollution. Many of these materials can be recycled directly into the same product for re-use. Others can be reconstituted into other usable products. Many construction waste materials are still usable and can be donated to non-profit organizations which keep the material out of the landfill and support good causes.

### **Financial considerations:**

The Workgroup believes by recovering this material rather than burying it in Northern Landfill the county could divert approximately 5,000 tons of waste each year. This represents a 50% reduction in the amount currently buried in Northern Landfill each year.

This facility could be operated by the county or by a private contractor.

## **MATERIAL RECOVERY FACILITY**

### **Recommendation:**

Create either a public or private material recovery facility (MRF) at Northern Landfill. The Workgroup recommends creating a comprehensive MRF.

### **Current Status:**

The county currently contracts with Recycle America to receive our single-stream recycle waste. The county receives \$15 per ton for this waste. This contract expires June 2013.

Last year the county sent 16,000 tons of single-stream and cardboard recyclable waste to Recycle America and received \$303,248. The county received an additional \$288,000 from other, pre-sorted recyclables.

Recycle America provides \$25,000 annually to the county to further the county's recycling program.

### **Explanation:**

A materials recovery facility (MRF) is a specialized plant that receives, separates and prepares recyclable materials for marketing to end-user manufacturers. Generally, there are two different types: recycling and comprehensive.

A recycling MRF accepts recyclable materials that have already been separated from solid waste by either residential or commercial sources. The county currently has single-stream recycling which is contracted to Recycle America for further sorting and sale. Creating a recycling MRF in the county would allow Carroll to eliminate the need for Recycle America's services.

A comprehensive MRF accepts mixed waste and separates out the recyclable materials for further processing and sale. The recyclables are separated through a combination of manual and mechanical sorting techniques. The sorted recyclable materials may undergo further processing required to meet technical specifications established by end-markets while the balance of the mixed waste stream is sent to a disposal facility such as a landfill.

### **Rationale for Recommendation:**

A comprehensive MRF actually recovers a higher percentage of recyclable materials because 100% of the waste stream is subjected to the sorting process. However, the comprehensive MRF process is necessarily labor-intensive, and a facility that accepts mixed solid waste is usually more challenging and more expensive to site.

### **Financial considerations:**

The county receives \$15 per ton for single-stream materials from the current contract. The county also receives \$37.50 to \$70 per ton for cardboard; \$40 per ton for

electronics; \$640 per ton for batteries; and \$20 per ton for commercial yard waste from other vendors when these items are pre-sorted. The revenue received from recycled materials is significantly higher than the \$7 net revenue the county receives from a ton of waste.

For example:

Assuming the county waste stream contains about 20% of recyclable materials which residents are not sorting, the county is paying the transfer contractor \$55 per ton to bury valuable materials. At 20% of the waste stream, the county MRF could extract an estimated 18,000 tons (90,000 tons x 20%) from the waste stream. The county would save \$990,000 (18,000 x \$55) from the long-haul contract and generate \$270,000 (18,000 x \$15) in additional revenue by sending the materials to Recycle America.

The county could consider eliminating the current contract for single-stream recycling, but the Workgroup doesn't recommend it at this time. Such a step might be viable in the future, but would require the county to broker or sell the recyclable materials directly. Such a step requires certain skills, interests, education and training along with sufficient space to stockpile and store the recyclables that the county doesn't have at this time.

## **LONG-RANGE GOALS**

The Workgroup has developed some long-range goals for managing Carroll's solid waste issues. These recommendations are comprised of future technologies, implementation assistance and long-range planning for waste disposal fees.

### **RESOURCE RECOVERY PARK (RRP)**

#### **Recommendation:**

Build toward a RRP by incorporating the recommendations in this report. Each of these recommendations is a building block toward creating a comprehensive resource recovery park. These elements should be planned for in advance and added as service demands and opportunities arise.

The Workgroup recommends either a regional or local resource recovery park (RRP) as a long-range goal in planning for Carroll's future waste needs. As increased waste reduction is marketed to residents with a specific number goal in mind, the concept of a RRP can also be envisioned and promoted as a way of reaching the waste reduction goal.

The Workgroup also recommends changing the name of the landfill to Carroll Resource Recovery Park to reflect the county's long-range goal.

#### **Explanation:**

A complete resource recovery park incorporates all aspects of waste management including landfilling, material recovery areas, composting and recycling of all kinds. In its broadest sense, it is the colocation of reuse, recycling, compost processing, manufacturing, and retail businesses in a central facility. The public can bring all their wastes and recoverable materials to this facility at one time.

#### **Financial Considerations:**

Currently there is space available on cell #4 for some of the basic components of a RRP at the Northern Landfill, so no land would need to be purchased at this time. As additional RRP amenities are added the county will need to acquire or lease additional land to accommodate the additional services offered.

There is land around the Northern Landfill that could either be purchased or leased by the county for future expansion. The county could also contract with the property owner to create a RRP on behalf of the county. Such an operation could be operated either by the county or privately as determined by the Board of County Commissioners.

## **CONVERSION TECHNOLOGY**

### **Recommendation:**

Remain open to concept of small-scale burning or conversion technologies to deal with specific needs and/or to provide local energy solutions.

### **Explanation:**

The Workgroup believes that there are emerging technologies that should be considered as they become a reality in the near future. Over the next several years it appears fairly certain that a variety of small-scale burning technologies will be available that may be able to handle excess waste at minimum cost and without negative environmental side effects.

The Workgroup heard from one such organization that uses a closed system gasification process to generate power on a scale appropriate for serving municipalities, hospitals and manufacturing or other industrial companies.

### **Financial Considerations:**

The cost of these technologies is not fully known at this time, but reasonable estimates for a small gasification process that could handle 100-tons of waste each day appear to be in the \$9-12,000,000 range.<sup>5</sup>

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<sup>5</sup> Cost and capacity estimates were provided to the Workgroup by experts from the industry.



## **WASTE DISPOSAL FEE STRUCTURE (TIP FEES)**

**Recommendation:**

The Workgroup recommends continuing a multiple tiered fees structured to properly capture the service costs relative to the benefits and demands for the service.

**Current Status:**

Current Fees:

Waste Disposal	\$62.00
Recycle Disposal	\$ 0.00
Tire Disposal (on rim)	\$ 2.50
Tire Disposal (off rim)	\$ 1.50
Construction & Demolition	\$78.00

The recycled waste is collected and sent to a material recovery facility where the materials are sorted and sold. The county receives \$15.00 per ton for the recycled waste.

Currently private haulers have the option of delivering waste to the Northern Landfill and paying a disposal fee based on the type of material being brought to the landfill. These fees are the primary source of revenue for the Solid Waste Enterprise Fund. The Fund is also subsidized by revenue from the general fund.

**Financial Considerations:**

As the county moves toward a comprehensive Resource Recovery Park the disposal fees may need to change to properly account for the variety of waste disposal options and services being offered at the park.

## **KEEP THE CURRENT WORKGROUP INTACT**

### **Recommendation:**

The Workgroup recommends that it remain intact in order to continue to study the various alternatives and to help support the county in implementing the plan as adopted by the Commissioners.

The Workgroup recommends the following implementation sequence:

### **Potential Implementation Sequence**

#### **To be determined and authorized by the Board of County Commissioners**

All the recommendations in the report are focused on reducing the solid waste stream by extracting resources which can be reused.

- 1) Purchase and distribute additional recycle carts.
- 2) Place dumpsters at remote sites so residents can drop-off single-stream recyclable materials.
- 3) Develop and distribute educational materials for the citizens to increase citizens' understanding of the various county solid waste goals and initiatives. These goals should be as clear and widely understood as the Agricultural Preservation Program.
- 4) Survey surrounding jurisdictions to gauge interest in providing organic materials to Carroll County for composting.
- 5) Develop a seminar for county haulers and municipal government representatives to explain volume-based-billing and composting. Successful implementation of both recommendations depends on cooperation and assistance by the haulers. Discuss economic incentives at the seminar and reach consensus with the haulers on financial incentives needed for them to pick-up organic materials separately and implement volume-based-billing. The county could provide economic incentives to haulers to change their operations to successfully implement composting and volume based billing.
- 6) Create a small scale construction and demolition recycling area at the Northern landfill.
- 7) Evaluate the success of the above recommendations and if necessary, the county should build a comprehensive MRF to extract the remaining resources from the waste.
- 8) The county should plan to establish a Resource Recovery Park at the Northern Landfill which incorporates composting and a comprehensive materials recovery facility (MRF).

## **Conclusion**

It is clear to the Solid Waste Workgroup that the county must reframe the concept of waste away from something that must be buried, burned or hauled away to a resource that can be converted into a revenue stream. This goal can be accomplished by fostering efforts that reduce the amount of waste actually entering the stream, increasing all types of recycling and ultimately reducing costs to county residents and the negative impact on our environment.

The Workgroup would like to thank Commissioner Howard and all the Commissioners for the opportunity to provide input on this important matter. We appreciate your attention to our recommendations and hope that together we can help the residents of Carroll County today and in the future understand that by reducing the waste entering into the waste stream we can not only save the county and the citizen's money, but make our corner of the world a little better place to live.

Respectfully submitted:

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