

Section 5

ALTERNATIVE SOLID WASTE DISPOSAL STRATEGIES

5.1 Introduction

The County is currently accepting disposal of solid waste at the Transfer Station located at the Northern Landfill from which it is transported by Waste Management Inc. (“WMI”) pursuant to an agreement dated March 4, 2004 between the County and WMI (the “WMI Agreement”). In 2004, the County used the Northern Landfill for the disposal of approximately 15,000 cubic yards of non-transferable waste such as construction and demolition debris, sewage sludge and asbestos. Based on the current rate of use, the Northern Landfill is projected to have approximately 50 years of useful remaining life. In an effort to extend the useful life of the Northern Landfill and to identify the most cost effective means of solid waste disposal, the County has considered several alternative means of solid waste disposal. The County’s “Ten Year Solid Waste Management Plan” dated August 2002 (the “SWMP”) identified several options the County was considering for future disposal including waste combustion, waste distillation, mixed composting, or landfill mining.

Building upon the information set forth in the SWMP, this section of the Report provides an overview of the current status of development and commercial application of different waste-to-energy technologies.

It also presents planning estimates of the capital costs, operating expenses and energy generation potential of constructing two different sized waste-to-energy facilities.

This section of the Report also includes a discussion of the County continuing with long-haul transfer of solid waste to disposal sites located outside the County.

Finally, a discussion is presented regarding planning estimates of the capital costs and operating expenses of a solid waste composting facility.

As part of the preparation of this Report, we reviewed historical waste generation numbers included in annual MRA reports as well as the County’s most recent Solid Waste Management Plan (“SWMP”). The information in the MRA reports indicates that not all of the solid waste being generated in the County is currently being delivered to the System. Certain municipalities in the County and certain private haulers have made separate arrangements for the disposal of the solid waste they are either having collected on their behalf or are collecting. For the purpose of this analysis, we have assumed that the County will select a disposal option that is capable of handling all of the waste generated in the County. Therefore, the options discussed herein assume the receipt of a greater quantity of waste than is currently being received at the System. Further, in accordance with the assumptions in the SWMP, we

have assumed the quantity of solid waste will increase at a rate of two percent per year.

5.2 Long-Haul, Out-of-County Disposal

One long-term option available to the County is a continuation of the current system of executing longer-term contracts with private solid waste management companies for the transfer, transportation and disposal of County waste at disposal facilities located outside the County. At the present time, the County has a contract with WMI which provides for the transportation and disposal of up to 95,000 TPY of solid waste at landfills owned and operated by WMI. Reportedly WMI is currently using landfills located in Virginia which we have identified as offering the lowest tipping fees among the neighboring States of Virginia and Pennsylvania. The current WMI Agreement is scheduled to terminate on November 30, 2005, but there is provision that the WMI Agreement may be renewed for up to two additional five year terms. The County is currently paying WMI \$47.99 per ton of waste delivered to the County Transfer Station for transport to the WMI-owned landfills.

As discussed in Section 3 of the Report, there is very limited disposal capacity available in Maryland. Therefore, we reviewed the level of tipping fees being charged at privately-owned landfills located in the neighboring States of Virginia and Pennsylvania. The current range of tipping fees in Virginia, for significant quantities of solid waste under a longer-term contract, is reported to be as low as \$20 per ton in the southern and western portions of the state and approximately \$30 to \$35 per ton in the northeastern part of the state. Due to the distances involved, we estimate that the transportation costs to the Virginia landfills could range from \$25 to \$40 per ton, depending upon the distance of a particular landfill from the County. This would result in a total cost ranging from approximately \$45 to \$75 per ton.

The reported gate rate at landfills located in Pennsylvania ranged from approximately \$50 to \$65 per ton and the contract rate ranged from approximately \$35 to \$50 per ton. Our review indicated that the tipping fees in Pennsylvania generally declined as one moved from east to west in the state. The tipping fee in Pennsylvania has also been impacted by the fact that, in 2002, Pennsylvania Act 90 was passed which assessed a fee of \$4.00 per ton on municipal solid waste disposed of at Pennsylvania landfills. This fee is assessed equally on in-state and out-of-state tonnage, regardless of origin. In addition, the Governor of Pennsylvania had proposed to increase this fee to \$9.00 per ton starting in 2006. Further, the State of Pennsylvania has reduced the number of applications it has approved for expansion of existing landfills and the permitting of new landfills. These factors have combined to make Pennsylvania a more expensive option for out-of-state disposal than for landfills located in Virginia, Ohio, South Carolina, and Georgia. The current range of tipping fees in Pennsylvania, when combined with the cost to transport solid waste via transfer vehicle from the County to the Pennsylvania landfills, is likely to make the Pennsylvania landfills less viable options than landfills located in Virginia.

The Authority recently received proposals from private haulers for operation of the Frederick County transfer station and long-haul transfer and disposal of solid waste

generated in Frederick County. The disposal fees included in the proposals ranged from approximately \$54 to \$63 per ton for the disposal of approximately 125,000 TPY for a six year period. The actual tipping fee to be paid is dependent upon whether the loading of the waste is performed outside on the face of the landfill or inside the transfer station and whether such loading is performed by the Authority or WMI. The low end of this range is approximately 12 percent higher than the tipping fee currently being paid by the County.

Based on our review of: (1) the cost of transporting waste to Virginia and Pennsylvania; (2) the current level of tipping fees being charged at privately-owned landfills in those two states; (3) the contract the County recently executed with WMI; and (4) the proposals the Authority recently received from private haulers for the long-haul transfer of waste, we are of the opinion that, for comparative planning purposes, it is reasonable to assume that the County's cost of long-haul transfer, including provision for the operation of the Transfer Station, would be approximately \$59 per ton in 2005 and that such cost would escalate with inflation during the study period. This increase above the cost the County is currently paying pursuant to the WMI Agreement is reflective of the increase in diesel fuel in the last year. It should be noted that with the recent increase in the cost of oil to \$60 to \$65 per barrel, and some industry analysts predicting further increases, the cost of transporting solid waste could increase in the future at a rate which is greater than the rate of inflation. This could cause the long-haul transfer option of \$59 per ton to increase at a rate greater than inflation. In addition, it is not unreasonable to anticipate that as current landfills are closed, their replacements could be located at greater distances from the County, thereby further increasing the cost of transporting waste. For these reasons, we have included a sensitivity analysis which assumes the tipping fee increases at twice the assumed rate of inflation due to increases in the cost of diesel fuel and the potential need to employ more distant disposal sites.

5.3 Review of Waste-to-Energy Technologies

Alternative Technologies

As part of the evaluation of potential waste disposal techniques we have reviewed two studies that looked at alternative methods to convert MSW to useful products. The reports reviewed were: (1) Life Cycle and Market Impact Assessment of Waste Conversion Technologies (executive summary) prepared for the California Integrated Waste Management Board ("IWMB") by the Research Triangle Institute (Draft Copy dated 2004) (the "IWMB Report"); and (2) Investigation into Municipal solid Waste gasification prepared by URS Corporation as a subcontractor to Advanced Energy Strategies ("AES") for Alameda Power and Telecom ("APT") (2004) (the "APT Report").

The IWMB Report looked at three conversion technologies: waste-to-ethanol, waste gasification and plastics to oil. The APT Report only looked at various types of waste gasification to power. Both studies identified that the conversion technologies which were reviewed represent potential alternatives to conventional mass burn waste to

energy technologies. However, both studies indicated that most of the technologies that were reviewed are in the development stage and while preliminary results are promising, they needed to be scaled up and operated to demonstrate that they could successfully convert MSW to energy in an economic and environmentally acceptable manner. None of the technologies have yet been commercially demonstrated on solid waste in the United States.

The APT Report solicited responses from technology suppliers and vendors to address the disposal needs of Alameda, California. The APT Report received 13 responses from parties that included pyrolysis systems, gasification systems and plasma systems. Pyrolysis systems were defined as waste conversion to a fuel gas in the absence of oxygen. Gasification systems were defined as waste conversion to a fuel gas with the use of some oxygen, and Plasma systems were defined as using plasma torches to provide the energy to convert the waste to a fuel gas. The information supplied in the APT Report indicated that most of the systems required the preparation of a refuse derived fuel from the original MSW. The extent of processing (which was not well defined) depended on the conversion process. The APT Report reviewed the different technologies as to what was required for a complete project including MSW handling and preparation, conversion of the waste to a fuel gas and the conversion of that fuel gas to energy. The APT Report ranked the list of potential technologies and arrived at a short list of four technologies to obtain further information.

Although the technologies had some interesting attributes, none of the technologies had operated at a scale that would be required by Carroll County. Furthermore most of the technologies had only operated on a pilot scale or were an adaptation of technologies that had operating experience on a uniform biomass feedstock such as wood or rice hulls. It appeared that none of the technologies had any significant operating experience on a project which included taking unprocessed MSW and producing power as the end product. Scale up was identified as an issue with all of the technologies.

The potential attributes that were identified in the APT Report included potential higher conversion efficiencies than state of the art mass burn waste-to-energy plants, the potential to better control environmental emissions, and the potential (for plasma systems) to produce a vitrified ash which could have a beneficial use. At this stage of the APT Report, no cost information, either capital or operating, was provided. The highest ranked candidate was Brightstar Environmental (“Brightstar”). Brightstar was reported to have a 90 ton per day demonstration plant under construction in Wollongong Australia; upon successful completion of performance testing this plant was to be expanded to 300 TPD. The plant was intended to be a full project incorporating all of the aspects of a commercial plant. As a follow-up to determine the status of the Wollongong facility, we contacted Brightstar in Australia via e-mail. Bright Star informed us that the Wollongong facility is no longer in operation and has been dismantled. No reason was given. In addition, in a second correspondence Brightstar stated that they are no longer pursuing the technology.

None of the Plasma Torch gasification units made the short list in the APT Report. However, Hitachi did not respond to the inquiry by Alameda. From previous work we are aware that Hitachi had built a plasma gasification plant in Japan sized at

approximately 160 TPD of capacity. The plant used the Westinghouse plasma torch and was in start up in late 2002. We have not been able to obtain or located any information for that facility. We also attempted to contact Hitachi directly to determine the current status of the facility in Japan. After two attempts to reach different parts of the Hitachi organization, we have still not received a response.

A key conclusion from the APT Report is that “thermal gasification of MSW is not mature but is maturing”. In addition, the APT Report states that the capital costs are “quite high and exhibit a fairly wide range”. However, the APT Report also states that it believes that continued development of MSW gasification technologies is all but assured and that with experience, optimization and maturity that costs should be reduced.

The IWMB Report identified three technologies that were promising. Only two handled the total MSW stream: Brightstar and Masada. The Masada process differed from the other technologies discussed in the two reports in that it is a chemical and biological process that converts the cellulose fraction of the MSW stream to ethanol. The primary process does not use a high temperature process although the non-cellulose combustible residue from the process is converted to energy (in this case steam) in a close coupled gasification/combustion system. As with the other processes described in the two reports, the Masada process has only been operated on the pilot scale and had not operated in a fully integrated system.

Both the APT and IWMB Reports identified alternative conversion technologies that show potential in converting the MSW stream to energy products (power or ethanol). The information supplied also indicated that additional steps are required before these technologies are proven methods to dispose of MSW. The next steps would include fully integrated demonstration plants that are of a proper scale to provide sufficient operating information to confirm costs (both capital and operating), environmental emissions, and to identify any systems modifications that might be required.

Typically new technologies, as the ones identified by these two reports, would require at least two years of operating data in a fully integrated configuration (MSW processing, conversion technology, emissions control equipment, energy generation equipment) before it could be considered to be ready for non recourse financing. This time line could be shortened with financial backing from government agencies or equity that would also address Carroll County’s needs to dispose of its waste.

Based on our review of the two reports as well as our own experience in the industry, we are of the opinion that the only currently available waste-to energy technologies which are commercially demonstrated are mass-burn combustion and refuse derived fuel combustion.

5.4 Construction of a Waste-to-Energy Facility

Introduction

A disposal option which is less impacted, in a negative manner, by rising oil prices is waste-to-energy. In fact, dependent upon: (1) the terms of a power sales agreement between the County and the electric utility purchasing the electricity produced by a waste-to-energy facility; and (2) the type of fuel used by the that electric utility, increasing fuel costs may result in higher energy revenues for the owner of a waste-to-energy facility. The potential impact is often even greater for those waste-to-energy facilities that are selling energy in the form of steam rather than electricity, when the price of steam is pegged to the price of an alternative fuel.

Presented below is a discussion of the planning assumptions we have made in evaluating the potential costs associated with a waste-to-energy facility.

Size of Facility

Our experience of the last 25 years indicates that there are significant financial benefits associated with sizing a waste-to-energy facility at least at 600 TPD. One of these benefits involves the ability to generate steam and power more efficiently as a result of being able to operate at higher temperatures and pressures. This allows the owner to generate more power, and realize greater revenue, per ton of solid waste processed. An even greater financial benefit is the opportunity to experience significant capital and operating savings associated with economies of scale in both the construction and operation of larger facilities.

At the present time, approximately 400 TPD of solid waste are being delivered to the System and approximately 160 TPD of additional waste is generated in the County but disposed outside the System. It should be noted that some portion of the waste stream which is currently being landfilled would not be able to be processed at a waste-to-energy facility. We have decreased the amount of processible waste to take this factor into account. For the purpose of this analysis, we have evaluated options which would be capable of processing approximately 560 TPD in 2005.

Because the County currently generates an average of approximately 560 TPD, which is slightly less than the optimal size of 600 TPD. The County has two options regarding the size of the waste-to-energy facility:

1. Construct a facility sized at 600 TPD and “grow” into the facility over time while contracting out any excess capacity to private haulers and other communities until the County needs the full capacity of the facility for waste generated within the County. Assuming an increase in waste generation of two percent per year during the next six years, the 600 TPD facility will be filled primarily with County waste in 2012.
2. Combine efforts with one or more public sector entities and develop a larger facility which meets the waste disposal requirements of all entities. For the

waste-to-energy option, this would represent the most cost effective approach for all the public sector entities because of the economies of scale.

For the purpose of this Report, we have developed two analyses based on facilities sized at 600 TPD and 1,500 TPD in order to demonstrate the potential cost savings associated with the larger facility.

Planning Assumptions

It is important to note that the last “greenfield” waste-to-energy facility utilizing mass-burn technology was constructed in the United States from 1993 to 1995 in Montgomery County, Maryland. Since that date, most waste-to-energy vendors have exited the business (Westinghouse, Foster Wheeler, General Electric) and with Covanta’s recent acquisition of American Ref-Fuel, there are only three companies in the United States with experience in the construction and operation of large waste-to-energy facilities: Covanta, Montenay, and Wheelabrator. Due to the lack of development activity in the last ten to twelve years, engineering staffs have been reduced and institutional knowledge has been lost and there is no current information available on 600 and 1,500 TPD facilities.

Therefore, for the purpose of preparing this Report, we contacted vendors in the waste-to-energy industry to obtain updated estimates of capital and operating expenses of a new waste-to-energy facility. We believe that this information is the most reliable information available short of preparing an independent detailed cost estimate which was beyond the scope of this review.

We also have relied upon our previous experience in providing procurement services to public sector clients in their efforts to evaluate the waste-to-energy option.

Based on the foregoing, we have developed the following assumptions for the purpose of this Report:

- Energy production capability
 - Net generation of approximately 550 kWh per ton of waste processed, assuming solid waste with a higher heating value (“HHV”) of 5,200 Btu/hr.
- Waste Processing Capacity
 - 90 percent annual Plant Availability
 - 197,100 TPY at 600 TPD
 - 492,750 TPY at 1,500 TPD
- Capital Cost. The estimated capital cost includes provision for the construction of a complete facility up to the switchyard interconnection. Both the 600 and 1,500 TPD plants would consist of two boilers. The estimate was broken down for the following components:
 - Boiler – low NO_x unit, SNCR system, flue gas recirculation, carbon injection, urea injection
 - Air Pollution Control Equipment – scrubber baghouse

- Balance of Plant – ferrous recovery from ash, water cooling towers, water treatment system
- General Construction – three days waste storage in a pit
- “Soft” Costs – development, spare parts, start-up, bonds, permitting, financing, emissions offsets, profit, contingency
- \$210,000 per ton of installed capacity for 600 TPD (total cost of \$189,900,000)
- \$165,000 per ton of installed capacity for 1,500 TPD (total cost of \$247,500,000)
- Schedule
 - Three years to obtain permits, select a vendor and obtain financing
 - Three years to construct and acceptance test the facility
- Electricity Revenues
 - A combined capacity and energy payment of approximately \$0.056 per kWh in 2011, increasing approximately at the rate of inflation, based on prior studies prepared by Beck, plus a Renewable Energy Credit of \$0.02 per kWh as estimated by the Authority. We have assumed the RECS payment will not increase with inflation over the study period.
- O&M Expenses
 - The O&M expenses include provision for labor, parts and supplies, extraordinary renewals and replacements, general and administration, operator profit, electricity, fuel, and “normal” passthroughs such as chemicals, insurance and utilities. This does not include property taxes, host fees, or ash disposal. We have assumed the County will utilize ash as daily cover at the Northern Landfill, or will export ash for use as daily cover at another landfill.
 - \$55 per ton at 600 TPD (2005 dollars)
 - \$38 per ton at 1,500 TPD (2005 dollars)
- Ash Generation
 - Thirty percent (on the basis of weight) of the incoming municipal solid waste will be generated as residue ash in a sanitary landfill.
- Annual Debt Service Requirements
 - Three years of capitalized interest
 - Debt Service Reserve Fund equal to one year’s debt service payment
 - Interest earnings on reserve funds at 4 percent per year during the construction period
 - Financing Costs of 2 percent of the principal amount of the bond issue
 - Interest rate on the bonds of 5 percent

- Bonds with a 23-year term to cover three years of construction and 20 years of operation; principal repayment period of 20 years
- Level debt service payments for 20 years.

These assumptions were used in developing the Projected Operating Results discussed in Section 6 of this Report.

5.5 Waste Composting Facility

Introduction

The Authority provided us with a copy of a section of a draft report entitled “Solid Waste Management Alternatives Evaluation”. The section of that report which we were provided was entitled “Composting Technologies” (the “Composting Report”). A copy of the Composting Report is attached to the Report as Appendix A. The Composting Report included, but was not limited to, the following information.

- Estimated capital costs
- Estimated operating expenses
- Percent yield of compost from incoming waste
- Price of final product

It should be noted that Beck has not reviewed or verified any of the information included in the Composting Report and we can offer no opinion regarding the reasonableness or accuracy of any of the information or data included in the Composting Report. While a copy of the Composting Report is attached to the Report for the convenience of the County and the Authority, Beck assumes no responsibility or liability for any of the information, statements, or data included in the Composting Report.

At the Authority’s request we have utilized certain information set forth in the Composting Report for the purpose of developing an estimate of the projected costs associated with the construction and operation of a solid waste composting facility. The results of that financial analysis are set forth in Section 6 of this Report.

Organic Waste Composting

The Composting Report reviewed two alternative approaches to composting. The first alternative involved the composting of source separated organic waste. The Composting Report defined organic waste composting as follows:

“This alternative consists of processing and composting of source separated organic waste (yard trimmings, wood waste, food waste, etc.) to create a compost material for reuse. The composting facility would accept and process separately collected yard trimmings (leaves, grass, brush, etc.) by removing contaminants and shredding, composting, and screening the material. The facility could also accept separately collected organic waste (food waste, mixed paper, cardboard, wood

waste, etc.). Different types of products (mulch, fine compost, and coarse compost) can be produced depending on the size of the screens and removal of the material within the process. Sludge from WWTPs can be added to provide moisture, additional fine material, and a method of disposal for the sludge, but has the potential for increased odors.”

The Composting Report also identified that the type of organic waste suitable for processing by an organic waste processing facility would be equal to approximately 20 percent of the County’s waste stream. The Composting Report identified that this would equate to approximately 80 TPD or 25,000 TPY. The estimated capital cost of a facility of this size was reported to be approximately \$8,600,000 and the estimated operating and maintenance expenses were reported to be approximately \$671,000 per year. The Composting Report also estimated that the County could expect to produce approximately 40,000 cubic yards of compost for sale and realize operating revenues of approximately \$5 per cubic yard.

Because this particular alternative could process only a relatively small portion (20 percent) of the County’s municipal solid waste, we consider it a possible adjunct of one of the other options under consideration. Therefore, we have not developed a separate set of Projected Operating Results for this particular composting alternative.

MSW Composting

A second alternative involves the composting of mixed municipal solid waste. The Composting Report states that:

“MSW composting can be used as a method of volume reduction only or to produce a marketable product. While MSW composting for volume reduction is considered a proven technology, MSW composting to produce and market a product is considered an emerging technology because other facilities, both locally and nationally, have had difficulty in marketing large quantities of the finished compost.

“Most composting operations consist of four basic stages: front-end processing, decomposition, curing, and back-end processing. Additionally, there are storage and sales facilities that must be included if a marketing strategy is in place. Receiving, sorting, separation, size reduction, and moisture and nutrient addition may all be part of the front-end processing stage. The three basic techniques used for decomposition are static pile/windrow composting, forced aeration/covered systems, and enclosed/in-vessel composting.

“In static pile/windrow composting, prepared feedstock is placed in piles or elongated piles called “windrows.” The windrows are turned once or twice per week during the composting period, which lasts several weeks. Static piles are turned only occasionally or not at all. This process normally requires 90 days or more.

“In forced aeration composting, prepared feedstock is both aerated and turned. Aerated static pile systems are turned every 15-25 days. Pile configuration can vary. Some systems use tarps, sheets, or membranes to contain odor and moisture.

Others use negative aeration with exhaust treatment. This process requires usually 50 days or more.

“Enclosed/in-vessel composting involves a more intensive process in a building, tunnel, drum, silo, or box. These systems are sometimes mechanized to move the material automatically according to measurements or a schedule. This process requires 30 days or more.

“Once the feedstock has been converted to a humus-like material, back-end processing for marketing can take place. This may include fine screening, separating, grinding, blending with various additives, and granulating. With mixed solid waste composting, plastics, glass, and metal must be removed before the product is marketed.

“Composting of solid waste generally involves a highly mechanized process to remove noncompostable materials. Processing options generally include size reduction, metal and glass removal, and screening. Size reduction is accomplished with a shredder. Composting is accomplished by microbial organisms in the solid waste that are either aerobic (requiring oxygen) or facultative (growing in the presence or absence of oxygen). The material being processed should be thoroughly mixed and aerated to provide continuous aerobic conditions throughout the compost pile.”

The Composting Report estimates that as much as 70 percent of the MSW is organic material that could be composted. The losses include approximately 11 percent, in the form of solids and 19 percent in the form of moisture.

The Composting Report estimates that it would take approximately three to five years to site, design, permit, and construct a solid waste composting facility.

The Composting Report identifies that the capital cost for a hypothetical 750 TPD totally enclosed facility, similar to the one in Cobb County, Georgia, would be \$100 million to \$150 million; such a facility would feature 50 days of enclosed composting with odor control. The Composting Report identifies estimated annual O&M costs would be \$6.5 million, and annual revenues are estimated to be zero, assuming the product can be used as alternative daily cover. The Composting Report assumes no product is to be sold based on recent experience with glass and heavy metal contamination. No residual tipping fee is assumed if the product could serve as alternative daily cover. If a tipping fee were assessed, that would have to be added to the cost of solid waste composting.

Presented in Table 5-1 is a summary of the estimated costs included in the Composting Report.

Table 5-1
Estimated Costs of a Solid Waste Composting Facility ⁽¹⁾

Capital Cost, median estimate	\$125,000,000
Operations and Maintenance Cost	\$ 6,500,000
Revenue	None

(1) Source: The Composting Report

We have relied upon the planning estimates included in Table 5-1 to develop Projected Operating Results for this alternative. We have prorated the capital and operating costs shown in Table 5-1 for a 600 TPD solid waste composting facility to be constructed in the County. The construction of a 750 TPD solid waste composting facility would result in unused capacity for a number of years. We have utilized similar assumptions to those included in the waste-to-energy analysis as they relate to financing assumptions.

The Composting Report ends its discussion with the following:

“The composting of mixed solid waste may have limited applicability. There is a mixed (success and failure) experience with the technology, and it is assumed the end product would not be marketed. If an approach like the one used in the EU is attractive, then composting MSW to reduce its putrescibility and methane potential can reduce the disposal volume by 50 percent.

The Composting Report identifies the advantages and disadvantages of composting as follows:

Advantages	Disadvantages
Reduction of amount of waste requiring landfill disposal	Opposition to siting facility
Compatible with recovery of recyclable material	Product is not likely to be marketed.
Higher anticipated cost than for other disposal options	Large land use requirements for processing
	Possible objectionable odors “

5.6 Continued Landfilling

In order to assist the County in its review of the alternative solid waste disposal strategies, we have developed an estimate of the total cost the County would incur if it was to resume landfilling all County solid waste in 2011. The Projected Operating Results for the continued landfilling analysis are based on planning information we were provided by the County regarding the cost of land, the cost of landfill cell development, operating and maintenance expenses, compaction levels in the landfill, and the amount of air space potentially available in a one acre landfill cell. It is important to note that the estimate does not include provision for the costs the County may incur in its attempts to locate a new landfill site and go through the permitting process.