

*Financial Implications for Morgan County
of the
Proposed Banks Property Landfill*

Executive Summary

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The study's author is David Land, a sixteen year resident of Morgan County. Mr. Land owned and operated a solid waste business in Morgan County and had the first contract for hauling waste from the County's transfer station. Mr. Land has both a bachelor's and master's degree in economics. His professional experience includes over fifteen years as a consultant identifying, developing, and evaluating public and private sector strategies, projects, and policies. In addition to his work in solid waste and consulting, Mr. Land was CEO of one of the largest land-based agribusiness operations in the U.S. with over 150,000 acres in cattle, citrus, vegetables, nurseries, packing houses, and recreational leasing.

Summary of Key Findings
Net Financial Benefits(Costs) of Proposed Landfill*
(2010 dollars)

	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Local Businesses/Individuals:			
Average Annual	(3,800)	80,100	24,500
30 Year Cumulative	(114,000)	2,403,000	735,000
County Government (/yr)	263,400	815,200	428,100
County Schools (/yr)	(175,600)	(15,600)	(90,500)
City of Madison (/yr)	<u>(34,700)</u>	<u>(13,700)</u>	<u>(22,500)</u>
Total Local Governments:			
Average Annual	53,100	785,900	315,100
30 Year Cumulative	1,593,000	23,577,000	9,453,000
Net Benefits in Relation to:			
Total Local Govt. Budgets	0.075%	1.10%	0.45%
Total Ad Valorem Taxes	0.150%	2.20%	0.90%
Avg. Tax Benefit/Household	\$1.55/yr	\$23.19/yr	\$9.29/yr

Cumulative through Year 2045

Property Owner Effects:			
Property Devaluations	(88,304,000)	(33,928,000)	(57,362,000)
Reduced Property Taxes	11,364,000	4,470,000	7,329,000
Environmental Studies	<u>(6,795,000)</u>	<u>(2,265,000)</u>	<u>(4,530,000)</u>
Net Property Owner Loss	(83,735,000)	(31,723,000)	(54,563,000)
Avg. Loss/Property Owner	(22,692)	(8,597)	(14,787)
Net Benefit-Cost for Morgan County	(70,968,000)	(1,273,000)	(37,046,000)

* Numbers in parentheses are costs or losses

1.0 Introduction

The Banks family has submitted a rezoning application to Morgan County as the first step prior to obtaining variance and conditional use approvals and permits for a solid waste landfill with a 1,000 ton per day capacity over 30 years. The facility would be located on 518 acres 1.3 miles south of Madison's city limits in the northeast corner of Aqua and Indian Creek roads. Numerous factors are being considered by public officials at the county and regional levels as to the appropriateness of a landfill at this location. One such consideration is the potential positive and negative financial implications of the project. While both supporters and opponents of the landfill have made statements regarding the potential benefits and costs of such a facility, to date no in-depth financial analysis has been conducted. This study (the summary and two companion pieces [Part I. Benefits; Part II. Costs]) attempts to objectively estimate the financial implications to Morgan County of the proposed landfill.

For purposes of the study, three scenarios (Conservative, Optimistic, and Most Likely) were developed as to the effects of the proposed landfill for local governments, property owners, county taxpayers, and others with results presented in 2010 dollars. "Conservative" is where benefits are considered to be the least of the three scenarios and resulting costs the highest; "optimistic," where benefits are the highest and negative effects the lowest; and "most likely" the most reasonable or likely order of magnitude of what is expected to occur if the proposed landfill is built. Even with this estimated range, there are assumptions which would make the conservative scenario more negative and the optimistic more positive. Nonetheless, these three scenarios should provide decision-makers and the public a reasonable set of parameters for informed discussions related to possible financial benefits and costs associated with the proposed landfill.

When utilizing the results of this study, it may be of interest to "mix and match" the various results developed for the Conservative, Optimistic, and Most Likely scenarios. However, one should do so with caution. For example, there is a negative correlation between a factor such as host fees and ad valorem taxes paid by the landfill since the level of the host fee affects profitability of the landfill and assessed value for property tax purposes is a function of profitability. Likewise, if it is assumed that fewer or greater concessions will be secured from the landfill owner/operator than reflected in the study, this may affect competitiveness of the landfill which in turn could increase or decrease in a reverse manner the tonnage moving through the landfill which would then affect host fees and other potential benefits.

As referenced above, estimates are presented in 2010 dollars. While some of the financial benefits and costs evaluated will likely change over time at a rate somewhat similar to inflation, others will not. Thus, it is important to present all findings in constant (2010) dollars given that the life of the proposed landfill is 30 years with actual operations likely not beginning for 4-5 years.

While this study has undergone some degree of outside review, its purpose is informational, not to support one side or the other. Thus, if pertinent information or factual, conceptual, or mathematical errors are identified and conveyed to the author, the report can be modified as appropriate to make it more reflective of likely outcomes.

2.0 Potential Benefits

Although other possibilities may exist, seven factors were evaluated which might result in benefits to the county if the landfill were built. Of these, five were determined to be financially beneficial:

- Closure of the County transfer station
- Receipt of host fees by the County for each ton moving through the landfill
- Savings to the County if current transfer station waste can be disposed at the proposed landfill instead of at landfills outside the county
- Savings to local businesses and others who presently dispose of their garbage at the transfer station
- Ad valorem taxes generated by the landfill in excess of those now being derived from the proposed site in its current use

Two additional factors were not felt to provide financial benefits if the proposed landfill were built: (1) collection of garbage if this responsibility were assumed by the landfill operator, and (2) levying of inspection, monitoring, and enforcement fees associated with the landfill. With respect to the first of these, while some savings might be realized by the County if the landfill operator were to contract for this service, it was felt that similar savings could be realized through other private contractors regardless of whether the landfill was built. With respect to the latter, it was felt that the County would simply cover the cost of such activities in its fee structures rather than try to generate a profit.

3.0 Potential Costs

Again, while other possibilities may exist, nine factors were evaluated which might result in financial costs to the county if the proposed landfill were built. Of these, the following three were determined to have negative financial implications:

- Reduced valuations and ad valorem tax revenues on properties within five miles of the proposed landfill
- Loss of a potentially higher value use of the proposed landfill site with greater economic value to the county
- Increased costs associated with a greater frequency of environmental studies on nearby properties to the proposed landfill when such properties change hands or loans are applied for

Four of the nine factors were determined to have no appreciable financial effects. These were:

- Reduced economic development on adjacent or nearby properties to the proposed landfill site
- Loss of ad valorem tax revenues and other economic benefits after landfill closure vs. those which would be derived from alternative uses of the site

- Cost of additional government services, infrastructure, and infrastructure maintenance which would be required if the landfill were built
- Costs associated with government inspections, monitoring, and enforcement associated with landfill operations

Finally, there were two factors for which insufficient information was available to determine whether there would be a negative effect if the proposed landfill were built and, if there were, what this impact might be. These were:

- Damage to the local economy, especially tourism in Madison
- Cost to the county of environmental cleanup or water supply replacement if the technologies employed at the landfill malfunction and the landfill owner/operator is financially unable to cover this cost (directly or through insurance or bonding companies) or malfunction occurs after closure

With respect to these latter two factors, the County and Regional Commission may wish to insure that further study is undertaken to address these issues before a final rezone determination is made.

4.0 Summary of Benefits and Costs

4.1 Unrelated to Property Devaluation or Alternative Site Use

Table 1 summarizes the potential effects of those factors which might have beneficial or cost implications if the proposed landfill were built but which are not related to any possible diminution of property values or alternative uses for the landfill site. Analytic detail and assumptions are found in the two companion documents to this study, Part I. Benefits, and Part II, Costs. On an average annual basis over the life of the landfill, cumulative benefits ranged from a low of \$427,000 to a high of \$1,015,000. The most likely scenario would be benefits on the order of \$583,000 annually.

In a recent *Morgan County Citizen* interview, one of the applicants for the rezone (Mr. Jeff Banks) stated that the County would receive \$20-30 million in fees over the life of the project (\$667,000-1,000,000 annually) and that ad valorem taxes from the landfill would generate another \$80,000 each year. In both cases, these are not too dissimilar to what the author uncovered. However, with respect to the \$20-30 million in fees, this was in nominal (current) dollars. It did not take into consideration fixed host county fees not adjusted for inflation (which is common in other counties with private landfills). Thus, while the nominal value of such fees was in the range of what Mr. Banks indicated, in 2010 dollars, it was determined to be less than this. As for amount of ad valorem taxes to be generated, on a gross basis, they may be at least 20% higher than Mr. Banks estimated. On a net basis (after government costs associated with the landfill were eliminated), they were estimated to be similar to but somewhat less than Mr. Banks' estimate (\$72,600 vs. \$80,000).

Potential costs to the county not related to property devaluations were found for only one factor: the likely increased frequency of environmental assessments on properties within five miles of the landfill. On an average annual basis, these costs were estimated to range

from a low of \$75,500 to a high of \$226,500 with the most likely order of magnitude being \$151,000.

Table 1. *Proposed Banks Property Landfill*
Summary of Estimated Benefits and Costs in 2010 Dollars:
Excluding Property Devaluation Effects

<u>Category</u>	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
<i>Benefits</i>			
Transfer Station Closure	\$ 159,300	\$ 194,700	\$ 177,000
Host Fees to County	132,500	376,000	215,000
Disposal Savings: City/County	85,100	254,700	94,800
Others	(3,800)	80,100	24,500
Collection Savings (County)	0	0	0
Inspection/Enforcement Fees	0	0	0
Net Landfill Property Taxes	<u>53,800</u>	<u>109,500</u>	<u>72,600</u>
Total Benefits	\$ 426,900	\$ 1,015,000	\$ 583,900
<i>Costs</i>			
Environmental Studies	\$ 226,500	\$ 75,500	\$ 151,000
Reduced Nearby Development	0	0	0
Govt. Services/Infrastructure	0	0	0
Govt. Monitoring/Enforcement	0	0	0
Landfill Taxes after Closure	0	0	0
Economy/Tourism Effect	Unknown	Unknown	Unknown
Environmental Cleanup	<u>Unknown</u>	<u>Unknown</u>	<u>Unknown</u>
Total Costs	\$ 226,500	\$ 75,500	\$ 151,000
<i>Net Annual Benefits(Costs)</i>	\$ 200,400	\$ 939,500	\$ 432,900
<i>Net 30 Year Benefits(Costs)</i>	\$ 6,012,000	\$28,185,000	\$12,987,000

When the preceding benefits and costs are considered together, there is a net positive effect to the county ranging from a low of just over \$200,000 annually to a high of nearly \$940,000 with \$433,000 being the most likely order of magnitude. Over the 30 year life of the project, this benefit equates to a low of approximately \$6.0 million to a high of \$28.2 million with a most likely cumulative benefit of just under \$13.0 million to the county. As will be seen below, most of this benefit accrues to Morgan County government (and, thus, county taxpayers in general) although smaller amounts accrue to businesses and individuals now disposing their waste at the transfer station (see “Disposal Savings: Others” in Table 1 for benefits to business and waste generators).

4.2 Related to Property Devaluation

Virtually all studies reviewed indicate that properties nearer to larger landfills (greater than 500 tons per day) experience some loss in value. The most severe effects are within the first two miles of the landfill although one study indicates devaluations as far as 7 miles away. Property value diminution causes a decline in ad valorem tax revenues without any reduction in government costs associated with the activities on these properties. While lower ad valorem taxes helps mitigate the loss in value to the affected property owners, it reduces available revenues to support local government budgets.

The Morgan County Tax Assessor has indicated that there are 3,690 individual properties within 5 miles of the landfill (that distance for which it has been determined some value diminution will occur). Of these, 2,401 are residential; 670, agriculture/forestry; 365, commercial; and 44, industrial. Over 1,700 are within the city limits of Madison. The 2009 assessed value of the 3,690 properties is \$1.17 billion.

Table 2 summarizes the estimated devaluation of properties within 5 miles of the landfill. The Most Likely scenario assumes an average diminution in values of 12.1% in the first mile from the landfill; 5.5% in the second mile; and 2.5% outwards to 5 miles. Cumulative devaluation was projected to be as low as \$34 million to a high of over \$88 million with a more likely magnitude on the order of \$57 million. This represents an average decline across all properties in the affected areas of 3-8%.

**Table 2. *Proposed Banks Property Landfill*
Estimated Property Devaluation Effects in 2010 Dollars**

<u>Category</u>	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Ad Valorem Tax Losses:			
Annual	\$ 377,800	\$ 149,000	\$ 244,300
30 Years	\$ 11,334,000	\$ 4,470,000	\$ 7,329,000
Property Devaluations	<u>88,304,000</u>	<u>33,928,000</u>	<u>57,362,000</u>
Lost Taxes + Devaluation	\$ 99,638,000	\$ 38,398,000	\$ 64,691,000
Net Property Owner Loss	\$ 76,970,000	\$ 29,458,000	\$ 50,033,000

Due to the effects of exemptions on many properties (homestead, conservation use, forestry), ad valorem taxes receipts will not decline by a proportionate amount as property values. It is estimated that as a result of lower assessments due to a landfill at this location, on an average annual basis, ad valorem taxes would decline in the range of \$149,000 to \$378,000 annually with \$244,000 being the most likely order of magnitude. Cumulative over the 30 year life of the landfill, this would range from a low of \$4.5 million to a high of \$11.3 million with \$7.3 million being most likely. (Note: If the zoning for the landfill is approved in 2011 and the Tax Assessor begins adjusting values at that time, then these cumulative effects may be for a period longer than 30 years and, thus, be greater than indicated.)

The total devaluation effect can be considered as a combination of the value of lost ad valorem taxes plus the loss in property values. However, from the perspective of affected property owners, these lower ad valorem tax receipts should be deducted from (not added to) the loss in property values. When that is done (see last line in Table 2), the financial loss to these property owners is reduced approximately 13% to a low of \$29.5 million to a high of \$77.0 million with approximately \$50.0 million being the most likely order of magnitude.

There is an additional factor not reflected in Table 2 which will be financially detrimental to property owners within 5 miles of the proposed landfill. This is the increased frequency with which environmental studies will be undertaken by many of these property owners. When this cost is included, the cumulative negative financial effects on potentially affected property owners increases to a low of \$31.7 million to a high of \$83.8 million with the most likely being \$54.6 million.

4.3 Summary of Benefits and Costs

Table 3 combines the cumulative benefits and costs discussed in the preceding two sections (see Tables 1 and 2). When this is done, the most optimistic scenario for the financial implications of operating a landfill at the proposed Banks property site shows an overall negative effect for Morgan County of just over \$1 million. At the other end of the spectrum, the landfill could cause a cumulative financial loss in the county of as much as \$71 million over the next 35 years. The most likely order of magnitude is a financial loss of \$37 million. This is before consideration of any possible effects on the local economy or the costs of cleanup if a problem surfaces which cannot be or has not been financially addressed by the landfill owner/operator.

**Table 3. *Proposed Banks Property Landfill*
Estimated 30 Year Benefits-Costs to Morgan County in 2010 Dollars***

	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Landfill Benefits	\$ 6,012,000	\$ 28,185,000	\$ 12,987,000
Property Diminution Costs	<u>76,970,000</u>	<u>29,458,000</u>	<u>50,033,000</u>
Net Benefits (Costs)	\$(70,968,000)	\$(1,273,000)	\$(37,046,000)

* Excludes consideration of possible effects to the local economy/tourism and any possibility the county might have to bear environmental cleanup costs.

5.0 Financial Implications for Local Government Budgets and County Taxpayers

As indicated above, the financial benefits and costs to Morgan County do not affect local governments equally. Table 4 summarizes the benefits and costs which have direct budgetary implications for the three local governments. Morgan County government does receive significant net benefits from the proposed landfill. These are projected to

range from a low on average of \$263,000 per year to a high of \$815,000 with a most likely magnitude being \$428,000.

Table 4. *Proposed Banks Property Landfill*
Estimated Annual Government Budget Implications in 2010
Dollars

	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
<i>Benefits</i>			
County:			
Revenues from Landfill	\$ 132,500	\$ 376,000	\$ 215,000
Solid Waste Savings	244,400	449,400	271,800
Landfill Property Taxes	<u>21,100</u>	<u>42,900</u>	<u>28,400</u>
Total County	\$ 398,000	\$ 868,300	\$ 515,200
Schools:			
Landfill Property Taxes	\$ 32,700	\$ 66,600	\$ 44,200
City of Madison	<u>0</u>	<u>0</u>	<u>0</u>
Total Government Benefit	\$ 430,700	\$ 934,900	\$ 559,400
<i>Costs</i>			
County:			
Property Tax Losses	\$ 134,600	\$ 53,100	\$ 87,100
Schools:			
Property Tax Losses	\$ 208,300	\$ 82,200	\$ 134,700
City of Madison:			
Property Tax Losses	<u>\$ 34,700</u>	<u>\$ 13,700</u>	<u>\$ 22,500</u>
Total Government Costs	\$ 377,600	\$ 149,000	\$ 244,300
Net Government Benefits(Costs):			
County	\$ 263,400	\$ 815,200	\$ 428,100
Schools	\$ (175,600)	\$ (15,600)	\$ (90,500)
Madison	<u>\$ (34,700)</u>	<u>\$ (13,700)</u>	<u>\$ (22,500)</u>
Total Govt. Benefits	\$ 53,100	\$ 785,900	\$ 315,100

In his interview with the *Morgan County Citizen*, Mr. Banks suggested that the proposed landfill would allow Morgan County to dispose of its garbage at no cost to its taxpayers due to the financial benefits accruing to the County. Based on the analysis conducted, Mr. Banks may be correct. In the event, the optimistic scenario can be achieved, then the financial benefits to the County derived from the landfill would essentially equal the County's current operating losses associated with its solid waste and recycling activities. At the more likely level of benefits, County government could still reduce its solid waste operating losses by nearly half.

While this public benefit might accrue to County government, it does not take into consideration the potential cumulative effects on the revenues of other local governments. Morgan County Schools and the City of Madison are both projected to experience a financial loss because of the landfill. For Morgan County Schools, the net loss in ad valorem tax revenues will range from a low of \$16,000 annually to a high over nearly \$176,000 with the most likely being on the order of \$91,000. For the City of Madison, the net loss in ad valorem tax revenues is projected to range from a low of approximately \$14,000 to a high of nearly \$35,000 annually with the most likely amount being approximately \$23,000.

Across all three governments, there is still a net positive benefit annually ranging from a low of \$53,000 to a high of nearly \$786,000 with a most likely scenario of approximately \$315,000. Over the life of the landfill, this would reduce property taxes paid by the average household in Morgan County by \$1.55 annually at the low end and \$23.19 at the high end with the most likely reduction being \$9.29 per year. (Note: Over the life of the landfill, it is projected that the average number of households in Morgan County will be approximately 11,300 and the portion of property taxes paid by residential will continue to be on the order of 33%.) Over the life of the landfill, these benefits as a percent of combined local budgets (County, School, City) range from 0.075% to 1.1% with 0.45% being the most likely. These estimates can be roughly doubled to reflect these benefits as a percent of total ad valorem tax revenues generated by the three local governments.

6.0 Financial Implications of Alternative Uses of the Proposed Landfill Site

It has been suggested that there are higher value uses of the Banks property which will benefit the county more than a landfill on this site. While this may be true, provided the proposed use as a landfill is consistent with zoning and the Future Land Use Map, it is generally not the role of government to approve or deny a land use simply because there may be other uses which might generate more jobs and higher ad valorem taxes. Nonetheless, if government is being asked to make exceptions to current zoning and future land use designations and/or is being asked to approve variances and conditional uses, then taking into consideration the benefits of a non-conforming land use vs. a conforming one may be appropriate. However, it is not the purpose of this study to make a determination on this one way or the other. Rather, if local government determines that such a comparison is a valid consideration in its decision as to whether to rezone and approve variances, then it may be useful to have some sense of the benefits which might be associated with other possible uses for the proposed landfill site.

Elbert County has recently approved a waste-to-energy facility which will handle roughly 80% of the waste to be disposed daily at the proposed landfill on the Banks property. In addition to being an alternative waste disposal option, if undertaken in Morgan County, this project would generate direct financial benefits of approximately \$1.7 million annually, or nearly twice those estimated for the Optimistic scenario for the proposed landfill on the Banks property. This does not include any potential benefit to the local wood products industry from such a facility purchasing 800 tons per day of non-MSW fuel stocks required to operate the facility. (Note: It is not known whether such a facility has similar, fewer or greater property devaluation implications compared with the

proposed Morgan County landfill if placed on the Banks property. Additionally, it is not known whether its other characteristics are more or less favorable than those of an MSW landfill.)

Another possible alternative to the proposed landfill might be light industrial such as is being undertaken on nearby land which the Banks family sold to the Patillos in 2008. One downside to this particular alternative is that there is likely little demand at this time for additional light industrial in the Madison area. Nonetheless, after time adjusting for the current lack of additional demand, use of the Banks land for light industrial could generate ad valorem taxes (net of associated increased government costs) of \$10.1 million (with the project not begun until 2031 and 20 years for buildout) to \$30.8 million (with the project initiated as early as 2021 and buildout taking only 10 years). A more likely likely scenario (beginning in 2026 with a 15 year buildout) was projected to generate benefits of \$19.5 million. When comparing these benefits to the data in Table 1 for the proposed landfill, this alternative use of the proposed landfill site is estimated to create benefits more than 50% greater than the proposed landfill under the Most Likely scenario. (Note: It is not known whether there would be comparable, greater, or less property devaluation effects of the alternative use vs. the proposed landfill.)

7.0 Concluding Remarks

A landfill on the Banks property would seem to have significant positive budgetary implications for County government. With the revenues to be generated and the cost savings realized, the County's current solid waste financial losses could possibly be eliminated or, at a minimum, cut in half. Yet, for the other two local governments (Schools, City of Madison), the landfill would likely have negative financial effects. Nonetheless, even with these costs to the Schools and the City of Madison, the net effect to the average taxpayer in Morgan County would still be positive (although less than \$23 annually per household under the Optimistic scenario).

Yet, no matter how positive the positive effect for local government, this benefit will be offset by financial losses to Morgan County property owners which far exceed the benefits to government. The reason for this, however, is not the construction of a landfill per se but a landfill at this particular location just over a mile from Madison's city limits. At that location, the proposed landfill potentially affects 30% of all county homeowners and most of the county's businesses and industry. In most instances, new landfills seem to be sited at more remote or rural locations than the proposed landfill on the Banks property. When this occurs, there is far less diminution of property values (and in some cases apparently none). Given such a situation, from a financial perspective, the positive benefits associated with a landfill can potentially exceed the negative effects.

*Financial Implications for Morgan County
of the
Proposed Banks Property Landfill*

Part I. Benefits

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May 16, 2010**

Abstract

A regional landfill is proposed on 518 acres just south of the City of Madison in Morgan County, Georgia. The applicant seeking to rezone the property to this use has indicated the landfill would have a life of approximately 30 years with average daily volume of 1,000 tons. This paper estimates the direct financial benefits of such a landfill over the life of the project under three scenarios: conservative, optimistic, and most likely.

Financial benefits from such a landfill were determined to include: (1) ability to close the existing County transfer station, (2) host government fees for each ton moved through the landfill, (3) savings on the disposal of garbage currently handled by the County, (4) savings to commercial generators of waste in Morgan County now disposing of waste at the transfer station, and (5) increased ad valorem taxes generated by the landfill vs. those from the current uses of the landfill site (agriculture/forestry).

Average annual financial benefits over the 30 year life of the landfill in 2010 dollars were projected to range from a low of \$427,000 to a high of \$1,015,000 with the first of these occurring in 2016. The most likely order of magnitude was estimated at \$584,000 annually. The landfill would add between \$3.65 million and \$10.85 million to the tax base over the current assessed value of the proposed landfill site with \$6 million being the more likely order of magnitude increase. The ad valorem tax benefits of this increased tax base have been included in the benefits reflected at the beginning of the paragraph. Over the 30 year life of the project the cumulative benefits would range from \$16.4 to \$40.8 million with the most likely magnitude being \$23.5 million.

On an annual basis over the life of the project, the estimated average benefits represent 0.7% to 1.4% of combined County and School budgets with the most likely being 0.9%. The benefit in relation to property tax revenues would be approximately twice these percentages. For the average household in Morgan County, the average benefit would range from \$12 to \$27 per year with the most likely being in the neighborhood of \$16.

Author's Note

This paper is intended to be informational, not to support one position or other of the landfill issue. Thus, if pertinent information or factual, conceptual, or mathematical errors are identified and conveyed to the author, the report can be modified as appropriate to make it more accurate and reflective of likely financial effects.

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1.0 Introduction

The Banks family has submitted an application to Morgan County to rezone and then secure conditional use and variance approvals as the first steps in securing permits for a solid waste landfill on 518 acres 1.3 miles south of Madison's city limits in the northeast corner of Aqua and Indian Creek roads. Various statements have been made as to the potential financial benefits of the landfill were it to be built. To date no in-depth analysis has been conducted as to what these benefits might be. This study attempts to estimate objectively the potential benefits of this landfill.

While other possibilities may exist, those financial benefits which have been most frequently suggested include:

- Ability to close the County transfer station
- Fees received by local governments hosting landfills
- Possible County savings associated with transfer station waste if disposed at this landfill rather than landfills outside the county
- Possible savings to local businesses and others whose garbage is disposed at the current transfer station
- Possible savings in the collection of garbage in the county if this responsibility were assumed by the landfill company
- Levying of inspection, monitoring, and enforcement fees associated with the landfill
- Ad valorem taxes from a landfill in excess of those now being derived from the property in its current use

Each of these will be explored below with all estimated benefits in 2010 dollars.

2.0 Transfer Station

2.1 Background

When the County closed its landfill just over 15 years ago, it built a transfer station which the County still operates while contracting to private firms the hauling and disposal of MSW to out-of-county landfills. Additionally, the transfer station accepts tires, scrap metal, paint, pesticides, and inert material (disposed of on site while other materials are taken elsewhere for recycling or disposal). It has been suggested that with the construction of a landfill in Morgan County which accepts MSW, C&D, and recyclable materials, the transfer station can be closed with the County realizing a savings in the costs now being incurred to operate this facility. This is a reasonable assumption.

2.2 Operating Costs

Unfortunately the County does not maintain cost accounts for each of the components of its solid waste and recycling operations. Thus, there is no budget specifically for the transfer station. As a consequence, it was necessary to try to understand the functioning

of the transfer station, the solid waste department, and Roads & Bridges of which it is a part in order to attempt to construct an operating budget specifically for the transfer station. While somewhat imprecise, Table 1 is a best estimate of these costs using data found in the 2006-2010 YTD financial report prepared by the County for Solid Waste and Recycling with additions as appropriate.

**Table 1. Morgan County Transfer Station
Estimated Annual Operating Costs**

Personnel (including burden)	\$ 111,000
Repairs & Maintenance	15,300
Electricity	4,500
Gas & Diesel	3,700
Insurance (facilities, equipment)	3,000
Telephone/Computer	3,000
General Supplies & Materials	2,500
Advertising	1,000
Office Supplies	1,000
Tires	1,000
Miscellaneous	<u>2,500</u>
Total Cash	\$ 148,500
Depreciation: Loader	18,500
Facilities	<u>10,000</u>
Total Costs	\$ 177,000

2.3 Notes to Operating Costs

The following are notes related to the assumptions made for the above cost components.

Personnel

Essentially two people operate the transfer station: the scale house attendant and a loader. As the scale house is open more than a forty hour week, either overtime must be paid or someone else in Solid Waste must fill in. However, the loader probably spends less than half his time rearranging and loading garbage. While he also performs other tasks associated with the transfer station (e.g., mowing, monitoring non-MSW waste drop-off), he also is able to perform tasks for Solid Waste/Roads & Bridges not specifically related to the transfer station. Nonetheless, the County Manager feels that three employees could be eliminated if the transfer station were eliminated. According to the County Financial Officer, there have been nine County Solid Waste employees. Rather than using specific salaries and burden for the employees presently filling the two full-time transfer station positions, since these staff may change over time, 1/3 of total current personnel costs were assumed to be those associated with the transfer station.

Repairs and Maintenance

Approximately 30% of total Solid Waste repairs and maintenance costs were assigned to the transfer station based on the number of vehicles (1 loader vs. numerous vehicles used for picking up compactor containers, vehicles used to clean up around compactors, etc.), hours of their operation, and facilities and equipment considerations (scale house/transfer building vs. 13 compactor sites).

Insurance, Telephone, Computer, Office Supplies, Electricity, Miscellaneous

Approximately 50% of each of these items was assigned to the transfer station vs. the remainder of Solid Waste and Recycling activities.

Advertising

It has been assumed that all advertising of the Solid Waste department relates to informing the public about free disposal days at the transfer station or other such efforts. Thus, 100% of these costs have been attributed to the transfer station.

General Supplies & Materials

As this was felt to be somewhat similar to repairs, maintenance, and general operations, 25% of these costs were assigned to the transfer station.

Tires

In checking with an outside source, it was suggested that the front loader at the transfer station would require a new set of tires every five years at a cost of approximately \$5,000. This would be a prorated cost of \$1,000 per year.

Gas/Diesel

Given the relatively limited daily operating time of the front loader without the necessity of traveling long distances like the roll-off trucks and other vehicles moving around the county, only 10% of overall gas and diesel costs were assigned to the transfer station.

Depreciation

The County financial summary for Solid Waste and Recycling does not include depreciation (although some of its expense items could include capital expenditures). However, as this assessment needs to address the assumed 30 year life of the proposed landfill, it was felt depreciation should be included in the above schedule. With respect to the front loader, a purchase price was assumed as \$185,000 with a ten year life and no salvage value at the end of that period (which is probably overly conservative). For the facilities, a replacement cost of \$400,000 was assumed with a usable life of 40 years.

2.4 Variability

The above cost estimates are necessarily rough. Thus, they may be somewhat greater or smaller than indicated. As a consequence, it will be assumed that conservatively the total cost savings of closing the transfer station might be 10% less than that indicated, and optimistically they might be 10% greater. As these costs are expected to increase over time at a rate similar to inflation, it is not necessary to inflation-adjust them to 2010 dollars over the 30 year life of the proposed landfill.

3.0 Host Fees

3.1 Background

Apparently State law allows a host government to charge \$1.00 for each ton of garbage disposed at a private landfill. Additionally, the host government can (and sometimes does) negotiate additional per ton fees paid by the landfill operator to that government. The benefit of these fees to the host government and its citizens is a function of the fee negotiated and the tonnage of garbage moving through the landfill. These will both be explored below for the proposed landfill on the Banks property.

3.2 Fees

It generally cannot be known in advance the per ton fee which can be secured by the host government unless that entity applying for rezoning is legally able to make such a commitment at the time rezoning is being considered. That apparently is not the case with the Banks rezone request as the ultimate owner/operator of the proposed landfill is not yet known. Thus, one can only reasonably speculate on what these fees might be.

During early discussions between the Banks interests and the County, there apparently was some talk of host fees being as high as \$3.20 per ton. While this may have occurred elsewhere, it does not seem a reasonable assumption to make for this particular landfill. In their application, the Banks have only suggested a range of \$1.00-2.00 per ton. This seems consistent with what was found in five Georgia counties which were contacted and have or will have private landfills or waste-to-energy facilities (see below).

Table 2 reflects the fees received by the five counties (or to be received in the case of Elbert). The current average is \$1.37 per ton. The average after two anticipated adjustments are made (see table) will be approximately \$1.45 per ton. For purposes of the Most Likely fee schedule for the proposed Banks landfill, \$1.50 per ton will be used, which is higher than the preceding two averages and the mid-point for the fees reflected in the schedule provided by the applicant. A conservative assumption would be \$1.00 per ton, that rate presently being received by two of the five counties. An optimistic assumption would be \$2.00 per ton which may eventually be received by Barrow County and which is the high point indicated on the schedule provided by the applicant.

Table 2. Host County Landfill Fees

<u>County</u>	<u>Current Fee/Ton</u>	<u>Comments</u>
Banks	\$1.00	Unsuccessfully tried to negotiate a higher fee
Barrow	\$1.50	Will increase to \$2.00 once State approval received for expansion
Bibb	\$1.00	
Taylor	\$1.60+	Being negotiated down to \$1.50 as a result of declining volume in recent years
Elbert	\$1.75	Waste-to-energy facility starting in 2013

3.3 Volume/Weight

The Banks in their application stated a projected average of 1000 tons per day for the 30 year life of the proposed landfill. However, using the average weight to volume ratios of four landfills cited in the application, it is felt that the proposed landfill in Morgan County has the capacity to possibly accommodate as much or more than 1,420 tons per day for the life of the project. These will be assumed respectively as the conservative (1000) and optimistic (1420) daily tonnages for purposes of fee calculation.

Annual volumes are then a function of this daily volume times the number of days a landfill operates annually. In information presented by the applicant, it indicated 286 days as the number of days of operation for the landfills cited. This equates to an average of 5 ½ days per week even when taking into consideration holidays. This would seem a reasonable number of operating days for the proposed landfill on the Banks property. Thus, using the average daily volumes over the life of the project times 286 days per year, a conservative volume would be 286,000 tons annually and an optimistic volume approximately 406,000 tons. (Note: Some have suggested that the landfill might operate at daily levels far greater than this. While that may occur, from a practical standpoint, the landfill has a fixed volume it can accommodate given current technologies and plans. Thus, while it might fill the landfill quicker if it handles volumes greater than 1,420 per day, the total tonnage on which fees can be charged cannot reasonably exceed the total tonnage which would be generated by 1,420 tons per day for 286 days per year for 30 years.)

While the previous paragraphs address the average daily and annual tonnage over the entire life of the project, they do not address how this might vary over time. Volumes can increase or decrease as a result of changes in the economy; vary because of the opening or closing of another landfill; change because of increased or decreased recycling or the imposition of laws which can effect volume disposed; or due to new technologies which handle waste differently. However, none of these can reasonably be projected. Nonetheless, it would not be unreasonable to assume that in its first years (unless other nearby large landfills have recently closed), a new landfill will not be able

to secure what might be its average tonnage over the entire life of the project. Like any business it must go out and secure market share.

For purposes of this analysis, it will be assumed that under the Most Likely scenario the proposed landfill will begin its daily volume at around 800 tons per day for the first year. This will then increase by 2% per year for the next 30 years peaking at 1420 tons per day in the last year. Over the course of the 30 years, this would average approximately 1,080 tons per day, or almost 310,000 tons annually. This is 8% greater than the Banks referenced in their application.

3.4 Inflation

None of the host fees being levied by the four counties surveyed have a CPI adjuster. Essentially they remain constant over time as initially negotiated unless changes in landfill life or annual volume come into play. In no instance did there seem to be rate changes based on the effects of inflation. In a sense this is understandable. As will be seen below, landfill tipping fees do not tend to increase as fast as inflation. This has occurred for several reasons: (a) landfill competition has generally remained strong, and (b) a large portion of landfill costs are fixed when the land is initially permitted and purchased and the landfill built. Since landfill fees do not increase at the rate of inflation, landfill owners would be reluctant to include a host fee amount with a CPI adjuster.

However, from the County's perspective, fixed host fees are actually declining in their real value to the County as the CPI increases. County operating costs—for solid waste collection or anything else on which the County might choose to use its host fee revenues—will continue to rise over time somewhat in relation to the CPI. (For example, many multi-year solid waste contracts with private firms tend to have CPI and fuel adjusters.) As a consequence, when evaluating the benefit of host fees over the 30 year life of a project, inflation must be taken into consideration.

For the past 35 years, the average annual inflation rate has been 3.94%. (Note: Thirty-five years is being used as it is assumed that any landfill on the Banks property will not begin operations until 2016 due to the length of time it will take for rezoning, the conditional use and variance process, EPD/DCA permitting, any possible litigation, and the time required to build the landfill once [and if] all permits and approvals have been secured. [Apparently Oak Grove has been working on its expansion approval process for 7 years].) Thus, nominal values for host fees must be adjusted annually for inflation. A dollar received by the County in 2016, the first year of the project, will be far greater in value than a dollar received in the last year of the project.

3.5 Host Fee Summary

Table 3 reflects average daily and annual tonnage under the Most Likely scenario, the CPI deflator used, and the nominal (current) and constant (2010) values of host fee

Table 3. *Proposed Banks Property Landfill*
Projected Annual Tonnage and Related Fees: Most Likely*

<u>Year</u>	<u>Tonnage</u>		<u>Deflator</u>	<u>Revenues from Fees</u>	
	<u>Daily</u>	<u>Annual</u>		<u>Current</u>	<u>Constant**</u>
1	800	228,800	.818	\$343,200	\$280,700
5	866	247,700	.696	371,550	258,600
10	956	273,400	.570	410,100	233,800
15	1056	301,900	.466	452,850	211,000
20	1165	333,300	.381	499,950	190,500
25	1287	368,000	.312	552,000	172,200
30	1420	406,300	.255	609,450	155,400

*Based on host fees of \$1.50

**2010 dollars

Table 4. *Proposed Banks Property Landfill*
Projected Annual Tonnage and Related Fee Income

	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Fees/Ton	\$1.00	\$2.00	\$1.50
Tons/Day:			
Year 1	740	1,050	800
Year 30	1,315	1,865	1,420
Average	1,000	1,417	1,080
Tons/Year:			
Year 1	211,900	300,700	228,800
Year 30	376,200	533,900	406,300
Average	286,000	406,000	308,000
Revenues to County:			
Current \$	\$ 286,000	\$ 810,700	\$ 462,700
Constant \$	\$ 132,500	\$ 376,000	\$ 215,000

revenues. Table 4 compares Conservative, Optimistic, and Most Likely volume (first year, last year, average year) as well as current and nominal values of host fee revenues to the County. In 2010 dollars, the average annual benefit ranges from an annual low of \$132,500 to a high of \$376,000 with approximately \$215,000 being the Most Likely average over the life of the project.

4.0 Transfer Station Waste Volume

4.1 Background

There have been statements that if a landfill were placed on the Banks property, the County may be able to dispose of its waste at the new landfill for free. While that may be possible, in the Banks application, there is no mention of such a possibility. Rather the application suggests that the County might choose to dispose of waste locally and avoid the 80 mile roundtrip haul to Oak Grove in Barrow County or, if it wished to continue operating the transfer station, the County might be able to negotiate a better contract haul/disposal rate than would otherwise be possible if the proposed landfill were not in the county.

In the five counties surveyed which had or will have private waste disposal facilities (Banks, Barrow, Bibb, Taylor, Elbert), only one was able to dispose of its garbage for free. This is Taylor County. However, with a population of less than half that of Morgan, this is not an especially significant amount of waste. Thus, the revenue loss to the landfill is not great. In two counties (Barrow, Bibb), the county government was not responsible for waste pickup. Rather all residential and commercial pickup is by private companies who pay tipping fees at whatever landfill they choose to take their garbage. Banks County was negotiating collection with its private landfill operator. Thus, while it is possible that free waste disposal might be possible at a new landfill in Morgan County, this should not be assumed as a Most Likely scenario.

Nonetheless, the possibility does exist that (a) optimistically, Morgan County might be able to negotiate with the owner/operator of the proposed landfill for free disposal (at least for that waste which is now exempt from charges at the current transfer station), (b) it might be able to avoid haul costs to an out-of-county landfill (perhaps a more likely scenario), or (c) more conservatively, it might be able to negotiate lower haul-disposal fees at an out-of-county landfill due to the presence of a landfill in Morgan County. (Note: If this latter were pursued, one would not also be able to gain the benefit of having closed the transfer station.) The remainder of this section will address the potential benefits of each of these.

4.2 Transfer Station Waste

Table 5 reflects the volumes of different types of waste handled by the Morgan County transfer station in fiscal 2009. (Note: Information in this level of detail was not kept prior to that. Thus, at this time, there are apparently only 21 months of such data

available without considerable research of old records.) What is especially interesting about this data is that nearly 55% of the waste moving through the transfer station is

**Table 5. Morgan County Transfer Station
Waste Handled (2009 Fiscal Year)**

<u>Exempt MSW (tons)</u>	
County Compactors	5,000
Roads & Bridges	<u>56</u>
Total County	5,056
City of Madison	1,122
Free Days	592
Exempt Accounts (Schools, State, Churches)	<u>246</u>
Total Exempt MSW	7,016 (45.5%)
<u>Non-Exempt MSW (tons)</u>	
Madison Commercial	3,319
Out-of-County (SDS)	2,659
Commercial w/Accounts	1,385
City of Rutledge Contractor	24
Non-Account Cash Customers (est)	<u>1,112</u>
Total Non-Exempt MSW	8,399 (54.5%)
<u>Total MSW (tons)</u>	15,415 (100%)
<u>Other (tons)</u>	
Inert: Non-Exempt	416
Exempt	<u>344</u>
Total Inert	760
Recycling: Scrap Metal	<u>175</u>
Total Other	935
<u>Total Waste (tons [excluding Oil, Pesticides, Tires])</u>	16,350
<u>Other Waste</u>	
Oil (gallons)	560
Pesticides (tons)	0.46
Tires (number)	2,044

generating revenues in excess of the cost to dispose of this waste. Thus, when one looks at the potential benefit of being able to dispose of waste locally for free, it is not the entire 16,350 tons of waste handled by the facility in 2009 which can be considered, but only the 7,360 tons which pays no fees for disposal. The remaining tonnage is generating revenues which help defray the costs of disposing of the exempt waste. To eliminate the transfer station would also eliminate this financial benefit. This is especially true for recycled scrap metal and inert material which generate revenues without any appreciable disposal-related costs.

In light of this, one might consider eliminating the acceptance of MSW, oil, and hazardous materials at the transfer station while continuing to receive scrap metal and inert material in order to retain their positive revenue streams. If this were done, it would still require an employee on site whose cost would likely exceed any revenue gained from having taken this approach. Thus, it probably makes sense either to close the transfer station entirely or continue its operation for all materials.

4.3 Net Disposal Costs

Table 6 presents disposal revenues and costs associated with the Morgan County transfer station in fiscal 2009. While some have suggested that having the ability to dispose of County/City garbage for free at the proposed landfill would eliminate the nearly \$526,000 in disposal costs now incurred by the County, in reality, after revenues are taken into consideration, the actual benefit is closer to \$180,000 annually, a significant number but far less than \$526,000.

**Table 6. Morgan County Transfer Station
Net Disposal Costs (2009 Fiscal Year)**

<u>Disposal Costs</u>	
MSW (Oak Grove)	\$ 521,475
Tires	3,002
Hazmat (pesticides, paint)	<u>1,396</u>
Total Disposal Costs	\$ 525,873
<u>Disposal Revenues</u>	
Madison Commercial	\$ 123,625
Out-of-County	90,523
Other Commercial w/Accounts	50,946
Non-Account Cash Customers	55,240
Inert Waste	7,901
Scrap Metal	17,499
Oil	<u>67</u>
Total Disposal Revenues	\$ 345,801
<u>Net Disposal Costs</u>	\$ 180,072

It is projected that waste tonnage in Morgan County will increase by an average of 2% annually beginning in 2010 for each of the following 35 years. Thus, in 2010 dollars, the average benefit over the life of the proposed landfill (assuming it begins operation in 2016), would be approximately \$254,700. Assuming that haul and tipping fee prices increased at the rate of inflation, this would also be the constant dollar value of this particular benefit on an annual basis. (Note: Tipping fees tend to increase at a slower rate than inflation. Thus, realistically, the benefit would probably be closer to the loss at the transfer station today not this higher amount, or \$180,100.)

4.4 Optimistic, Most Likely, and Conservative Scenarios

Optimistic

While it is not expected as especially probable (free garbage disposal for all County and City waste at the proposed landfill), when adjusted for inflation and projected increases in volume over time, this \$254,700 benefit does represent the most optimistic case of the proposed landfill for this particular benefit. However, for the Most Likely and Conservative Scenarios, a different approach must be employed. (Note: Even under the most optimistic negotiated terms, it is unlikely the proposed landfill would extend free disposal to those commercial accounts which Morgan County is currently charging market rates at its transfer station. Thus, the benefit can only be calculated on the exempt waste volumes.)

Most Likely

From a Most Likely perspective, what would seem to be most logical is that Morgan County could negotiate a disposal fee at the local landfill at a rate similar to that now received at Oak Grove. If this could be done, then the financial benefit for the Most Likely scenario would be the savings of the haul cost differential from the current transfer station to Oak Grove vs. County and City collection vehicles simply taking their garbage to the proposed landfill rather than the transfer station.

The current SDS contract for hauling and disposing of MSW from the transfer station to Oak Grove (\$33.75 per ton) does not provide a breakdown of how much of this is for haul and how much for tipping fees. Nonetheless, based on a previous contract which did provide such a breakdown, it is estimated that the current cost for haul would be approximately \$9.75 per ton and disposal fees of \$24 per ton.

At this time only 7,016 tons of MSW at the transfer station are received which are not paying their full cost of disposal. It is this amount for which an elimination of the haul cost will be beneficial. Assuming an annual increase in exempt volume of 2%, this benefit would accrue on average each year for the life of the project to 9,728 tons of MSW. At a \$9.75 per ton savings, this would be an average benefit annually of \$94,800 annually in 2010 dollars over the 30 year life of the landfill.

Conservative

It has recently been learned that the Newton County landfill has been certified as having a 100 year capacity. As a consequence, although Newton County is not presently taking out-of-county garbage, it is now considering doing so. One source for new garbage presently being considered is apparently Morgan County. If this disposal option becomes available, then Morgan County might be able to reduce its haul distance from the current transfer station by 20%. If a \$24 tipping fee could be negotiated with Newton County, then the haul cost of \$9.75 may be able to be reduced because of the shorter mileage. However, this would not be by the full 20% as some of the costs associated with haul relate to the time the tractor-trailer is being loaded and unloaded, and traveling to and from its home location. Thus, the savings might be no more than \$1.00 per ton. Thus, as a Conservative scenario, the benefit of disposing locally vs. hauling to Newton County might be \$8.75 per ton. At an average of 9,728 tons per year, this would equate to a savings of \$85,100 each year for the life of the landfill.

5.0 Local Non-Exempt Waste

5.1 Background

Last fiscal year 8,399 tons of MSW moved through the Morgan County transfer station which was required to pay a tipping fee. However, of this, 2,659 tons was brought from out-of-county by the private firm with the current contract for hauling MSW from the transfer station to Oak Grove in Barrow County. Thus, 5,740 tons was likely waste generated in Morgan County which paid a tipping fee. (Note: The actual amount coming to the transfer station strictly from Morgan County is likely less than this because there are a few private waste companies which bring in garbage from Oconee County and other locations. However, it is also known that private firms such as B&W will sometimes take Morgan County garbage to other disposal sites when this is felt to be more economical. Thus, the 5,740 tons will be used as a proxy for Morgan County commercial waste which pays a tipping fee at the transfer station or some nearby landfill and might benefit from the proposed landfill.)

In the event the proposed landfill is actually built in Morgan County, this has the potential to benefit the generators of this local commercial waste. This will be a function of the comparative cost of the tipping fee at a new landfill in the county vs. what is now being paid at the transfer station (the \$37.08 per ton). The balance of this section will address this potential benefit.

5.2 Comparative Tipping Fees

Table 7 presents average 2007-2009 tipping fees in three regions for which DCA summarizes such information (Northeast Georgia, Middle Georgia, Central Savannah River Area) and within which Morgan County is fairly centrally located.

**Table 7. 2007-2009 MSW Tipping Fees
(\$ per ton)**

<u>Region</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>Annual Increase</u>
Northeast Georgia	36.69	36.76	37.75	1.4%
Middle Georgia	27.88	29.64	27.21	(1.2%)
Central Savannah River	<u>33.50</u>	<u>33.44</u>	<u>33.48</u>	<u>0</u>
Average	32.69	33.28	32.81	0.2%

Source: Georgia Department of Community Affairs Website

As referenced previously, the Morgan County transfer station presently charges its commercial customers \$37.08 per ton. This is consistent with the 2009 average for Northeast Georgia of \$37.75 per ton. The unknown, of course, is what the proposed landfill on the Banks property will charge. From a benefit standpoint, conservatively it might be assumed that it would charge the average for the region in which it will reside (Northeast Georgia) once the transfer station is closed. If this occurred, local commercial generators of waste would end up paying \$0.67 per ton more than they now are, or a net negative benefit.

However, it is felt that the proposed landfill will not be able to charge this rate and, in fact, rates in Northeast Georgia will actually fall. The basis for this assumption is the following: (a) Elbert County will be bringing on a new waste disposal facility with the potential to handle 800 tons of MSW per day, (b) Newton County will likely be seeking outside garbage for its landfill which it has not been doing in recent years, (c) Oak Grove in Barrow County is on the verge of securing a permit which will significantly extend its life, (d) the private landfill in Banks County on the northern edge of Northeast Georgia is also planning on expanding its capacity, and (e) the proposed landfill on the Banks property is on the northern edge of Middle Georgia which has the lowest average tipping fees in Georgia (over \$10 less per ton than in Northeast Georgia). All these will likely place downward pressures on tipping fees the proposed landfill in Morgan County will be able to charge.

In light of the preceding, for purposes of this analysis, it will be assumed that the Most Likely tipping fees charged by the proposed landfill will be the average for the three regions, or \$32.81 per ton. This would provide local commercial waste generators a benefit from a landfill in Morgan County of \$4.27 per ton. From an Optimistic perspective, the new landfill might only charge the average for Middle Georgia which is presently \$27.21 per ton, or a \$9.87 per ton benefit to Morgan County commercial waste generators.

5.3 Volume and Financial Benefits

As referenced above, presently 5,740 tons of Morgan County commercial waste is moving through the transfer station. Over time, this is expected to increase. Elsewhere in this study, that increase is projected to be 2% annually. If this does occur, then the average annual volume of Morgan County commercial waste for the 30 year life of the proposed landfill will be approximately 8,120 tons. Assuming the per ton *nominal* benefits referenced in section 5.2, Table 8 reflects the nominal financial benefit to local commercial waste generators of the proposed landfill in Morgan County.

However, the effects of inflation must be taken into consideration as well. As is evident in Table 7, over the past two years, tipping fees have increased only marginally. During this same period the CPI increase averaged approximately 1.4% annually, or 1.2% more than tipping fees. In Morgan County, tipping fees at the transfer station since its opening 15 years ago have not kept pace with inflation. Some of this differential can be attributed to the economy with concomitant declines in waste being disposed. However, as alluded to above, it also has to do with competition and the high fixed costs associated with landfills (which means that when variable costs increase it does not require as great an increase in tipping fees to maintain profitability). (Note: In each of the four counties surveyed which had private landfills, volume was down in recent years. In Bibb County this decline was 20% over the past two years; in Barrow County, tonnage was down 42% since 2006; in Banks, host fees have declined 50% since past peaks; and in Taylor County, declines are causing a downward renegotiation of host fees due to lower waste volume.)

In light of the preceding, for an Optimistic scenario (not considered very likely), it will be assumed that tipping fees will keep pace with inflation. For Most Likely and Conservative scenarios, it will be assumed that they increase over time at half the rate of inflation, or approximately 2% annually. As this is approximately equal to the projected increase in volume, the benefit for current commercial volume going through the transfer station can be assumed to be the average annually for the life of the proposed landfill. Table 8 also reflects these constant value benefits of a new landfill in Morgan County

Table 8. Commercial Waste Volumes and Benefits

	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Tonnage/Year	8,120	8,120	8,120
Per Ton Benefit (Nominal)	(\$0.67)	\$9.87	\$4.27
Average Benefit: Nominal	(\$ 5,400)	\$80,100	\$34,700
Constant	(\$ 3,800)	\$80,100	\$24,500

for local commercial waste generators. Over the life of the project the potential benefits range from negative \$3,800 to a positive \$80,100 per year with the most likely scenario being \$24,500.

6.0 Collection Savings

It has been suggested by some that the proposed landfill will agree to collect Morgan County's garbage for free. Essentially, this would mean that the landfill would buy and operate at its own expense trucks to collect garbage from the various compactor sites as well as for recycling containers at these sites. It is estimated that the benefit of this to the County might be \$300-400,000 annually (total solid waste and recycling expenses less the cost of the transfer station, old landfill monitoring, disposal costs, compactor site clean-up and operation, compactor maintenance and replacement). While this would be a attractive benefit to the County if it could be negotiated, it does not seem realistic. In the five counties surveyed with private waste disposal facilities, in none did the landfill operator pick up the county's garbage for free. (There are situations where the landfill operator, as part of a collection company, contracted with the host county and local towns to pick up garbage but not for free.) Additionally, in the Banks application, there is no reference that the landfill would entertain collecting the County's garbage at no cost.

The applicant did indicate that collection trucks in the southern half of the county would have shorter haul distances if they dropped their loads at the site of the proposed landfill. While this is true, if the transfer station is closed, those trucks picking up in the northern half of the county would have longer haul distances. In fact, as the proposed landfill is marginally less centrally located to County and City collection trucks than the current transfer station, there would be a slight negative financial impact of closing the transfer station with County and City collection vehicles dumping at the proposed landfill location.

For purposes of this study, these minor increased costs of collection will be ignored. However, it will also be assumed that the proposed landfill operator will not agree to pick up the County's garbage for free. In light of this, there will be no collection savings benefit assumed associated with the proposed landfill. (Note: It is possible the landfill operator might contract to handle collection at a rate less than the County now incurs. However, this option presently exists with other solid waste companies and, thus, should not be seen as a savings associated with the proposed landfill exclusively.)

7.0 Inspection, Monitoring, and Enforcement Fees

It has also been suggested that Morgan County may be able to generate additional net income by charging more for any required inspections, monitoring, and enforcement than it costs to carry out these activities. While this is a possibility, it is often the case that governments do not charge in their fee structures the full cost of inspection, monitoring, and enforcement. In fact, this is probably more common than the reverse. Additionally, it should not be the function of government to try to make a profit on such activities. Consequently, for purposes of this study, it will be assumed that any fees charged a private landfill in Morgan County for inspections, monitoring, and enforcement will be

roughly equal to the cost of performing these functions. Thus, there will be no financial benefit to the County for these activities.

8.0 Ad Valorem Taxes

8.1 Background

The final area of a positive financial benefit associated with the proposed landfill is the possibility of increased ad valorem tax revenues. In the recent *Morgan County Citizen* article on Jeff Banks and the landfill, Mr. Banks suggests that these will be \$80,000 annually. This section will attempt to analyze the range of possible increases in ad valorem taxes which might be generated by the 518 acre landfill site. However, it should be understood that ad valorem taxes by themselves are a “gross,” not “net” number. Thus, it will also be necessary to estimate what additional costs will have to be incurred by local governments with the landfill in place vs. if it had not been built. (The same would have to be done for any other new proposed use for this property.) This would then be deducted from gross ad valorem taxes to arrive at net revenues to local governments (in this instance the County and schools as the proposed landfill does not fall within the City of Madison.) When estimating ad valorem tax revenue potential for the proposed landfill, it must be understood that courts have ruled that assessed value must be based on the income approach. Thus, it does not matter what nearby lands are assessed for. The value of the proposed landfill will be independent of that.

8.2 Assessed Value

Land

At this time 429.47 acres of the proposed landfill site are assessed at an average of \$5,496 per acre. Extrapolated to the entire 518 acres proposed for the landfill, this would be a total value of \$2,846,800. This will be considered as the base valuation for the property for comparing before and after assessed value and net ad valorem taxes.

Note: Just to the north of the proposed landfill site, on July 10, 2008, the Banks family sold two parcels of land (94.275 acres, 242.37 acres) for a total of \$4,210,202, or an average of \$12,745 per acre. However, after this land was sold and rezoned industrial, 230 acres of this land was reassessed at \$15,000 per acre (down from \$17,172 the year before due to falling property values). For the 518 acre proposed landfill site, this would be a current land value of approximately \$7.8 million if used for normal industrial purposes as opposed to a landfill.

Improvements

As proposed, 212 acres of the landfill site will be used for disposal cells, holding ponds, scale house, additional facilities, and other improvements. In Bibb County, the private Swift Creek landfill is approximately the same size as the proposed land fill in Morgan County (538 acres vs. 518 acres). In 2007 this landfill, with an average throughput of

approximately just under 900 tons daily, was assessed at approximately \$6.5 million. However, in 2010, volume through the landfill had fallen nearly 20% to approximately 700 tons per day. As a result, the landfill owner, based on the court ordered income approach, has appealed that the landfill should be valued at approximately \$3.25 million. Assuming the landfill owner is successful in achieving 75% of the proposed appeal valuation, this would suggest that a landfill with 20% greater average volume than Swift Creek in 2007 might be valued at \$8.9 million. (As referenced above, the average projected daily volume for the Most Likely scenario was 1,080 tons per day which is approximately 20% more than was moving through the Swift Creek when it was assessed at \$6.5 million.) For an Optimistic scenario where approximately 1,400 tons moves through the facility daily, then the valuation might be as high \$13.7 million.

8.3 Ad Valorem Taxes

At this time it is assumed that property in the county will pay approximately 1% of its fair market value annually in ad valorem taxes if it has no exemptions (e.g., homestead, agricultural, conservation). This is a combination of County and School taxes.

While the proposed landfill site would normally pay over \$20,000 at this time in ad valorem taxes without any exemptions, the property is presently enrolled in the Conservation Use Valuation Assessment (CUVA) program. As a consequence, its annual ad valorem taxes are approximately \$1,500. (This extrapolates data from the 429 acre parcel which would comprise the majority of the landfill site to the entire 518 acres referenced in the application.) This \$1,500 must be deducted from any ad valorem taxes projected to be paid by the proposed landfill to arrive at a gross ad valorem tax amount for the landfill based on its assessed value times the assumed tax rate of 1% of fair market value (see Table 9).

**Table 9. Proposed Banks Property Landfill
Gross Ad Valorem Tax Benefits**

	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Assessed Value	\$ 6.5 million	\$ 13.7 million	\$ 8.9 million
Ad Valorem Taxes:			
Proposed Landfill	\$ 65,000	\$ 137,000	\$ 89,000
Current Land	<u>1,500</u>	<u>1,500</u>	<u>1,500</u>
Gross Taxes	\$ 63,500	\$ 135,500	\$ 87,500

8.4 Ad Valorem Tax Recovery and Penalties

The Banks property is presently assessed and property taxes paid under the CUVA program. If the property is taken out of conservation use before the expiration of the agreed upon period, then the property owner is subject to the payment of back taxes and penalties with the exact amount dependent on when this occurs. If it is assumed that

rezoning, variances, conditional uses, and permits are received and construction on the landfill began in 2014, then the amount of these back taxes and penalties could be as much as \$210,000-240,000. However, if it were rezoned in 2011, then the assessed value on the land would increase which would result in an even greater tax relief benefit to the Banks property. As a consequence, if this land is converted to a landfill, the amount on which penalties would have to be calculated and those taxes which will have to be repaid will be greater than the \$210,000-240,000. For purposes of the conservative, optimistic, and most likely scenarios of this one time benefit to the county (and downside to the Banks) will be \$210,000, \$240,000, and \$270,000 respectively. As this payment will not have to be made until likely 2015, their inflation adjusted values will be \$178,800, \$204,400, and \$229,900. When allocated over the life of the landfill, the average annual benefit of this is \$6,000 (conservative), \$6,800 (most likely), and \$7,700 (optimistic).

8.5 Cost of Government Services

When a new more intensive land use is undertaken, it generally requires a greater level of government services, infrastructure, and infrastructure maintenance. Thus, the Table 9 estimates for gross ad valorem tax revenues are not necessarily a net benefit to the county. In order to determine that net benefit, it is necessary to compare the cost of government costs associated with the property’s current land use vs. that of the proposed land use. This data does not readily exist for the proposed project site for either its existing or proposed use. However, a sense of this difference can be gained by using data for agricultural land in general and that for industrial uses. In 2008, Dr. Jeffrey H. Dorfman of the University of Georgia did a study—“Local Government Fiscal Impacts of land Uses in Morgan County: Revenue and Expenditure Streams by Land Use Category”—for the Morgan County Board of Commissioners based on data gathered in cooperation with Morgan County officials and staff. In this study, Dr. Dorfman estimated that in Morgan County agricultural/forestry land received only \$0.383 in government benefits for each tax dollar it paid. Industry only received \$0.25 in government benefits for each tax dollar it paid. These will be used as proxies for the cost of government services for the Banks property in its current agricultural/forestry use and as a landfill (see Table 10).

**Table 10. *Proposed Banks Property Landfill*
Cost of Government Services for Project Site**

<u>Land Use</u>	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Landfill	\$ 16,300	\$ 34,300	\$ 15,500
Agriculture	<u>600</u>	<u>600</u>	<u>600</u>
Net Increase	\$ 15,700	\$ 33,700	\$ 21,700

8.6 Net Ad Valorem Tax Benefits

Table 11 presents the net ad valorem tax benefits which are projected to be generated from the 518 acre project site under three scenarios. These range from a low of \$54,000 annually to a high of \$110,000 with \$73,000 being most probable.

**Table 11. *Proposed Banks Property Landfill*
Net Ad Valorem Tax Benefits**

	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Gross Ad Valorem Taxes	\$ 63,500	\$ 135,500	\$ 87,500
Tax Recovery & Penalties	<u>6,000</u>	<u>7,700</u>	<u>6,800</u>
Total	\$ 69,500	\$ 143,200	\$ 94,300
Less:			
Net Increase in Govt Costs	<u>15,700</u>	<u>33,700</u>	<u>21,700</u>
Net Ad Valorem Benefits	\$ 53,800	\$ 109,500	\$ 72,600

It should be noted that since the courts require a landfill be assessed based on its income, that when it closes, there will be little remaining taxable value associated with the landfill. While this might change if the landfill could be mined, methane gas could be tapped, or other uses found for the site, these are not part of the application so cannot be evaluated.

9.0 Summary

Table 12 summarizes the direct financial benefits that are projected for the three

**Table 12. *Proposed Banks Property Landfill*
Average Annual Financial Benefits Expressed in 2010 Dollars**

<u>Category</u>	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Transfer Station Closure	\$ 159,300	\$ 194,700	\$ 177,000
Host Fees (to County)	132,500	376,000	215,000
Disposal Savings (City/County)	85,100	254,700	94,800
Disposal Savings (Others)	(3,800)	80,100	24,500
Collection Savings (County)	0	0	0
Inspection/Enforcement Fees	0	0	0
Landfill Ad Valorem Taxes	<u>53,800</u>	<u>109,500</u>	<u>72,600</u>
Total Benefits: Annual	\$ 426,900	\$ 1,015,000	\$ 583,900
30 Years	\$12,810,000	\$30,450,000	\$17,515,000
Landfill Assessment (Net)	<u>3,600,000</u>	<u>10,350,000</u>	<u>6,000,000</u>
Total 30 Year Benefit	\$16,410,000	\$40,800,000	\$23,515,000

scenarios: Conservative, Optimistic, and Most Likely. (Note: Most Likely does not mean to suggest that this will be that which will happen in reality but that a result of this order of magnitude is more probable than either the conservative or optimistic scenarios.)

Based on the results of this evaluation, in 2010 dollars, the direct benefits which might be derived in the county from a landfill as proposed by the Banks would be a low of approximately \$427,000 to a high of \$1,015,000. However, the more probable outcome would be in the range of \$584,000. Over the 30 year life of the project this would generate from approximately \$12.8 million to \$30.5 million with \$17.5 million being the most likely order of magnitude of these benefits.

Additionally, if the proposed landfill is built, it would increase the tax base by a low of \$3.6 million to a possible high of \$10.85 million. The most probable increase, however, would be just over \$6 million. However, based on recent land sales by the Banks to Patillo, the current valuation of the proposed landfill site may be undervalued with the true assessed value possibly being closer to \$6 million than the current \$2.85 million. If that proves to be the case, then the increase in valuation under the three scenarios would be only \$0.50 million at the low end to \$7.7 million at the high end with \$2.9 million being the more likely order of magnitude. When the net increase in the landfill property valuation is combined with the annual benefits projected to be associated with the proposed landfill operations, the total 30 year financial benefit of the landfill would range from a low of \$16.4 million to a high of \$40.8 million with a more likely amount being \$23.5 million.

With respect to potential tax benefits for residents of Morgan County, of the direct financial benefits calculated, those accruing to businesses and individual waste generators are not government revenue related. When these are deducted, the average annual benefit to government over the life of the landfill would be approximately \$431,000 at the low end and \$935,000 at the high end with \$559,000 being the more probable magnitude.

Presently combined County and Education budgets for Morgan County in 2009 were approximately \$43 million. Given projected population growth for the county, during the life of the proposed landfill, this will average \$64.8 million in 2010 dollars over time. Based on these budget levels, the projected financial benefits of the proposed landfill presented in this study represent a low of 0.7% to a high of 1.4%. The more likely percentage benefit would be in the range of 0.9%. As ad valorem taxes generate just over 50% of the combined County-Education budget, these benefits as a percentage of property tax revenues range from a low of 1.3% to a high of 2.7% with a more likely amount being 1.8%.

With respect to what this means per household, it should be realized that residential properties pay approximately one-third of ad valorem taxes collected in the county (with the other two-thirds generated by commerce, industry, and agriculture). Over the course of the 30 year life of the proposed landfill, there will be an annual average of 11,300 housing units in Morgan County. Thus, the direct financial benefit per household in Morgan County of the proposed landfill would be about \$12 per year at the low end (\$1 per month) and \$27 at the most optimistic (or slightly more than \$2 per month). The

most likely tax benefit would be on the order of \$16 per year per household (approximately \$1.33 per month).

These projected benefits have not taken into consideration any possible negative financial effects in the county. Thus, the net benefit will be less than that reflected in this report and may conceivably be negative. As a companion study to this one, the author has also evaluated what potential negative financial effects might be. When these are compared, it is possible to have a more balanced picture of the potential financial implications of the proposed landfill for the county and its residents.

Two comments in closing should be made. First, the Conservative and Optimistic scenarios calculated in this study are by no means the absolutely most conservative or most optimistic possible. For example, there are those who could legitimately argue that increased success in recycling will significantly reduce the amount of waste which will move through the facility and, thus, the tonnage on which host fees are calculated or the projected benefits to be derived from being able to dispose of garbage free or at a reduced rate at the proposed landfill. Conversely, others could legitimately argue that it may be possible to have at least a partial CPI adjuster for host fees which would at least partially mitigate the erosion of these values over time or that higher fees can be negotiated at the outset. These and other points like them could actually occur. Nonetheless, it is felt that the estimates presented are reasonable parameters within which discussions of the benefits of the proposed landfill can take place.

The second point relates to the financial implications of being able to negotiate more favorable terms for the county, e.g., higher host fees, free garbage disposal, fee collection. If one or more of these were to occur, it must be understood that there is also a financial downside. As was stated earlier, courts have ruled that the assessed valuations of landfills for ad valorem tax purposes must be based on an income approach. Thus, any negotiations which improve the position of the county and reduce the profitability of the landfill will result in lower ad valorem tax revenues. While this value will only be a portion of the benefit derived from a better negotiated position, it will mute the potential benefit of ad valorem taxes which will be generated by the proposed landfill. In fact it should be noted that under the Optimistic and Conservative scenarios reflected in section 8.0 whose results are presented in Table 10, this effect has *not* been taken into consideration and the ad valorem tax benefits reflected will be respectively less and greater than indicated as some of the benefits in earlier sections assume lower or greater profitability than the Most Likely.

*Financial Implications for Morgan County
of the
Proposed Banks Property Landfill*

Part II. Costs

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May 16, 2010**

Abstract

A regional landfill is proposed on 518 acres just south of the city of Madison in Morgan County, Georgia. The applicant seeking to rezone the property to this use has indicated the landfill would have a life of approximately 30 years with average daily volume of 1,000 tons. This paper estimates possible financial costs to Morgan County residents under three scenarios: conservative, optimistic, and most likely.

Financial costs associated with such a landfill were determined to include: (1) declines in property values within five miles of the landfill, (2) declines in ad valorem tax revenues due to diminution in property values, and (3) increased frequency and, thus, costs associated with conducting environmental studies on properties when sold or loans secured. There were two additional factors which might have negative financial implications but for which insufficient information was available upon which to make a determination or estimates: (1) a potential decline in the local economy, especially tourism in Madison, and (2) the potential cleanup costs or water supply replacement in the event of an environmental problem whose cost had to be borne by Morgan County residents. Four other factors were determined not to have negative financial implications.

Average annual financial costs to Morgan County residents over the life of the project were projected to range from a high of \$604,000 to a low of \$225,000. The most likely order of magnitude was estimated at \$395,000. Without considering the assessed value of the landfill itself, it was estimated that the loss in property values would affect just under 3,700 properties and would range from a high of \$88.3 million to a low of \$33.9 million with \$57.4 million being the most probable order of magnitude.

Over the life of the project, on an average annual basis, due to property value diminution, ad valorem tax revenues are estimated to decline in the range of \$378,000 to \$149,000 with \$244,000 being the most likely. Of this, 9.2% would be lost revenues to the City of Madison; 35.7% to the County; and 55.1% to the Schools. The cost to individual residences would range from \$4.50 to \$11.00 annually with \$7 being most likely.

Author's Note

This paper is intended to be informational, not to support one side or the other of the landfill issue. Thus, if pertinent information or factual, conceptual, or mathematical errors are identified and conveyed to the author, the report can be modified as appropriate to make it more accurate and reflective of likely financial effects.

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1.0 Introduction

The Banks family has submitted an application to Morgan County to rezone and then secure conditional use and variance approvals as the first steps in obtaining permits for a solid waste landfill on 518 acres 1.3 miles south of Madison's city limits in the northeast corner of Aqua and Indian Creek roads. Various concerns have been expressed that there will be financial costs to the county if the landfill were to be built. As with benefits, to date no in-depth analysis has been conducted as to what these costs might be. This study attempts to objectively estimate such costs.

While other possibilities may exist, potential financial costs which have been suggested include:

- Reduced property valuations and ad valorem taxes due to stigma and actual landfill effects
- Reduced economic development on adjacent properties
- Loss of a higher value use for the proposed landfill site with greater benefits to the county
- Loss of ad valorem tax revenues and other economic benefits after landfill closure vs. alternative uses
- Cost of additional government services, infrastructure, and infrastructure maintenance required by landfill
- Costs associated with government monitoring, inspections, and enforcement
- Costs associated with greater frequency of environmental assessments on nearby properties when they change hands or loans are applied for
- Damage to the local economy especially tourism in Madison
- Cost to the public of environmental cleanup or water supply replacement if the technology employed malfunctions and the landfill owner/operator is financially unable to cover this cost or malfunction occurs after closure

Each of these will be explored below for the life of the project with all estimated costs in 2010 dollars. Three scenarios will be addressed: conservative, optimistic, and most likely. Although sometimes perhaps counterintuitive, since costs will need to be related to benefit projections, "conservative" will be assumed to mean the cost scenario where there is the most negative effect from the proposed landfill and "optimistic" will be the scenario where the least negative effect is projected to occur.

2.0 Property Valuations and Ad Valorem Taxes

2.1 Background

As would be expected, there are two schools of thought as to whether the existence of a landfill has any effect on the value of off-site properties and, if so, on the revenues from ad valorem taxes which can be generated from these properties. One school says "Yes, they are significant." The other says "No, they are non-existent or negligible at worst."

Often adherents of each school cite examples or perceptions to support their position. Those who say there is no effect can point to cases where new developments have been built in proximity to landfills after the landfill was in place. Those who oppose a landfill will reference someone who has indicated that under certain circumstances valuations may decline by as much as 50-60% for properties immediately adjacent and downwind from a landfill. The problem with both of these is that they tend to be anecdotal and, while possibly true, are not necessarily reflective of aggregates, what occurs over time, or of unique conditions associated with a specific landfill and locale.

Fortunately, there have been a number of detailed studies evaluating data over time for large samples for a range of situations and conditions. While none of these studies reflect the exact conditions at the next landfill project under consideration (to include the one on the Banks property), they tend to provide a base of evidence from which reasonable extrapolations can be made. The preponderance of such research indicates that there can be a negative effect of a landfill on off-site property values.

While there may be others, only one study was identified which said there was no effect. However, this site had several unique characteristics which do not typically exist elsewhere. Two factors which mitigated any effect at this study's site were (1) there was a hill between the landfill and the nearby development, and (2) government owned the land between the landfill and the development. Both of these factors apparently allayed fears of nearby property owners to the degree they felt buffers were sufficient, the landfill could never expand in that direction, and the hill would help minimize odor, dust, light or other potential negative effects. Neither of these two factors exists at the Banks property.

The balance of the articles reviewed (eight) all indicated that there were landfill-related effects on off-site property values. Taken in their entirety, the articles essentially suggest that in remote or highly rural areas there was no effect (and in one article even a positive effect due to the addition of infrastructure which did not previously exist) and, as landfills moved closer to population centers, effects on property valuations began to be felt at an increasing rate. In all these studies, the maximum reported effect on off-site property values was 19%. While this is significant, it is far less than the 50-60% devaluations that are sometimes cited (and which may actually occur somewhere for a specific property adjacent to a specific landfill). It also appears that the greatest effect is within two miles although one study indicated an impact out to 3 ¼ miles of the landfill and another to as far as 7 miles.

There is one article which distinguishes between larger volume (greater than 500 tons per day) and smaller volume (less than 300 tons per day) landfills. This study identifies approximately 20% of the smaller landfills where there does not seem to be a property value effect. However, on the other 80% there was a negative effect as well as for virtually 100% of the large landfills. As the proposed landfill on the Banks property anticipates volumes of more than 1000 tons daily, it would fall into the "large volume landfill" category and would be expected to create off-site negative property value effects.

It should not be surprising that such results would be found with the reasons not necessarily having to do with the fact that a landfill actually has polluted the environment or caused major odor, dust, rodent, bird, or other problems, or that new technologies might mitigate or prevent some of these problems. Market values of property are driven by perception as much as reality. In surveys conducted as part of the above referenced research, significant portions of the surveyed populations had negative perceptions of potential problems associated with landfills (essentially what are referred to as “stigma effects”) and that this would affect their buying decisions. Simply stated, would a buyer pay more or less for a property in proximity to a landfill vs. one at a greater distance? All else being equal, the answer tends to be invariably that a person would pay less. In talking to local residents, that seemed to be the prevalent perception in Morgan County.

2.2 Valuation Impact Parameters

As none of the studies by itself describe a situation precisely like the conditions associated with the proposed landfill on the Banks property, none of these studies by itself should be used as the Most Likely scenario for the Morgan County situation. Additionally not all of the studies quantified the property valuation effects and, therefore, are of limited value in helping to estimate possible quantitative effects in Morgan County. However, four of the studies did. Thus, for purposes of this study, information from these studies will be used in combination to develop proxy values and distances which might provide a reasonable estimate of what the effects might be.

For purposes of the study, three concentric circles were placed around the boundaries of the landfill: 1 mile, 2 miles, and 5 miles. There seems to be consensus that the greatest effect is within the first 1-2 miles. After that there are differences of opinion as to how far out there is an effect. Rather than using the 7 mile radius reflected in one study, the maximum boundary for effects will be assumed as within only 5 miles.

Within the first mile, the average negative effect on property values was assumed as 12.1%. This is an average of the maximum reported effect in four studies that included such information (19%, 12%, 10%, and 7.3%). For the second mile, an effect of 5.5% will be used which is the average of the lower estimates of two studies which gave ranges out to the two mile distance. None of the studies specifically gave estimates for the two to five mile distance from the landfill. Thus, the same proportionate decline in value between the first and second band was used for the decline in impact between the second and third band (2.01-5.00 miles), or 2.5%. (Note: There could be effects in the county beyond this; however, no attempt will be made to calculate these.)

While these are assumed to be reasonable averages for the potential effect of the landfill on nearby property values, they do not reflect a more optimistic (i.e., less effect than the average projection) or conservative (i.e., greater effect). Table 1 outlines the range of possible effects which will be used for calculating the property valuation effects due to the presence of the landfill. Essentially, the most severe effect from the four studies (a 19% decline) will be used for the Conservative scenario in the first one mile distance and the least severe effect from the four studies (7.3%) will be used for the Optimistic

scenario. For the second and third bands (1.01-2.00 miles, 2.01-5.00 miles), these will be reduced or increased proportionately from their Most Likely percentages as occurred within the first mile band (7.3% vs. 12.1% vs. 19%).

Table 1. *Estimated Negative Valuation Effects at Various Distances from the Proposed Landfill*

<u>Scenario</u>	<u>0-1 mile</u>	<u>1-2 miles</u>	<u>2-5 miles</u>
Conservative	19.0%	8.6%	3.9%
Optimistic	7.3%	3.3%	1.5%
Most Likely	12.1%	5.5%	2.5%

Virtually all of the studies with quantitative estimates were assessing the negative effects on residential property, not agricultural, commercial, or industrial. However, one study did indicate that there was an effect on industrial property by open MSW landfills although not C&D or closed MSW facilities. With respect to agricultural property, based on the studies reviewed, if these were in isolated/highly rural areas, there did not seem to be any negative effect. Nonetheless, for agricultural properties within or adjacent to higher intensity zoned areas or those in areas on or adjacent designated as higher intensity development on future land use maps, it is felt these lands will eventually be used for residential, commercial, or industrial (just as the Banks agricultural property now is for a landfill and the former dairy farm now Madison Lakes was for residential). Thus, these estimated impacts are felt to be reasonably legitimate for agricultural lands as well.

2.3 Potentially Affected Properties

Assuming that property valuation effects of the proposed landfill are limited to the five mile band, Table 2 presents those numbers of parcels in each of the three bands and their current cumulative assessed valuations. Essentially, there are just under 3,700 potentially affected properties within five miles of the landfill with a cumulative 2009 assessed valuation of \$1,172.4 million.

Table 2. *Potentially Affected Properties at Various Distances from the Proposed Landfill*

	<u>0-1 mile</u>	<u>1-2 miles</u>	<u>2-5 miles</u>	<u>Total</u>
Number	128	462	3,100	3,690
Value (mm)	\$ 52.81	\$ 179.49	\$ 940.08	\$1,172.38

Source: Morgan County Tax Assessor

Table 3 provides a breakdown of 3,690 properties within a five mile radius of the proposed landfill. According to this information, there are 2,401 homes within five miles of the proposed landfill, or approximately 30% of all residences within the county.

Table 3. *Property Types within Five Miles of Proposed Landfill*

Residential	2,401
Conservation Use	401
Forest Land Protection	17
Non-Covenanted Ag	<u>252</u>
Total Ag/Forestry	670
Commercial	365
Industrial	<u>44</u>
Total	3,680

Note: Variance from 3690 due to tax exempt properties

Source: Morgan County Tax Assessor

Table 4 reflects Madison properties within each of the three bands. Nearly half of all parcels potentially affected are within Madison’s city limits although less than 100 of these are within two miles of the proposed landfill.

Table 4. *Madison Properties at Various Distances from the Proposed Landfill*

0-1 mile	1
1-2 miles	97
2-5 miles	<u>1,639</u>
Total	1,737

Source: Morgan County Tax Assessor

2.4 Estimated Effect on Property Valuations

Based on the assumed percentage effects on property valuations reflected in Table 1 and the assessed valuations reflected in Table 2, the diminution of current property values

because of the proposed landfill are presented in Table 5. The range of potential property value loss within a five mile distance of the proposed landfill ranges from approximately \$24.0 million to \$62.4 million with just under \$40 million being the order of magnitude of the most likely scenario.

Table 5. *Estimated Negative Effect on Existing Property Values at Various Distances from the Proposed Landfill*
(million \$)

<u>Scenario</u>	<u>0-1 mile</u>	<u>1-2 miles</u>	<u>2-5 miles</u>	<u>Total</u>
Conservative	10.03	15.50	36.91	62.44
Optimistic	3.86	5.95	14.18	23.99
Most Likely	6.39	9.87	23.51	39.77

In section 8.2, Part I, Benefits, a range of estimated increases in the assessed value were made for the land upon which the proposed landfill would be built under three scenarios. In order to determine the net change in property values once the landfill is operational, these values should be deducted from the above totals. However, as those values were previously shown as a benefit, to deduct them here would be a double counting of their value. Additionally, the above numbers should be seen in isolation as they reflect the decline in property values for existing Morgan County residents while the increase in valuation for the landfill site itself is an investment/value accretion for whoever eventually owns and operates the landfill.

While the data in Table 5 reflects the estimated negative effects on cumulative assessments within five miles of the proposed landfill at the present time, these numbers would be expected to increase at a rate greater than inflation as some portion of these properties are subdivided and developed over time. Assuming that rate of development has a 1:1 correlation with population growth (assumed as 2% in Part I), then it might be reasonable to assume that all properties on average will increase in value by 2% annually greater than inflation. (Note: A more precise number can be developed based on evaluating how the Morgan County tax digest has changed over the past 35 years in relation to inflation. However, that has not been done at this time. The results of that evaluation could be greater or less than a 2% average annual change assumed here.)

Using this 2% real average annual increase in property values over time, Table 6 reflects the loss in value to existing property owners as a result of the proposed landfill. When these factors are taken into consideration, the lost value adjusted over time to existing property owners would range from \$33.9 million to \$88.3 million with \$57.4 million being the most likely order of magnitude. However, this must be reduced by the lower ad valorem taxes which will be paid because of these lower values (see following section).

Table 6. *Estimated Negative Effect on Existing Property Values Adjusted over Time*

	<u>Million \$</u>
Conservative	88.38
Optimistic	33.9
Most Likely	57.4

2.5 Estimated Effect on Ad Valorem Tax Revenues

The previous section estimates the diminution in property values as a result of the proposed landfill. However, due to ad valorem tax relief which exists for certain categories of property owners, ad valorem taxes will not fall by a proportionate amount. Perhaps the most significant of these is the Conservation Use Value Assessments

Table 7. *Estimated Decline in Ad Valorem Tax Revenues Due to Lower Property Values Associated with the Proposed Landfill*
(2010 \$)

<u>Scenario</u>	<u>0-1 mile</u>	<u>1-2 miles</u>	<u>2-5 miles</u>	<u>Total</u>
Conservative:				
County	17,600	42,700	80,700	141,000
School	27,200	66,100	124,800	218,100
City	<u>100</u>	<u>11,600</u>	<u>24,800</u>	<u>36,500</u>
Total	44,900	120,400	230,300	395,600
Optimistic:				
County	6,800	16,400	31,000	54,200
School	10,400	25,400	48,000	83,800
City	<u>minimal</u>	<u>4,500</u>	<u>9,500</u>	<u>14,000</u>
Total	17,200	46,300	88,500	152,000
Most Likely:				
County	11,200	27,200	51,400	89,800
School	17,300	42,100	79,500	138,900
City	<u>100</u>	<u>7,400</u>	<u>15,800</u>	<u>23,200</u>
Total	28,600	76,700	146,700	251,900

Source: For Most Likely, Morgan County Tax Assessor using percentages from Table 1; others extrapolated from Most Likely.

(CUVA) of which there are 401 properties within five miles of the proposed landfill followed by Forest Land Protection Assessments (FLPA) of which there are 17

properties. When these reduced valuations are taken into consideration, Table 7 reflects the estimated negative effect of the proposed landfill on ad valorem tax revenues due to lower property values.

The above projected reductions in ad valorem tax revenues do not include consideration of homestead exemption. As a consequence, the negative effects are somewhat overstated. According to the Morgan County Tax Assessor, of the 2,401 residential properties within five miles of the proposed landfill 1,357 homes have homestead exemption. The Tax Assessor estimates that the average benefit per house is approximately \$30 per year, or \$40,700 for all these homes. Some portion of this \$40,700 is now reflected in the projected negative benefits and should not be. As the vast majority of affected residences are in the 2-5 mile band, the percentage decline in property values in this band, adjusted slightly upwards, is probably most reflective of that portion of homestead exemption benefits by which the negative effects should be reduced. Thus, for purposes of this analysis, this will be assumed as 4.5% (conservative), 2.0% (optimistic), and 3.0% (most likely). In 2010 dollars, the negative effects of the proposed landfill reflected in Table 7 should be reduced by \$17,800 for the Conservative Scenario, \$3,000 for the Optimistic, and \$7,600 for the Most Likely.

Based on Table 6, it might be assumed that the reduction in ad valorem tax revenues estimated above should be increased to reflect the further loss of property values over time due to further development of these properties. While it is true these ad valorem taxes will not be generated, it is also true that government costs associated with this development will also not occur at a similar rate if less valuable development occurs. As there is a blend of residential, agriculture, industry, and commercial in the affected bands, it will be assumed that any tax revenues generated would be offset equally by the increased demand for government services, infrastructure, and infrastructure maintenance due to development. (Note: If the development were all of one type or another, then one might show either a net positive or negative change in government budgets, e.g., overly heavy residential growth would be net negative; overly heavy industrial or commercial, net positive [see Dorfman's study referenced in Part I, Benefits].)

3.0 Reduced Economic Development (Adjacent Properties)

There are those who have suggested that if the landfill is built on the Banks property it will have a negative effect on future development on adjacent properties, i.e., other businesses would shy away from locating adjacent to a landfill. If this were to occur, then the county would lose jobs and a broader tax base (and, therefore, net tax revenues) than it might otherwise have been able to attract.

Unfortunately, except for the one study which addressed industrial property values, not the attraction of new businesses, there does not appear to be pertinent research to address this one way or the other, at least not in a substantive manner. Nonetheless, it does not seem unreasonable that there will be certain types of industrial, commercial, and professional enterprises which would not wish to locate adjacent to a landfill either due to the stigma implications and/or actual factors such as dust, light, odor, birds, and rodents. Yet, on the other hand, there might just as well be other enterprises which will not be

averse to locating adjacent to such a facility, especially if the new business had somewhat similar characteristics. In fact, these might even be attracted to the area because of potentially lower land values resulting from the landfill and/or that it will be assumed that the local area has already accepted the negative implications of their business endeavor.

Thus, while the presence of a landfill might influence the type of new businesses which would locate nearby, it cannot be said with any certainty that the landfill compatible businesses will produce any fewer jobs or any smaller tax base than those businesses which might have come had the landfill not been built. As a consequence, unless this can be shown not to be the case, then it will be assumed there is no cost associated with a landfill because it reduces overall economic development on nearby properties.

4.0 Higher Value Use of Site

4.1 Introduction

It has been suggested that there are higher value uses of the Banks property which will benefit the county far more than a landfill on this site. While this may be true, provided the proposed use is consistent with zoning and the Future Land Use Map (FLUM), it is generally not the role of government to approve or deny a land use simply because there may be other uses which might generate more jobs and higher ad valorem taxes. Nonetheless, if government is being asked to make exceptions to current zoning and future land use designations and/or are being asked to approve variances and conditional uses, then taking into consideration the benefits of a non-conforming land use versus a conforming one may be appropriate. However, it is not the purposes of this analysis to make a determination on this issue one way or the other. Rather, if local government determines that such a comparison is a valid consideration in its decision as to whether to rezone and approve variances, then this section provides some sense of the benefits of alternative land uses compared to a landfill.

4.2 Waste-to-Energy Facility

The Elbert County Commission has recently approved a waste-to-energy facility to be sited approximately 5 miles west of Elberton. The Northeast Georgia Regional Commission has determined that this facility is in the best interest of the region and the state. This facility is expected to come on line in 2013. If operated as projected, it will process 1,600 tons of material daily into energy. Of this 800 tons on average will be MSW with the remaining 800 tons coming from wood products which will be purchased. The facility will have a 100 acre landfill for the disposal of ash. It is estimated that the assessed value of the facility will be \$160 million which in Elbert County will increase County and School ad valorem tax revenues by \$1.7 million annually. A key issue which will be evaluated by EPD during the State permitting process is air quality with odor apparently not being an issue. (Information received in telephone conversation with Bob Thomas, Elbert County Manager.)

Obviously, based on this information it is not possible to determine whether such a waste-to-energy facility would be either economically or environmentally appropriate for the Banks property. However, if it were, then there are significant potential financial benefits which might be gained by the county if this approach to waste disposal could be undertaken vs. that which is proposed.

The landfill proposed for the Banks property is expected to be assessed at \$6.5 to \$13.7 million. This would generate \$54,000-110,000 additional annually in County and School ad valorm taxes above that now being collected from the property after the cost of associated government services et al are deducted. Assuming a waste-to-energy facility in Morgan County would be of roughly the same size and value as that in Elbert County, then the assessed value for such a facility would be 12 to 25 times greater than the landfill now proposed for the Banks property. A waste-to-energy facility on this site would generate an additional \$1.6 million annually in ad valorem taxes, or a net benefit to the County and School budget of \$1.2 million after taking into consideration its demand for government services, infrastructure, and infrastructure maintenance (using the Dorfman study). In other words, the tax benefits alone for such a waste-to-energy facility exceed by nearly 20% even the most optimistic benefits scenario for the proposed landfill. When other benefits are considered such as the potential closure of the transfer station, lower disposal costs for local commercial waste generators, and lower disposal costs of exempt garbage, the benefits associated with even just the Most Likely scenario exceed \$1.7 million annually for such a waste-to-energy facility.

There is also one other potential benefit of such a facility. As referenced above, this waste-to-energy operation intends to purchase 800 tons of wood products to combine with 800 tons of MSW. While an analysis of the local timber and wood products industry has not been made, this facility could conceivably provide a new local market beneficial to Morgan County landowners, timber harvesters, and others involved in the industry. This potential benefit has not been estimated.

Again, it should be stressed that none of this suggests that the Banks property would be an ideal site for a financially feasible waste-to-energy facility like the one to be built in Elbert County. However, it does suggest that a landfill on the Banks site may be a low economic return use of this land from the county's perspective.

4.3 Industrial Development

Two years ago the Banks family sold several hundred acres to the Patillos, who have now rezoned the land and are marketing it as an industrial park (Stone Mountain). According to a February 23, 2010, letter from the developer, this 324 acres will be used for first class light industry. At build-out it is projected that 2.5 million square feet will have been constructed, over 500 jobs will have been created, and the total investment will be \$200 million (which would be assumed as the assessed value). As Stone Mountian Industrial Park is within the same land use designation on the Future Land Use Map and is just north of the proposed landfill site, it might reasonably be assumed that one day the Banks landfill site could alternatively have been developed in a similar manner.

The issue, however, is timing. The Banks are proposing a use now (even though they do not have a confirmed landfill operator at this time) whereas there is no currently interested party for the purchase and development of the landfill site for light industry or other similar use. Additionally, there are already existing industrial properties on the market in the greater Madison area (to include Stone Mountain) which have not been developed and with little expectation of that occurring in the immediate future. Thus, any assumptions as to the possible benefit of using the proposed landfill site for other industrial uses must factor in lag times in order to be able to fairly compare them with what the Banks are proposing at this time.

For purposes of this analysis, Table 8 summarizes for three scenarios when development might begin on the proposed landfill site for light industry or other similar uses and how long it might take before build-out would occur. The table also presents what this might generate annually in 2010 dollars in additional ad valorem taxes net of additional government costs to support such development (again based on the Dorfman study).

Table 8. *Additional Net Tax Revenues from Banks Landfill Site if Used for Light Industry*

<u>Scenario</u>	<u>Development</u>		<u>30 Year Project Life Net Benefit (2010 \$)</u>
	<u>Year Begun</u>	<u>Build Out</u>	
Conservative	2021	10 years	\$30.75 million
Optimistic	2031	20 years	\$10.10 million
Most Likely	2026	15 years	\$19.50 million

Notes: (1) Perhaps counter-intuitively, as this is being compared to the benefit of the landfill, Conservative means that it will take the shortest time to begin and develop the site for the alternative use and Optimistic is that it will take the longest.

(2) While the above benefits are net of required government costs for support for the alternative development, it is not net of the positive ad valorem tax benefits from the site as a landfill. Thus, for this net number vs. its use as a landfill, \$1.61 million should be deducted from the Conservative scenario, \$3.29 million from Optimistic, and \$2.18 million from Most Likely.

Essentially, using these assumptions, developing the Banks site for light industrial would be expected to generate \$10.1 to \$30.8 in additional ad valorem taxes net of government services, infrastructure, etc., with \$19.5 million being the most reasonable order of magnitude. These benefits might be compared to those found for the landfill in Table 12, Part I, Benefits, which include the net ad valorem tax benefits from the Banks property if used as a landfill. If this comparison is made, ad valorem tax benefits to be generated by the site as a landfill do not need to be deducted here unless one wishes to compare this

factor alone. If that is the case, then the second note at the bottom of Table 8 reflects how much this adjustment would be.

(Note: The preceding analysis does not address the potential multiplier effects of 500 employees for use of the site as light industrial vs. perhaps no more than 10-15 for its use as a landfill.)

5.0 Ad Valorem Taxes after Closure

As was referenced in Part I, Benefits, courts have ordered that landfills must be assessed based on the income valuation approach. That being the case, there is a concern that once the proposed landfill closes in 35 years, its income stream will fall to zero or near zero. As a consequence, instead of generating \$54,000-110,000 in net ad valorem taxes annually in 2010 dollars, the property may only generate a fraction of this. This is a legitimate concern. However, the implications of this are difficult to assess. There are scenarios where there may be no decline in tax revenues once the landfill can no longer accept new garbage. For example, landfills are presently being mined. As that technology develops, after 30 years, it may be that there will be a reverse flow of waste from the site which generates an income which helps maintain ad valorem taxes generated by the site. Additionally, it could be that methane can be tapped and turned into energy with the same result. Another possible option might be a waste-to-energy facility similar to that proposed in Elbert County which mines the site. Thus, while those concerned about this potential long term loss in ad valorem taxes may well be correct, there are alternatives where this might not be the case. Therefore, for purposes of estimating the potential costs (or losses in revenues) associated with the proposed landfill, this one will not be included.

6.0 Government Services, Infrastructure, and Infrastructure Maintenance

Any new development typically requires some level of additional expenditures on the part of government. These may relate to services or infrastructure. It is known the proposed landfill will require the paving of Indian Creek Road. It is also assumed that one or more intersections on US 441 may require reengineering and/or lights. With additional truck traffic, certain roads may have to be repaved more frequently. It could be that roadside cleanup costs in the county will increase from litter escaping from trucks hauling waste to the landfill.

In the Banks application it was stated that the cost of paving Indian Creek Road would be borne by the applicant. It is possible that some of the other up-front improvements or modifications (e.g., the intersections) can be negotiated to be paid for by the applicant. More importantly, however, the landfill will generate ad valorem taxes annually which will be used to pay for improved government services and infrastructure related costs. According to Dorfman, non-residential land uses pay more in taxes than they receive in government benefits. Barring some environmental disaster (see below), it would be expected that a landfill would pay more in taxes than it would receive in benefits. In fact it would seem probable that a landfill with the projected traffic counts would cause less

wear and tear on roads than if the property were developed for most alternative uses. Thus, it would need to generate fewer taxes (which it will) to pay for road maintenance.

In light of the willingness of the applicant to pay for major up-front public infrastructure requirements, for purposes of this analysis, it will be assumed that ad valorem taxes paid by the landfill will more than offset any increase in government costs it might cause by its presence.

7.0 Government Monitoring, Enforcement, Inspections

While there are those who suggest that government monitoring, inspections, and enforcement associated with landfill related activities are a potential source of revenues, there are others who feel this will be an additional cost burden for government if the landfill is built. For purposes of this benefit-cost analysis, it will be assumed that local government will attempt to charge in the form of fees, penalties, fines, or other means at levels sufficient to cover the cost of undertaking the necessary monitoring, inspections, and enforcement associated with any landfill built in Morgan County. Thus, there should be no negative financial effect on local government budgets (and thus taxpayers) if this is done properly.

8.0 Environmental Studies

Presently when property is bought and sold Phase I and Phase II environmental studies are sometimes undertaken. This is generally done for properties with known past uses which may have caused an environmental problem that could limit use or result in expensive cleanup, e.g., dry cleaners, gas stations, chemical storage or manufacturing facilities. In addition to the property on which the at-risk activities actually took place, if there is any risk that the problem could have spilled over to adjacent properties, these too often have environmental studies before they change hands or secure loans. Increasingly such studies are undertaken if there is even a hint of a potential environmental problem.

Properties with active or closed landfills fall into the category of properties for which such studies will be conducted before the property is bought or sold. As is well known, there are numerous landfills which have caused or are now causing environmental problems. However, it is not the actual landfill site itself which is of potential concern in this respect. It is those properties adjacent to such landfill sites which may not have had such studies conducted if the landfill did not exist. The environmental problems which have occurred associated with landfills typically over time do not confine themselves to the landfill site itself but spill over to adjacent properties.

Fortunately landfill technology has improved over time. Previously no landfills were lined. Now all new MSW landfills (to include the proposed landfill) are lined. However, there have been failures of these liners. While the liner technology continues to improve, there is no assurance that (1) the liner may not have been improperly installed or (2) over an extended period of time the liner may fail for reasons not now understood. Even if neither of these were to occur, a prudent owner or purchaser of a property in proximity to

a landfill will likely feel compelled to undertake an environmental study as an insurance policy. For the seller it will be a form of protection that the buyer will not come back at some future date if a problem is found. For the seller it will be protection against buying a property which may have an expensive clean-up problem associated with it. Additionally, if a lender is involved, such studies will likely be required.

As a consequence, for purposes of this analysis, it will be assumed that there will be an increase in the number of Phase I and Phase II environmental studies undertaken in Morgan County if the proposed landfill is built. Once the landfill is operational, it would not be unreasonable to assume that an environmental study will be undertaken on property near the landfill every time a real estate transaction takes place or a loan secured. As one moves further from the landfill, the incidence of such studies would be expected to decline unless a problem has been detected. For purposes of this study, Table 9 reflects the assumed

percentage increase in environmental studies which will occur if the landfill is build on the Banks property. (Note: No data was readily available which reported on such increases on properties near landfills. However, given an existing problem with the closed Morgan County landfill which will heighten fears even though it was unlined and given the increasingly litigious nature of Americans and the desire to protect against possible litigation, it is felt that with the coming of the proposed landfill, there will be an increase in environmental studies beyond what may have been found by any studies which might be available. Nonetheless, it should be understood that these percentages are simply rough estimates to provide some sense of the financial implications of this cost parameter.)

Table 9. Increase in Properties Conducting Environmental Studies at Various Distances from the Proposed Banks Property Landfill

<u>Distance</u>	<u>Total Properties</u>	<u>Additional Properties Conducting</u>	
		<u>Phase I</u>	<u>Phase II</u>
0-1.0 miles	128	90%	20%
1.1-2.0 miles	462	50%	5%
2.1-5.0 miles	3,100	2%	0

The cost of such environmental studies can vary tremendously depending on the size of the property, its former known uses, and the number and types of tests which might be undertaken. For purposes of this study, \$2,000 will be used for a Phase I study and \$5,000 for a Phase II study. These are based on quotes to a local property owner several years ago and may be greater or less than this for any single study conducted in the future because of a property's proximity to the landfill.

Another factor which must be determined before estimating this potential cost is the frequency such studies will be undertaken. Generally such studies are undertaken in one

of three situations: (1) there is a known problem at the landfill and a property owner is attempting to determine what actions (legal or otherwise) he or she should take if the problem now exists on their property, (2) a sale is anticipated, or (3) financing with the property as collateral is being negotiated. The third of these will be used as a proxy for the cost calculation. While data was not readily available for Morgan County, on a national basis, according to one source, on average over time, loans are secured on a property every seven years. This seven years will be assumed as the average frequency environmental studies might be required, i.e., each property in the three bands will average one loan or sale very seven years and, thus, may require an environmental study at that time. Table 10 presents the projected increase in expenditures due to such additional studies which will be borne by properties owners within the three bands.

Table 10. *Increased Annual Expenditures on Environmental Studies at Various Distances from the Proposed Banks Property Landfill*

<u>Distance</u>	<u>Additional Properties Conducting</u>		<u>Annual Cost</u>
	<u>Phase I</u>	<u>Phase II</u>	
0-1.0 mile	16	4	\$ 52,000
1.1-2.0 miles	33	3	81,000
2.1-5.0 miles	<u>9</u>	<u>0</u>	<u>18,000</u>
Total	58	7	\$ 151,000

As stated above, these are rough approximations and could vary significantly from the estimates in Table 10. Thus, it is worthwhile to provide a range that is at least 50% greater and 50% less than this estimate. Using those parameters, the Conservative scenario (i.e., that which would have the greatest cost effect if the landfill were built) might result in an annual increased cost for such studies of \$226,500 and the Optimistic scenario (the least effect) of \$75,100 annually. It is assumed that the cost of environmental studies will increase at the rate of inflation. Thus, these estimates can be assumed to be in 2010 dollars. It should be noted that if at any time an environmental problem is found associated with the landfill, the numbers of such studies and their cost will likely increase significantly beyond these estimates.

9.0 Local Economy/Tourist Industry

There is a broad based fear in Morgan County, especially in the city of Madison with its historic based tourism, that the presence of a regional landfill may severely harm the local economy. The reasoning seems to be as follows: The success of tourism is generally based on both image and reality. While the reality of the area's historic resources does not necessarily change because of the construction of landfill (although it

could if the economy did eventually decline and historic properties were not saved or maintained), the image of Madison might. Rather than being perceived far and wide as “that beautiful little historic town,” it might gain a reputation as “that town where the massive landfill is located.” While people might wish to visit a historic town, they might not wish to visit a town perceived of as dominated by a landfill.

Additionally, there are also concerns about the reality changing with respect to the experience of a visitor to Madison who will then relate that experience to others. If the smells of the landfill did reach Madison’s historic district, then this may be the experience taken away by the visitor. If trucks carrying garbage to the landfill through Madison’s downtown increased litter, emitted noxious odors, or leaked “garbage juice,” all of which can occur, the experience of tourists and downtown shoppers can be degraded.

In a letter to Chuck Jarrell dated April 23, 2010, from Harold Buckley of Alston & Bird, attorney for the Banks family, Mr. Buckley makes two key points. First, with respect to garbage trucks moving through the historic district, he states that either such trucks will use the bypass or, due to the presence of landfill facilities to the north of Morgan County, it is unlikely trucks from Walton, Oconee, Clarke, or Oglethorpe counties will use the proposed landfill and will not transit through the heart of Madison. Second, he states that in Chatham County where Savannah has a vibrant historic district with a successful tourist industry just as does Madison, there are more than 30 active or closed waste management facilities which do not seem to have harmed tourism.

While Mr. Buckley may be correct in both instance (that neither the presence of a landfill or potentially increased garbage truck traffic pose a problem for Madison’s tourist industry), he did not explore either of these issues in any detail. While it may well be that truck traffic through the heart of Madison will not pose a problem initially, there is no certainty this will remain the case for the next 35 years (the permitting/construction period plus the operational life of the landfill). As pointed out in the rezone application, part of why it is said Northeast Georgia needs such a landfill is that the average projected life of remaining landfills may be inadequate to meet the requirements of the region. Thus, some of the landfills referenced by Mr. Buckley may close over the next 35 years and some of the garbage now going to those facilities could move south through Madison to the proposed landfill on the Banks property.

As for the 30 or more solid waste facilities in Chatham County, Mr. Buckley provides no information on these facilities with respect to size, materials received, locations, etc. Research has shown that very small landfills tend to have fewer negative effects on surrounding properties or communities. Transfer stations (which are solid waste facilities) also tend to have fewer effects. Closed landfills without any odor, dust, light, etc., would not have the same potential effect as an open landfill. C&D landfills also tend to have fewer problems overall for neighbors than MSW facilities. Additionally, location is always key. Mr. Buckley does not relate how far any large, active MSW landfills are to Savannah’s historic district. Thus, while Chatham County may provide an example as to where a landfill such as the one proposed in relatively close proximity to a

historic district (less than 3.5 miles) will not cause a problem for tourism, this cannot be determined from the information he provided.

Thus, at this point in time, there is not strong data to support either side of this issue. Ideally, what could be done would be the conduct of a study which (1) undertook a bibliography search to see if any comparable situations could be found similar to that which Madison faces, (2) evaluated other historic districts which have open MSW landfills within a five mile distance (such as possibly Chatham County conditions), and (3) interviewed tourists to Madison to see if there would be an appreciable negative response if some of the problems raised (odor, litter, leakage) would have influenced their decision to visit, stay, or report back to friends and family. Without such information, it is difficult to either negate this as a possible risk to the county or to estimate its effects if it is likely to occur. Thus, for purposes of this analysis, this important factor must be simply considered an “unknown.” However, given its importance, the County Commission may wish to require that studies be conducted before a final decision regarding the proposed landfill is made.

10.0 Environmental Cleanup/Water Supply Replacement

Another fear which has been articulated with financial implications is that, even with state of the art technologies being employed, accidents or breakdowns can happen at a landfill whereby a longstanding environmental problem occurs which requires expensive cleanup and/or the provision of alternative access of landfill neighbors to a non-polluted water source. There seem to be two financially-related concerns. First, the problem might be so expensive to correct that the landfill cannot absorb the cost and simply goes bankrupt. Second, the problem occurs after landfill closure and the original owner/operator is no longer around to be responsible for correcting the problem. Thus, the burden falls on local government and, thus, local taxpayers.

Both of these are legitimate concerns. However, calculating the financial implications for the county is difficult. First, it would be surmised (without this being an area of the author’s expertise) that the landfill company can purchase appropriate insurance or performance bonds which would cover such costs were they to be incurred while the landfill is in operation. It is not known if there have been instances where a landfill company has been required to fund an account whereby the returns on this account would be sufficient to continue to pay premiums on such a policy or bond indefinitely into the future after landfill closure. If that is not reasonable, then the cost to the county of this factor would be the cost of such premiums if paid for by the County to protect against future problems.

Without this information, as with the preceding factor, the potential cost will simply be indicated as “unknown.” However, the County Commission may wish to explore this further in order to determine that there are ways this risk can be reasonably paid for by the landfill owner/operator or, if not, what the future cost to the county might be to protect against this occurrence.

11.0 Summary

Table 11 summarizes estimated potential costs to Morgan County if the proposed landfill on the Banks property is undertaken under three scenarios: Conservative, Optimistic, and Most Likely. As these costs will be compared to the projected benefits associated with the proposed landfill, in the cost evaluation, Conservative reflects the more significant negative effects which might occur and Optimistic the less significant. The reason is that a *range* is being established as to potential impacts for the county if the landfill is built. If one were to reverse the Conservative and Optimistic estimates for costs, it would inappropriately narrow the reasonable range of possible outcomes, both positive and negative.

**Table 11. Proposed Banks Property Landfill
Average Annual and 30 Year Costs Expressed in 2010 Dollars**

<u>Category</u>	<u>Conservative</u>	<u>Optimistic</u>	<u>Most Likely</u>
Ad Valorem Tax Losses	\$ 377,800	\$ 149,000	\$ 244,300
Reduced Nearby Development	0	0	0
Ad Valorem Tax Loss after Closure	0	0	0
Govt. Services/Infrastructure	0	0	0
Govt. Monitoring/Enforcement	0	0	0
Increased Environmental Studies	226,500	75,500	151,000
Decline in Local Economy/Tourism	Unknown	Unknown	Unknown
Environmental Cleanup/Water	<u>Unknown</u>	<u>Unknown</u>	<u>Unknown</u>
Total Direct Costs: Annual	\$ 604,300	\$ 224,500	\$ 395,300
30 Years	\$ 18,129,000	\$ 6,735,000	\$11,859,000
Diminution in Property Values	<u>88,304,000</u>	<u>33,928,000</u>	<u>57,362,000</u>
Total Costs (30 Years)	\$106,433,000	\$40,663,000	\$69,221,000
Less: Property Tax Loss	<u>11,334,000</u>	<u>4,470,000</u>	<u>7,329,000</u>
Total Costs to Morgan County	\$ 95,099,000	\$36,193,000	\$61,892,000
Higher Value Land Use	\$30,775,000	\$10,100,000	\$19,500,000

Based on the results of this evaluation, in 2010 dollars, the direct costs (not potential property value diminution) to Morgan County which might be incurred if the proposed landfill is built would be an average annual low of approximately \$225,000 to a high of possibly \$604,000. However, the more probable outcome in terms of costs would be in

the range of \$395,000. For the 30 year period of the proposed landfill's life, this would result in a range of \$6.7 to \$18.1 million with \$11.9 million being the most likely order of magnitude of these costs to county residents.

Additionally, if the proposed landfill is built, it would decrease existing property values of landowners within five miles of the facility by a range of \$33.9 million to \$88.3 million with the most probable diminution of property values being closer to \$57.4 million. These estimates do not adjust for an increase in property valuations for the proposed landfill site of \$3.6 million to \$10.4 million with \$6 million being the more expected value (but which have been reflected in Part I, Benefits).

If the landfill site were used for light industry or other similar uses, it might generate \$10.1 million to \$30.8 million in additional property taxes (adjusted for increases in government costs) with \$19.5 million being the more likely order of magnitude. This would need to be offset by the potential financial benefits of the landfill. (Note 1: It is not appropriate to add this loss in potential tax revenues to the other costs noted. If the landfill is not built so this alternative can be undertaken, then all the assumed negatives associated with a landfill in this location do not occur. Note 2: These figures do not include any assessment of the benefits or costs associated with 500 employees for light industry at this site vs. the 10-15 if a landfill if built there.)

With respect to potential annual property tax losses, the lower end of the spectrum would be \$149,000 to a high end of \$378,000 with \$244,000 being the more probable magnitude. These lower property taxes help mitigate the diminution of values reflected for Morgan County property owners. (Note: The increased cost of environmental studies does not affect tax receipts as these costs will be borne by property owners.) This might mean that at the low end a residence in Morgan County would have to pay another \$4.50 annually in property taxes to a maximum amount of \$11. The most likely situation would be that each home would pay about \$7 additional annually in property taxes. Of the tax revenues lost because of the landfill, 55.1% of those will be by the Schools, 35.7% by the County, and 9.2% by the City of Madison. As with property assessments, the preceding estimates do not take into consideration additional tax revenues which will be generated by the landfill over and beyond associated government costs (see Part I, Benefits). A comparison of these will be presented in the executive summary of the study.

Two points should be made in closing. First, as a companion study to this one (as referenced several places in the above text), the author has also evaluated potential financial benefits of the proposed landfill if it is approved and built. When these are compared (the benefits and costs), it is possible to have a more balanced picture of the potential financial implications of the proposed landfill for the county and its residents.

Second, the Conservative and Optimistic scenarios calculated in this study are by no means the absolutely most conservative or most optimistic possible. Other assumptions could be made which would cause the estimated range of costs to be less or greater. Nonetheless, it is felt that the estimates presented are reasonable parameters within which discussions as to the financial costs associated with the proposed landfill can take place.