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Solid Waste Management Industry

Summary

This rating methodology explains Moody's approach to assigning credit ratings to companies in the non-hazardous solid waste management industry. The methodology quantifies the key factors we consider when rating debt within the industry and explains how these factors are applied in rating companies in this sector. The goal in creating this document is to enable readers to gauge a company's likely rating within two notches.

The solid waste management rating methodology includes four broad rating factors:

- 1. Scale and Diversification**
- 2. Profitability and Cost Efficiency**
- 3. Cash Flow and Interest Coverage**
- 4. Leverage**

These four rating factors encompass 12 specific elements or sub-factors that are discussed in detail in this report.

About the Rated Universe

Moody's rates eight solid waste management companies with approximately \$25 billion of debt. All of the currently rated companies are based in North America. These solid waste companies operate within a \$46 billion market and the largest three (Waste Management, Allied Waste and Republic Services) have almost 50% of this market. The debt-weighted average rating of the solid waste industry is Ba2, using the Corporate Family Rating for speculative grade issuers and the senior unsecured rating for investment grade issuers, as we will do when referring to existing ratings throughout this document. Two of the eight companies, (Waste Management and Republic Services) have investment grade senior unsecured ratings.

The rated companies are listed below:

Company	Sr. Unsecured/ Corporate Family Rating	Outlook	Domicile	Total Debt (\$Millions)
Republic Services, Inc.	Baa2	Stable	U.S.	\$2,247
Waste Management, Inc.	Baa3	Stable	U.S.	11,000
Waste Connections, Inc.	Ba2	Positive	U.S.	1,080
Casella Waste Systems, Inc.	B1	Stable	U.S.	551
IESI Corporation	B1	Stable	U.S.*	590
WCA Waste Corporation	B1	Stable	U.S.	242
Allied Waste Industries, Inc.	B2	Positive	U.S.	8,640
Waste Services, Inc.	B3	Stable	U.S.	317
Total				\$24,667

** IESI Corporation is an indirect subsidiary of BFI Canada Income Trust, a Canadian company*

Industry Overview

A RECESSION-RESISTANT INDUSTRY

The non-hazardous, solid waste management sector is relatively recession resistant. A large and relatively stable volume of business and residential waste is generated each year. The Environmental Protection Agency (EPA) estimates that in 2005, U.S. residents, businesses, and institutions produced more than 245 million tons of municipal solid waste, which is approximately 4.5 pounds of waste per person per day. Per capita generation has been relatively stable over the last 15 years. The 245 million ton figure does not include other materials that may be disposed in landfills, such as construction and demolition debris, municipal wastewater treatment sludge, and non-hazardous industrial wastes. Moody's estimates that construction and demolition debris in the same period was about 150 million tons. By contrast, the hazardous waste sector, which is not covered by this methodology, accounts for about 40 million tons a year. Mining and agricultural waste is also not included in the figures above.

Disposal in the U.S. is primarily through landfills rather than incinerators. Incinerators are the preferred method of disposal in many European countries and in Japan, where land is scarce and at a significant premium.

In the U.S., close regulation of the waste management industry creates substantial barriers to entry and limits the supply of permitted disposal facilities. This is a major contributor to pricing power for solid waste management companies, which benefit from the ownership of valuable, permitted landfills and the expertise to operate and expand these assets. Of the total waste generated in the U.S., including construction and demolition debris, Moody's estimates that about 25% is recycled, 9% is incinerated and 66% ends up in landfills¹.

Until the late 1970s, each U.S. city or town typically operated its own landfill, with private companies attempting to gain market share. The advent of the Resource Conservation and Recovery Act of 1976 (RCRA 1976) and other environmental legislation led to a reduction in the number of landfills, an increase in their size, substantial increases in tipping fees and a substantial shift to a private, for-profit waste disposal model. The number of municipal solid waste landfills in the U.S. declined from over 6,000 in 1990 to about 1,650 in 2005, excluding construction and demolition only landfills². Although the majority of landfills are still public, the bulk of disposal capacity is private.

The fragmented, privately owned, portion of the industry experienced high levels of consolidation activity in the late 1990s. A number of companies continue to seek significant growth through acquisition, but large transactions have not been the norm over the last five years. Moody's does not expect substantial additional consolidation in the near to medium term. There are still a substantial number of small operators, particularly on the collection side where barriers to entry are not as significant. Most companies continue to seek route densification and asset optimization opportunities through "tuck-in" acquisitions and asset exchanges.

1. Moody's estimates based on Environmental Protection Agency and industry information

2. Source: Environmental Protection Agency

PERFORMANCE MODULATED BY ECONOMIC AND DEMOGRAPHIC INFLUENCES

Financial performance tends to be fairly stable and is affected primarily by external demand factors that include overall economic activity, population growth, and construction/demolition activity, as well as by supply factors that include legislative and permitting issues, labor and subcontractor costs, and fuel and transportation costs.

Overall economic activity

Waste companies generate cash flows through the collection and disposal (including recycling) of solid waste, which is a by-product of economic and everyday living activities. The volume of waste created by businesses and households depends to some extent on economic growth and the business cycle.

Solid waste includes:

- “**pre-consumer waste**”, including construction and demolition waste and byproducts generated by factories, and
- “**post-consumer waste**” which includes normal household waste.

Pre-consumer waste tends to be more homogeneous (since there are typically only a few different types of waste in the production process) and more easily recycled, while post-consumer waste — which includes packaging and food remnants — is more varied and less amenable to recycling efforts.

Population growth

In addition to economic activity, waste generation tends to be closely linked to population changes. For this reason, the fastest growing and, typically, more profitable waste collection and disposal businesses in the U.S. tend to be concentrated in states with faster-growing populations, including California, Arizona, Texas, Florida, Georgia and North Carolina and, to a lesser extent, neighboring states in the West and the South.

Assuming per-person disposal volumes remain broadly constant, long term industry growth in the U.S. will likely be in line with population growth and increases in GDP, which would result in top-line internal growth of about 3% to 4% per year for the average company in this industry sector.

Construction and demolition activity

The industry is particularly affected by construction and demolition. Although these can be expected to follow the economic cycle, commercial and residential construction cycles are very sensitive to interest rate levels and may result in considerable volume and revenue fluctuations over time and across regions.

Demolition activity tends to be higher in the summer months, resulting in higher volumes and revenues in the second and third quarter. Weather conditions, however, can disrupt operations and aggravate seasonal fluctuations. Also, although the 2005 severe hurricane season generally boosted revenues for companies involved in clean-up efforts, clean-up activities tend to be lower margin.

Legislative and permitting issues

In general, landfills that collect household waste are regulated by state and local governments. The EPA has, however, established minimum operating criteria for landfills. For example, the only hazardous waste that municipal landfills can accept is household hazardous waste and certain other waste that is exempted from hazardous waste regulation.

The ability to manage environmental regulations and, also, environmental activism at the community level are core competencies for companies in this sector. Such competencies are key to companies' efforts in obtaining landfill permits, permit expansions with respect to the type, volume and geographical source of waste, and managing environmental liabilities and landfill retirement obligations. Delays in obtaining landfill permits constitute significant credit events, particularly for small companies.³

3. For example, delays were the cause of a two-notch downgrade of Waste Services in 2004, which was subject to permit-related delays with respect to key transfer stations in Florida.

Key Rating Issues Going Into the Next Decade

POTENTIAL MARGIN VOLATILITY

Labor is the largest single cost component for the industry, with about 20% to 30% of total costs typically attributable to labor. In a tight labor environment, waste companies face margin pressure unless market conditions allow higher costs to be passed through to customers. Although the waste companies rated by Moody's are not heavily unionized, union membership increases the potential for business disruption and, in some cases also results in exposure to multi-employer pension plan liabilities.

ENVIRONMENTAL AND ENERGY COSTS

Waste companies operate extensive fleets of collection trucks and other vehicles, and are thus affected by fuel costs as well as regulatory costs, including, for example, tighter EPA emission standards for on-road use of new heavy duty engines. Energy prices are a concern in the industry, although most companies make extensive use of fuel recovery fees that are indexed to the price of oil and passed on to customers. When oil prices rise, the fuel recovery fee tends to preserve dollar profitability rather than margins, since companies are unable to charge a margin on the fee itself. The industry is also characterized by extensive use of subcontractors who provide third party disposal fees and transportation services. These costs also tend to be linked to the price of fuel.

Given this background, profitability and operating efficiency characteristics tend to center on a company's regional concentrations and configurations of assets, the quality and quantity of disposal assets (including both landfill and transfer stations), the age of its fleet and related maintenance programs, route density and, importantly, the presence of competitors in key markets, particularly on the landfill side.

IMPROVED PRICING ENVIRONMENT ACROSS THE SECTOR

The pricing environment for solid waste is currently favorable, which is expected to continue over the next several years because the major players are no longer competing head-to-head on the basis of price alone.

Management changes in some of the largest companies over the last several years have contributed to an increased focus on profitability and return on capital in contrast to the prior focus on volume, revenue or EBITDA metrics alone. Although the industry is currently operating in relatively favorable conditions, it remains highly competitive. Also, municipal, commercial, and industrial customers are typically committed to getting value for their taxpayers and shareholders. As a result, price will remain an important competitive consideration in awarding contracts and, as waste companies seek to grow, price increases are expected to move largely in line with inflation.

A GENERAL TREND OF STABLE OR IMPROVING CREDIT QUALITY

The outlook for the solid waste management industry is stable. The industry is recession resistant, although it has some dependence on construction and demolition activities. The stable outlook for the sector is further supported by long term expectations for economic growth and a generally favorable solid waste pricing environment.

Industry themes that may constrain the credit outlook include high indebtedness and the need for substantial capital expenditures. The industry norm for capital spending is 10%-12% of revenues, and reductions below this level may not be sustainable. The experience of Allied Waste in 2004 highlights the fact that that even moderate, sustained underinvestment in the fleet and landfills can lead to significant catch-up expenditures.

Other industry-specific credit concerns, include: i) uncertain environmental liabilities, both those that are reported on the balance sheet and those not reported on the balance sheet, ii) potential labor cost increases when the unemployment rate is low, iii) fluctuations in fuel, transport and subcontractor costs that companies may not be able to pass on either as a result of competition or because of the nature and term of the contracts in place and, iv) financial policies that are not balanced with the interests of creditors.

Of the eight companies in the industry that are currently rated by Moody's, only five have rating histories dating to before 2001. Only one company (Republic Services) was investment grade at that time and the average rating for the group was between Ba2 and Ba3. The current average rating for the same sample of companies is closer to Ba2.

About this Rating Methodology

The rating methodology for solid waste management companies consists of five steps as follows:

1. IDENTIFICATION OF THE KEY RATING FACTORS

As noted in the summary above, Moody's ratings focus primarily on the following rating factors:

1. **Scale and Diversification**
2. **Profitability and Cost Efficiency**
3. **Cash Flow and Interest Coverage**
4. **Leverage**

This methodology includes a review of each factor and an explanation of its importance to the rating.

2. MEASUREMENT OF THE KEY RATING FACTORS

We next explain the metrics or "sub-factors" we use to define each of the four rating factors cited. There are total of twelve such sub-factors. These employ a combination of historical financial information and other measurements⁴.

Table 2 below shows the weighting that is placed on each broad rating factor and sub-factor. The weights on the factors and sub-factors sum to 100% and produce a methodology indicated rating.

Broad Rating Factors	Broad Factor Weighting	Rating Sub-Factor	Sub-factor Weighting
Scale and Diversification	12.5%	Revenue	5.0%
		Tonnage in Period	2.5%
		Number of Landfills and Transfer Stations	5.0%
Profitability and Cost Efficiency	25.0%	EBIT/Ton	7.5%
		EBITA/Avg Total Assets	7.5%
		Revenues / Employee	5.0%
		Cost / Ton	5.0%
Cash Flow and Interest Coverage	30.0%	EBIT/Interest	15.0%
		FCF / Debt	7.5%
		CFO / Debt	7.5%
Leverage	32.5%	Debt/ EBITDA	25.0%
		[EBIT(1-Tax Rate)/Tonnage in Period x Total Capacity] / Total Liabilities	7.5%
Total	100.0%	Total	100.0%

Note: Tonnage and tons refer to tonnage disposed in company-owned or company-operated landfills, whether or not the waste is derived from the company's own hauling business. In some cases, Moody's estimates these quantities based on assumed compaction rates to convert from volume to weight. EBIT(1-Tax Rate) is a proxy for net operating profit after tax. We use 37.5% as a standardized long-term average tax rate for the industry. Landfill capacity may be a reported figure or a Moody's estimate based on assumed compaction rates to convert volumes to weight.

We use gross debt rather than net debt because cash balances may include working cash that has to remain in the business or balances accumulated to fund specific initiatives. All measures incorporate Moody's standard adjustments to income statement, cash flow statement, and balance sheet amounts for (among other things) on and off-balance sheet items, under-funded pension obligations, and recurring operating leases. Asset retirement obligations and environmental remediation liabilities are generally viewed as non-debt obligations of the various operating subsidiaries.

4. We note that the rating process makes use of both historical and projected financial results. Historical results of operations help us understand the pattern of a company's performance and how it compares to others. Historical data help us to, among other things, look through the earnings volatility associated with the business cycle and evaluate whether projected future results are realistic. While the rating process makes use of both historical and projected financial results, this document makes use of only historical data for illustrative purposes.

3. MAPPING FACTORS TO THE RATING CATEGORIES

After identifying the measurement criteria for each factor, each company is then mapped to an indicated rating according to its performance on the specific factor under discussion. The weighted average of the sub-factor ratings produces the indicated rating for each factor and the overall methodology-indicated rating as discussed in Step 5 below.

4. OUTLIER DISCUSSION

Companies that are positioned higher or lower on a specific factor than is indicated by its actual rating level are identified as “outliers” for that factor. Specifically, a company whose performance on a specific rating factor is two or more rating categories higher than the actual rating is deemed to be a *positive* outlier for that factor. Similarly, a company whose performance is two or more categories below the actual rating is deemed to be a *negative* outlier.

This document provides discussion of the general reasons for such outliers for each factor.

5. DETERMINING THE METHODOLOGY INDICATED RATING

To determine the rating, each of the 12 sub-factor ratings is converted into a numeric value based on the following scale:

Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3
1	2	3	4	5	6	7	8	9	10

Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3
11	12	13	14	15	16	17	18	19

Each sub-factor’s numeric value is multiplied by an assigned weight that reflects its relative importance and the resulting products are summed to arrive at an aggregate numerical value for each of the four rating factors and the overall total. The resulting weighted numerical outcomes are mapped to alpha-numeric indicated ratings for each of the four rating factors and the overall numerical value is mapped to an indicated rating for the company.

Non-integer numerical values are mapped to alpha-numeric ratings based on where the score falls in the ranges shown below:

Mapping For Composite Rating, Factor and Sub-factor Indications			
Indicated Rating	Aggregate Weighted Factor Score	Indicated Rating	Aggregate Weighted Factor Score
Aaa	< 1.5	Ba1	≥ 10.5 < 11.5
Aa1	≥ 1.5 < 2.5	Ba2	≥ 11.5 < 12.5
Aa2	≥ 2.5 < 3.5	Ba3	≥ 12.5 < 13.5
Aa3	≥ 3.5 < 4.5	B1	≥ 13.5 < 14.5
A1	≥ 4.5 < 5.5	B2	≥ 14.5 < 15.5
A2	≥ 5.5 < 6.5	B3	≥ 15.5 < 16.5
A3	≥ 6.5 < 7.5	Caa1	≥ 16.5 < 17.5
Baa1	≥ 7.5 < 8.5	Caa2	≥ 17.5 < 18.5
Baa2	≥ 8.5 < 9.5	Caa3	≥ 18.5
Baa3	≥ 9.5 < 10.5		

Rating Factor Discussion

RATING FACTOR 1: SCALE AND DIVERSIFICATION

Why it Matters:

A company's size and diversity are among the key distinguishing factors in its profile. We measure these along three dimensions: scale, physical amount of waste processed, and geographic dispersion of footprint (using disposal assets as a proxy).

Large scale and diversification are positive credit characteristics due to:

- limited exposure to economic developments of any one region and localized event risk
- enhanced ability to transfer best practices across a broader operation
- ability to reduce costs by rationalizing operations and utilizing economies of scale
- greater ability to absorb disruptions or acquisition mistakes without adversely affecting overall results
- market leadership that can bring superior access to customers, and
- increased flexibility to generate cash from the divestiture of certain operations if needed.

How we Measure It:

1. **Revenue:** Total annual revenues in U.S. dollars
2. **Tonnage:** Total tonnage disposed in the company's owned (or operated) landfills
3. **Number of Active Landfills and Transfer Stations:** The number of active landfills and transfer stations provides a measure of diversification.

The revenue and diversity sub-factors have a weight of 5% each, while tonnage has a weight of 2.5%.

Factor Mapping

The mapping criteria for the **Scale and Diversification** factor are shown in the following table. Note that broad rating categories are shown for the sake of simplicity of presentation, but the sub-factor mapping is to individual alpha-numeric ratings depending on where in the range the particular metric falls. The range shown for each broad rating category is divided into equal thirds for mapping to specific alpha-numeric ratings. For example, the Aa category for the revenue sub-factor is divided into three ranges: \$7.51 billion to \$10 billion, which maps to Aa3, \$10.01 billion to \$12.5 billion, which maps to Aa2 and \$12.51 billion to \$15 billion, which maps to Aa1.

Criteria for Factor 1: Scale and Diversification							
Sub-factors	Aaa	Aa	A	Baa	Ba	B	Caa
Revenue (000s) Weight: 5%	> \$15,000,000	> \$7,500,000 to \$15,000,000	> \$3,000,000 to \$7,500,000	> \$2,000,000 to \$3,000,000	> \$1,000,000 to \$2,000,000	> \$50,000 to \$1,000,000	up to \$50,000
Tonnage in Period (000s) Weight: 2.5%	> 125,000	> 100,000 to 125,000	> 80,000 to 100,000	> 40,000 to 80,000	> 8,000 to 40,000	> 2,000 to 8,000	up to 2,000
Number of Active Landfills and Transfer Stations Weight: 5%	> 600	> 350 to 600	> 200 to 350	> 100 to 200	> 50 to 100	> 25 to 50	up to 25

Ratings Mapping

The mappings for each sub-factor for the companies in this rating methodology are shown in the table below. As indicated above, outliers for this purpose are defined as differences of two rating categories or more between the rating and the methodology indicated rating.

Results for Mapping Factor 1: Scale and Diversification								
	Rating	Mapped Rating for Scale and Diversification	Revenue (000s)		Tonnage in Period (000s)		Number of Active Landfills and Transfer Stations	
Sub-factor Weighting			5.0%		2.5%		5.0%	
Republic Services, Inc.	Baa2	Baa3	2,985,400	Baa3	34,488	Ba1	151	Baa2
Waste Management, Inc.	Baa3	Aaa	13,386,000	Aa1	127,735	Aaa	647	Aaa
Waste Connections, Inc.	Ba2	Ba3	773,256	B1	7,113	B1	69	Ba2
Casella Waste Systems, Inc.	B1	B2	525,928	B2	2,889	B3	44	B1
IESI Corporation	B1	B2	402,030	B2	5,571	B2	40	B2
WCA Waste Corporation	B1	B3	135,102	B3	3,317	B3	38	B2
Allied Waste Industries, Inc.	B2	A3	5,960,200	A3	80,000	Baa3	335	A1
Waste Services, Inc.	B3	B3	395,346	B2	3,130	B3	23	Caa1
Positive Outlier								
Negative Outlier								

Observations

The largest two companies, Waste Management and Allied Waste are positive outliers for scale and diversification. For larger companies, strong performance on this factor is counterbalanced by weaker results for other factors, such as financial strength. For smaller companies, one might expect performance in the Scale and Diversification factor to be counterbalanced by other factors for which the result is above the rating.

RATING FACTOR 2: PROFITABILITY AND COST EFFICIENCY

Why it Matters:

Since some industry players could focus on volume rather than profitability, it is important to consider the premium a company is able to charge customers for the use of its disposal assets, along with the resulting profit margin per unit of waste processed. High scores in this area could indicate high asset quality in terms of overall configuration of landfill locations, collection operations and franchise (or less contested) markets. Beyond asset quality, high scores could also indicate superior managerial acumen or more advanced logistical optimization.

Additionally, low-cost companies have better prospects than high-cost companies when faced with financial stress. Given the competitive and largely undifferentiated nature of the services provided by waste haulers and disposal providers in many markets, aggregate cost competitiveness is an important consideration.

How we Measure It:

We use the following metrics to assess cost efficiency and profitability:

1. **EBIT/Tonnage in Period**
2. **EBITA/Average Total Assets**
3. **Revenue/Employee**
4. **Operating Cost/Tonnage in Period**

Notes on Measurement Criteria

- **EBIT/Tonnage in Period:** this measures profitability per ton disposed in the company's landfills. Since efficiency must eventually translate into financial results to be meaningful, this is an effective and predictive metric for credit analysis.
- **EBITA / Average Total Assets:** EBITA return on assets provides an indication of asset efficiency and overall balance sheet quality. Over a business cycle, this measure should provide an indication of returns on

funds spent on acquisitions and on capital expenditures on landfill expansion and new business acquisition (e.g., the purchase of trucks and equipment associated with a new municipal or industrial contract).

- **Revenue/Employee:** Because labor is the single biggest cost component in the industry, Moody's tracks revenue per employee as an indication of how efficiently a company deploys its workforce. Despite differences in the use of sub-contractors across companies, this measure provides an indication of operating efficiency that can be tracked relatively easily.
- **Operating Cost/Tonnage in Period:** Operating cost per ton is the most heavily weighted sub-factor and provides a measure of efficiency that focuses on total operating costs. In contrast to the EBIT/ton sub-factor, the operating cost/ton sub-factor focuses more narrowly on cost structure and is not confounded by pricing levels that can reflect transitory local competitive market conditions.

Operating cost per ton can thus be viewed as a cost efficiency metric that can provide a good measure of a company's ability to compete in local markets, excluding current pricing power, which may be of a more temporary nature.

Factor Mapping

The mapping criteria for the profitability and cost efficiency factor are laid out in the following table. As above, although rating categories are shown, the mapping is to individual ratings depending on where in the range the particular metric falls into. For example, the A category for the operating cost per ton sub-factor is divided into three equal ranges (\$40.01 to \$45, which maps to A1, \$45.01 to \$50, which maps to A2 and \$50.01 to \$55, which maps to A3).

Criteria for Mapping Factor 2: Profitability & Cost Efficiency							
Sub-factors	Aaa	Aa	A	Baa	Ba	B	Caa
EBIT/Ton Weight: 7.5%	> \$25	> \$20 to \$25	> \$16 to \$20	> \$13 to \$16	> \$9 to \$13	> \$0 to \$9	up to \$0
EBITA/Average Total Assets Weight: 7.5%	> 20.0%	> 15.0% to 20.0%	> 10.0% to 15.0%	> 5.0% to 10.0%	> 2.5% to 5.0%	> 0.0% to 2.5%	up to 0.0%
Revenues / Employee Weight: 5.0%	> \$420	> \$370 to \$420	> \$320 to \$370	> \$270 to \$320	> \$220 to \$270	> \$170 to \$220	up to \$170
Operating Cost / Ton Weight: 5.0%	Up to \$30	> \$30 to \$40	> \$40 to \$55	> \$55 to \$72.5	> \$72.5 to \$90	> \$90 to \$130	> \$130

Ratings Mapping

The individual company mapping for Factor 2 is shown in the table below.

Results for Mapping Factor 2: Profitability & Cost Efficiency										
	Rating	Mapped Rating for Profitability and Cost Efficiency	EBIT/Ton		EBITA/Average Total Assets		Revenues / Employee (000s)		Operating Cost / Ton	
Sub-factor Weighting			7.5%		7.5%		5.0%		5.0%	
Republic Services, Inc.	Baa2	Baa3	14.3	Baa2	11.2%	A3	229.6	Ba3	72.6	Ba1
Waste Management, Inc.	Baa3	Baa3	13.8	Baa2	8.3%	Baa2	267.7	Ba1	90.6	B1
Waste Connections, Inc.	Ba2	Baa3	18.5	A2	8.1%	Baa2	188.4	B2	87.5	Ba3
Casella Waste Systems, Inc.	B1	Ba2	17.0	A3	6.0%	Baa3	181.4	B3	168.1	Caa3
IESI Corporation	B1	Ba2	7.4	B1	4.2%	Ba1	222.7	Ba3	65.2	Baa2
WCA Waste Corporation	B1	Ba1	7.8	B1	9.5%	Baa1	168.9	Caa1	34.1	Aa2
Allied Waste Industries, Inc.	B2	Baa3	11.4	Ba1	6.8%	Baa2	229.2	Ba3	63.1	Baa2
Waste Services, Inc.	B3	B3	0.9	B3	1.3%	B2	188.3	B2	125.5	B3
Positive Outlier										
Negative Outlier										

Observations

Six of the eight companies are outliers with respect to at least one sub-factor, most notably the EBITA return on assets factor (for which three companies are positive outliers) and the operating cost per ton sub-factor (for which there is one negative and three positive outliers). Allied Waste is the only outlier for the overall factor, with a Baa3 indicated rating for profitability and cost efficiency in comparison to its B2 Corporate Family Rating. Allied Waste is also an outlier for two sub-factors: EBITA/average total assets and operating cost per ton. Allied Waste's B2 rating reflects weak free cash flow relative to debt, concern about a tax dispute with the IRS that could result in payments in excess of \$400 million, as well as a large expected financing need in 2008.

The two positive outliers with respect to EBIT/Ton, Waste Connections and Casella Waste, have high per ton profitability and high return on assets but also have relatively high operating costs per ton. Both companies operate in less densely populated areas of the country and are not as well positioned to benefit from route densification initiatives, but they are able to charge a premium based on the reduced competition in many of the markets in which they operate. IESI and WCA Waste — both regional companies — are positive outliers with strong performance for operating cost per ton, which in turn gives rise to a higher return on assets.

It should also be noted that companies which have significant collection operations vis-à-vis disposal revenues, such as Waste Management, will tend to perform more strongly on EBIT per ton and less strongly on the operating cost per ton sub-factor.

RATING FACTOR 3: CASH FLOW AND INTEREST COVERAGE

Why it Matters:

Cash flow generation provides an indication of a company's ability to cover interest expense, fund capital expenditures and repay debt.

How we Measure It:

The following three sub-factors are used to assess financial strength:

- 1. EBIT/Interest**
- 2. Free Cash Flow (FCF)/Total Debt**
- 3. Cash Flow from Operations (CFO)/Total Debt**
 - **EBIT/Interest coverage** is an indication of the extent to which the company earns sufficient income (on a pre-tax basis but after charges for depreciation and amortization) to cover interest payments. As such, the ratio gives a sense of how far a company's earnings can fall before it will start defaulting on interest payments.
 - **Free cash flow to total debt** provides an indication of a company's ability to make debt repayments after i) interest payments, ii) all investments necessary to maintain assets in their current productive capacity, and iii) all investment necessary to grow the business.

We place relatively low weight on this sub-factor in this methodology because weak performance may be due to temporarily elevated levels of capital spending. However, weak performance may be a more serious credit concern if we believe that future improvement will be unlikely or difficult to achieve. This may be the case if, for example, a company's free cash flow generation is low and the bulk of capital expenditures are maintenance-related and non-discretionary in nature rather than linked to expansion initiatives.

- **Cash flow from operations to total debt** provides an indication of a company's ability to service debt if it were to stop making dividend payments and capital expenditures (i.e. a theoretical scenario where it is running down the business to make payments in favor of creditors). The inclusion of this metric as a rating sub-factor provides greater balance for a company that is undertaking large expansion projects but which is fundamentally able to service debt in the long-run.

Factor Mapping

The mapping criteria for cash flow and interest coverage is shown in the following table. As for other factors, mapping is to individual ratings depending on where in the range the particular metric falls, with the range for each rating category divided into thirds. For example, the Baa category for the free cash flow to debt sub-factor is divided into three equal ranges (14.01% to 16%, which maps to Baa3, 16.01% to 18%, which maps to Baa2 and 18.01% to 20%, which maps to Baa1).

Criteria for Mapping Factor 3: Cash Flow & Interest Coverage							
Sub-factors	Aaa	Aa	A	Baa	Ba	B	Caa
EBIT/Interest Weight: 15%	> 12.0x	> 9.0x to 12.0x	> 6.5x to 9.0x	> 4.0x to 6.5x	> 2.5x to 4.0x	> 1.0x to 2.5x	up to 1.0x
FCF / Debt Weight :7.5%	> 40%	> 30% to 40%	> 20% to 30%	> 14% to 20%	> 8% to 14%	> 2.0% to 8.0%	up to 2.0%
CFO / Debt Weight :7.5%	> 75%	> 50% to 75%	> 40% to 50%	> 25% to 40%	> 15% to 25%	> 5.0% to 15.0%	up to 5.0%

Ratings Mapping

The results of mapping individual companies are shown in the table below.

Results for Mapping Factor 3: Cash Flow & Interest Coverage								
	Corporate Family Rating	Mapped Rating for Cash Flow & Interest Coverage	EBIT / Interest		FCF / Debt		CFO / Debt	
Sub-factor Weighting			15.0%		7.5%		7.5%	
Republic Services, Inc.	Baa2	Baa3	5.5x	Baa2	6.2%	B1	32.3%	Baa2
Waste Management, Inc.	Baa3	Ba2	3.1x	Ba2	8.2%	Ba3	26.6%	Baa3
Waste Connections, Inc.	Ba2	Ba1	4.5x	Baa3	11.0%	Ba2	28.9%	Baa3
Casella Waste Systems, Inc.	B1	B3	1.4x	B3	-8.2%	Caa2	13.0%	B1
IESI Corporation	B1	B3	1.1x	B3	-9.8%	Caa2	11.6%	B2
WCA Waste Corporation	B1	B2	1.7x	B2	3.2%	B3	16.6%	Ba3
Allied Waste Industries, Inc.	B2	B3	1.6x	B2	-1.4%	Caa1	10.3%	B2
Waste Services, Inc.	B3	Caa1	0.1x	Caa2	-1.8%	Caa1	9.6%	B2
Positive Outlier								
Negative Outlier								

Observations

For this rating factor, there are no overall outliers. For sub-factors, Republic Services is the only outlier. FCF/Debt for Republic Services was impacted by one-time items relating to the incidence of tax payments and capital expenditures.

RATING FACTOR 4: LEVERAGE

Why it Matters:

Financial policy and tolerance for leverage is an important rating factor in this sector because it indicates the ability of the company to repay debt. The total weight of 32.5% afforded to the two sub-factors reflects this. Moody's defines leverage in a way that takes into account total indebtedness relative to the cash-generating abilities of the business and, also, the cash-generating potential of the assets relative to total liabilities over time.

How we Measure It:

1. Total Debt/EBITDA
2. $[\text{EBIT}(1 - \text{Tax Rate})/\text{Tonnage in Period} \times \text{Capacity}]/\text{Total Liabilities}$

Notes on Measurement Criteria

- **[EBIT(1 - Tax Rate)/Tonnage in Period x Capacity]/Total Liabilities:** The numerator of this ratio provides a rough estimate for total enterprise value based on after-tax operating profit per ton⁵, multiplied by the total landfill capacity of the company, measured in tons. This measure of enterprise value is then divided by liabilities, including an allowance for capitalized operating leases. It should be noted that low performance for this metric may indicate the need for future capital investments in landfill expansion or a heightened risk of acquisitions.

This metric also takes into account on-balance sheet environmental and landfill retirement obligations as long-term, non-debt obligations of the operating companies. For the purpose of this calculation, total capacity is measured in tons and includes both permitted capacity and likely expansions as disclosed by the company. Some companies provide capacity data in cubic yards rather than tons. Moody's converts this information to tons using assumed compaction factors based on industry averages.

Factor Mapping

The mapping for financial policy/tolerance for leverage is laid out in the table following below. As for the previous factors, mapping to individual ratings depends on where in the range the particular metric falls, and the range for each rating category is divided into thirds. For example, the Baa category for the debt to EBITDA sub-factor is divided into three ranges: 2.51 times to 2.83 times, which maps to Baa1, 2.84 times to 3.17 times, which maps to Baa2 and 3.18 times to 3.50 times, which maps to Baa3.

Criteria for Mapping Factor 4: Leverage							
Sub-factors	Aaa	Aa	A	Baa	Ba	B	Caa
Debt / EBITDA Weight: 25%	up to 1.25 x	> 1.25x to 1.75x	> 1.75x to 2.5x	> 2.5x to 3.5x	> 3.5x to 4.5x	> 4.5x to 6.0x	> 6.0x
[EBIT(1 - Tax Rate)/Tonnage in Period] / Total Liabilities Weight: 7.5%	> 6.0 x	> 5.0 x to 6.0 x	> 4.0 x to 5.0 x	> 3.0 x to 4.0 x	> 2.0 x to 3.0 x	> 1.0 x to 2.0 x	up to 1.0

Ratings Mapping

The individual mappings for each metric provide the following sub-factor and composite mappings for Factor 4 as follows:

Results for Mapping Factor 4: Leverage						
	Rating	Mapped Rating for Leverage	Debt / EBITDA		[EBIT(1 - Tax Rate)/Tonnage in Period x Total Capacity] / Total Liabilities	
Sub-factor Weighting			25.0%		7.5%	
Republic Services, Inc.	Baa2	Baa1	2.5x	Baa1	3.9x	Baa1
Waste Management, Inc.	Baa3	Baa3	2.9x	Baa2	2.6x	Ba2
Waste Connections, Inc.	Ba2	Baa2	3.4x	Baa3	4.5x	A2
Casella Waste Systems, Inc.	B1	B2	5.2x	B2	1.3x	B3
IESI Corporation	B1	Ba3	3.9x	Ba2	1.3x	B3
WCA Waste Corporation	B1	Ba2	4.3x	Ba3	3.1x	Baa3
Allied Waste Industries, Inc.	B2	B1	4.9x	B1	1.9x	B1
Waste Services, Inc.	B3	Caa3	8.6x	Caa3	0.1x	Caa3
Positive Outlier						
Negative Outlier						

Observations

This factor maps well to the rating, with no outliers. Waste Connections and WCA Waste are sub-factor outliers with respect to [EBIT(1 - Tax Rate)/Tonnage in Period x Total Capacity] / Total Liabilities, which is driven primarily by their relatively young, high capacity landfills.

⁵ To smooth period-specific changes in tax assessments, after-tax operating profits are based on a normalized industry average tax rate of 37.5%.

Other Rating Considerations

The purpose of this rating methodology is to explain factors that Moody's considers most important. It is not intended that ratings will always match the indicated rating for the methodology. Not every circumstance can be anticipated by this methodology. Moody's ratings also consider management and governance, financial reporting and overall disclosure, liquidity, legal and environmental matters, and other factors that are generally common to all corporate issuers. These matters are addressed in Moody's research and are integral to the rating process, although they are not discussed in detail here.

We also note that a thorough appreciation of the business model, how the company conducts its business and how it plans to provide returns to its investors is critical.

Ratings may also differ from the methodology indicated ratings due to expected shifts in future performance. In the solid waste management industry, long term success is predicated on sustainable competitive advantages through the configuration of disposal and collection assets, achieving route efficiencies and extent of competitive pressures. Important considerations in estimating future performance include an assessment of:

- the target market's attributes and how the company plans to access it
- overall positioning of landfills relative to growing urban centers
- the strength of the competition in key markets or geographies
- the planning horizon and planning process; contingency planning
- management's investment/capital expenditure strategy
- management's acquisition track record
- environmental and remediation liabilities, including asset retirement obligations
- share purchase programs and dividend policy

Final Mapping Data

Illustrative indicative ratings based on the methodology are set out in the following table:

	Rating	Overall Methodology Indicated Rating	Mapped Rating for Scale and Diversification	Mapped Rating for Profitability & Cost Efficiency	Mapped Rating for Cash Flow & Interest Coverage	Mapped Rating for Leverage
Factor Weighting			12.5%	25.0%	30.0%	32.5%
Republic Services, Inc.	Baa2	Baa2	Baa3	Baa3	Baa3	Baa1
Waste Management, Inc.	Baa3	Baa2	Aaa	Baa3	Ba2	Baa3
Waste Connections, Inc.	Ba2	Baa3	Ba3	Baa3	Ba1	Baa2
Casella Waste Systems, Inc.	B1	B1	B2	Ba2	B3	B2
IESI Corporation	B1	B1	B2	Ba2	B3	Ba3
WCA Waste Corporation	B1	Ba3	B3	Ba1	B2	Ba2
Allied Waste Industries, Inc.	B2	Ba3	A3	Baa3	B3	B1
Waste Services, Inc.	B3	B3	B3	B3	Caa1	Caa1
Positive Outlier						
Negative Outlier						

In the Appendix, we show the mapped rating for each of the broad quantitative rating factors along with the mapped composite and actual Moody's rating for each of the eight companies in the sample. The sub-factor and factor weightings are also provided. Mapped results for each of the sub-factors and factors that vary from the actual rating by two or more rating categories are highlighted.

There are eight waste management companies in this methodology. The indicated ratings of four companies (50% of the sample) map to their assigned ratings, while another two fall within one notch of the assigned ratings. Two companies (Waste Connections and Allied Waste) are positive outliers overall. The outlook for both companies is positive. Thus, the methodology provides good correlation to ratings.

Overall, the methodology indicates that there are more positive outliers than negative outliers. This reflects the general trend toward upgrades within the industry, which has benefited from a period of greater stability in recent years and the more recent strong pricing environment. This trend is reflected in the rating outlooks in the sector, with all outlooks being either stable or positive.

Related Research

Special Comments:

[Leveraged Finance Industry Updates: Solid Waste and Gaming, February 2004 \(81298\)](#)

[Leveraged Finance Industry Updates: Gaming and Solid Waste, February 2005 \(91697\)](#)

[Leveraged Finance Industry Updates: Gaming and Environmental Sectors, February 2006 \(96749\)](#)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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