Solid Waste Sector
Rating Agency Criteria

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Credit ratings from the three major Wall Street rating agencies – Standard & Poor's Ratings Group ("S&P"), FitchRatings ("Fitch") and Moody's Investors Service, Inc. ("Moody's") – are among the most visible and explicable measures used to gauge a public solid waste system's financial standing. Not only are bond ratings important to external observers of a system – ranging from the media to local elected officials – but such ratings will also significantly affect the rate of interest a system must pay when issuing debt. In the capital-intensive and highly competitive solid waste industry this can, in turn, have a major impact on a system's operating budget and the fees it must charge.

The three major bond-rating agencies use a grading scheme (summarized on the left) to provide relative rankings of public sector credits. They have also published guidelines describing the financial policies and operational practices they view as significant when evaluating an issuer's credit. These publications reflect the individual rating agencies' views, but also provide a basis for industry standards. In the following section, PFM outlines these criteria.

Revenue Structure

The rating agencies consider the underlying economics of a solid waste system to be the single most important factor with respect to general creditworthiness.

Revenue diversification has been a central component of solid waste systems' efforts to maintain or rebuild their creditworthiness. The credit rating agencies consider multiple revenue streams, over and above tipping fees, to be a positive credit factor, with Fitch noting that:

> "…security of solid waste facility debt supported by a sole revenue source is extremely vulnerable to any future local or regional changes in waste disposal options, non-renewal of contracts, legal and regulatory changes, and changes in market pricing of waste disposal services."

Likewise, S&P has commented that "the nature and diversity of the revenue stream is an important (credit rating) factor, given the transportability of solid waste." [1]

Each of the multiple revenue sources generated by a solid waste system is analyzed by the rating agencies with respect to its stability and competitiveness. This is especially true of a system's primary revenue source, which is "the ultimate credit strength" of a solid waste system, according to S&P. The following table, based on criteria from Fitch, details potential revenue sources for solid waste systems and the credit concerns that are associated with them.

[1] *Public Finance Criteria: Solid Waste System Financings.* Standard & Poor's, November 2002

Revenue Source	Credit Concerns
Solid Waste Taxes and Charges	- The underlying credit of the government pledging taxes and fees or otherwise guaranteeing obligations of the solid waste system - For service contracts with municipal governments: non-renewal of contract or renewal on less favorable terms
Tipping Fees	- The competitiveness of tipping fees is weighed relative to security of system's waste disposal contracts
User Fees	- Billed like utility fees: issues of collection rates and payment enforcement (penalties)
Revenues from Recycled Materials	- Demand and market prices for types of waste recovered by the system are used to determine whether related revenue estimates are realistic
Spot Waste Deliveries	- Competitiveness of per-ton tipping fees relative to alternatives within transportable distance - Regional collection and disposal practices - Regularity and amount of spot waste deliveries and offsetting effect of increased O&M costs
Energy Sales	- Contract prices for energy governed by Public Utilities Regulatory Policies Act are often above market rates: threat of enforceability not assured - Energy deregulation and general demand for energy generated by resource recovery facilities

In general, across the revenue categories listed in the table above, the stability of a solid waste system's overall revenue stream is the most important factor in establishing its creditworthiness. This is directly linked to rating agencies' concerns about debt service coverage and revenue and expenditure trends over time. Stability is also provided by legal structures, including general obligation guarantees and service contracts, which ensure minimum levels of revenue generation. According to S&P:

> "The legal structure should provide a revenue stream that can be maintained, despite additional maintenance cost, lower throughput, reduced energy output or price, and outages caused by system failure of environmental requirements."

The most secure legal structure for revenue generation is a general obligation pledge, either in the form of guaranteed taxes to support a solid waste system or payments from a participating municipality secured by a bond covenant. Outside of general obligation pledges, the most critical legal structures are those that control the waste stream, "one of the most important factors of credit stability" according to Moody's.[2] Similarly, S&P notes that:

> "The ability to direct waste to the project or system's facilities provides an important link between the waste generator and the disposal system. Waste flow control can be provided by municipal ownership of collection vehicles, some contractual arrangements, or through economic means. Waste flow control ordinances cannot be relied on in light of the U.S. Supreme Court Carbone decision. Based on the competitive nature of the solid waste industry, a system that cannot effectively retain the waste flow is generally not investment grade, unless alternative revenue sources are available."

As mentioned above, waste stream control is achieved through collection practices and contracts. With respect to collection practices, public collection (where the solid waste system owns and operates the trucks) allows for the greatest waste stream control, followed by collection under contract to the system, where private operators collect waste and are obligated to dispose of it at system-designated facilities.

Solid waste systems without their own collection capacity (and even some with such capacity) rely upon service contracts with waste providers, including other municipalities, private operators, and haulers to ensure stable waste flow to their facilities. The terms of these service contracts vary, but they usually contain guarantees to deliver tonnage at certain levels and prices. The length of these service contracts relative to debt service requirements and the likelihood of their renewal are chief concerns of the rating agencies. In addition, while there is no definitive settlement on the legality of waste provider contracts, Fitch notes that:

> "Provider contracts that are competitively bid in a manner that does not discriminate between in-state and out-of-state providers have successfully withstood some legal challenges."

[2] *Rating Methodology: Credit Risks and Opportunities for the Municipal Solid Waste Sector.* Moody's Investors Services, October 1999.

Management Practices

While somewhat subjective and irreducible to a mathematical formula within the bond rating process, management factors are an important element of creditworthiness. Rating agencies see managerial control as key to maintaining the financial and operational stability necessary to meet the legal obligations of a bond ordinance. The ability to set objectives, and meet them through careful planning and skillful implementation, has become a factor that can compensate for other weaknesses beyond management's control.

Fitch notes that given the public/private collaboration associated with most solid waste systems, where a public entity manages the system and private entities oversee the waste collection and disposal process, the management and operational practices of both groups are rating factors.

The solid waste system itself is judged by its ability to "adapt and respond within the business environment and consider strategies for ensuring waste flow and revenue streams", according to Standard & Poor's, which also comments that the most critical management criteria is whether the current team is "proactive or reactive."

The private contractors involved in a solid waste system are assessed with respect to "their technical and financial ability to meet construction and operating challenges" and their "operating history and credit position", according to Fitch. The rating agencies also prefer that the solid waste system be insulated from potential failures of its private operators. Parent company guarantees of private operator obligations help to ensure this, as do contractual arrangements where private operators serve as agents of the solid waste system, insulating it from the bankruptcy of the operators or their parent companies.

Operational Characteristics and Regulatory Compliance

In addition to assessing the management of a solid waste system and its private contractors, the rating agencies examine the overall feasibility of the system and its ability to operate without interruption. This analysis is crucial in determining the security of bonds backed by revenues from the solid waste system.

Standard & Poor's notes that "the expected life of the landfill should match the term of the debt, and the legal structure must provide flexibility to respond to the variability in landfill life if waste flow levels change." While commenting that these concerns are somewhat mitigated for a solid waste system with multiple facilities and its own collection capacity, the rating agency states that it also reviews the ability of a system to operate with some of its components temporarily or permanently out of service. The capacity to dispose of waste under these circumstances, with a minimum of shock to operations and cost, improves a system's creditworthiness.

Expense structure is another aspect of operations considered relevant to a system's credit rating. According to Moody's Investors Services, "A system's ability to compete rests on its control of both current and future expenses."

Focusing on operational cost containment strategies, Fitch notes that:

> "Operating costs have been stabilized or reduced through partnerships with private companies that operate facilities, haul waste, and/or market recycled products. These private companies are often experienced in waste management. They are usually divisions or departments of very large national companies involved in all aspects of solid waste collection and disposal. Consequently, experience and national networks may increase system efficiency and reduce operating costs."

In addition to operating expenses over which they have some control, a solid waste system must address growth in its service area and reflect such analysis in its capital improvement plans. A system must also address the cost of regulatory requirements and environmental mandates, whether at the federal, state, or local level.

As part of the credit rating process, the rating agencies assess how "complying with the regulatory environment will impact a system or project's ability to compete"[3]. As noted by Fitch:

> "Compliance with these regulatory provisions affects the costs of operating solid waste systems and the competitive position of facilities within the systems."

Competitive Position in the Solid Waste Market

The ability of a solid waste system to compete in the post-Carbone solid waste market, where legal flow control no longer exists, is considered central to its creditworthiness. As a result, the rating agencies pay close attention to a solid waste system's tipping fees, comparing them to those of competing systems and facilities. As proposed by Moody's:

> "Whenever a solid waste project's per ton rate for disposal (tipping fee) is less than the market per ton rate, such a project becomes attractive for both the host municipality and other market users. The closer a project's disposal rate is to the market rate, the less likely is the threat of waste diversion."

Likewise, the rating agencies examine other aspects of local waste flow competition, including "the proximity of competing facilities, as

[3] *Public Finance Criteria: Solid Waste System Financings.* Standard and Poor's, November 2002

well as the capacity for those facilities to accept outside waste", according to S&P.

Rating agencies also review the total household costs for a solid waste system, including collection, transportation and disposal expenses. As further noted by S&P:

> "Individuals are concerned with their total bill for garbage service, not the various components. Household cost increases are reviewed for acceptability and affordability."

Likewise, system governors, such as Commissioners or board members, are also concerned about the overall cost and fees charged to their constituents.

In addition to benchmarking a system's fees and charges against local comparables, the rating agencies analyze the overall marketplace for solid waste within the system's service area. The characteristics of local waste flow (commercial versus residential), the relationship between waste providers and the solid waste system, and the overall economic strength of the service area as indicated by its growth (employment, population, income) are all examined, and used to assess current and projected aggregate waste flow demand.

Aggregate waste flow demand is analyzed, in turn, relative to the capacity of all current and future disposal alternatives in the service area. This allows the rating agencies to determine whether surplus or deficit waste flow capacity exists, which has implications for future system costs and rates.

Financial Policies

In order for a solid waste system to receive an investment grade credit rating, its revenues must cover at least 100 percent of the system's annual debt service and operating expenses. In practice, though, higher coverage is almost always expected. The rating agencies understand the competitive environment in which solid waste systems operate, and view bond ordinance obligations, including rate covenants and additional bonds tests, in this light. However, given that so many solid waste systems operate with only slight revenue margins above coverage requirements, the rating agencies see these protections as ultimately critical for bondholder security.

The rating agencies have not published their specific financial rating criteria for the solid waste sector. Instead, they have suggested a number of general financial policies and practices associated with higher-rated systems. For example, S&P expresses its concern for "quality of coverage and liquidity." Moody's Investors Services, on the other hand, suggests that:

> "Systems that maintain strong liquidity can afford to maintain lower debt service coverage."

Only Fitch has put forward a comprehensive list of the financial policies and practices that it examines in the rating process. Highlights from that list are detailed in the table below, along with Fitch's notes on each policy.

In closing, it is important to note that the rating agencies may adjust or change these criteria over time, and that they will apply them separately and sometimes differently to each credit.

Financial Policy	Notes
Flow of Funds	- Gross revenue versus net revenue debt service pledges examined
Reserve Funds	- Debt service reserve either 10% of par amount of bonds or 125% of maximum or average annual debt service - Reserves for operations in the form of two or three months of expenses - Maintenance and repair reserve requirements are usually determined by technical consultants
Rate Stabilization Funds	- Crucial to systems that rely on per-ton tipping fees for a large percentage of revenues - Fitch examines priority of funding, conditions for draws, and the period of time for replenishment following a draw
Distribution of Revenues	- General fund transfers “weaken security for bondholders”
Rate Covenants	- Coverage requirements range from 1.0x-1.5x - Inclusion of both operating and non-operating revenue in coverage calculations weakens bondholder security
Additional Bonds Tests	- Standard tests vary from 12 of the prior 18 months to 24 months or the last fiscal year - Fitch reviews the test period in light of historical and pro-forma experience and the extent to which competitive factors are considered when establishing future rates and utilization
Events of Default and Remedies	- Examine events triggering default and length of time allotted to cure events of default - Payment provisions of municipal or vendor guarantees evaluated to determine whether they will be available to avoid acceleration of bonds

Key Rating Criteria Summary

In its credit rating guidelines, Fitch has published an excellent summary of characteristics of solid waste issuers that would receive a minimum investment grade rating ("BBB" or "A"). Fitch has also published a brief list of its general credit concerns with respect to solid waste issuers. These have been detailed below, and should serve as a useful guide for making a snapshot determination about the creditworthiness of a solid waste utility.

Characteristics of Investment-Grade Solid Waste Issuers	General Credit Concerns
1) Sufficient waste supply	1) Uncommitted waste supply
2) Economically viable and stable service area	2) Uneconomic rate structure
3) Realistic revenue projections and/or history	3) Competition from other facilities within transportable distance
4) Economic and financial flexibility	4) Limited financial flexibility
5) Sufficient reserves and debt service coverage	5) Dependence solely on tipping fees

Considerations for Provisions of a Solid Waste Indenture

Critical to the rating agencies' evaluation of a system as a credit are the provisions of the system's Indenture of Trust ("Indenture") which provides security to investors who purchase the system's solid waste bonds. The Indenture should have a number of mechanisms to assure investors that they will be repaid when principal and interest payments are due.

This section of the report discusses key aspects of the Indenture, focusing first on suggestions for fund structure, and then on particular security for the bonds.

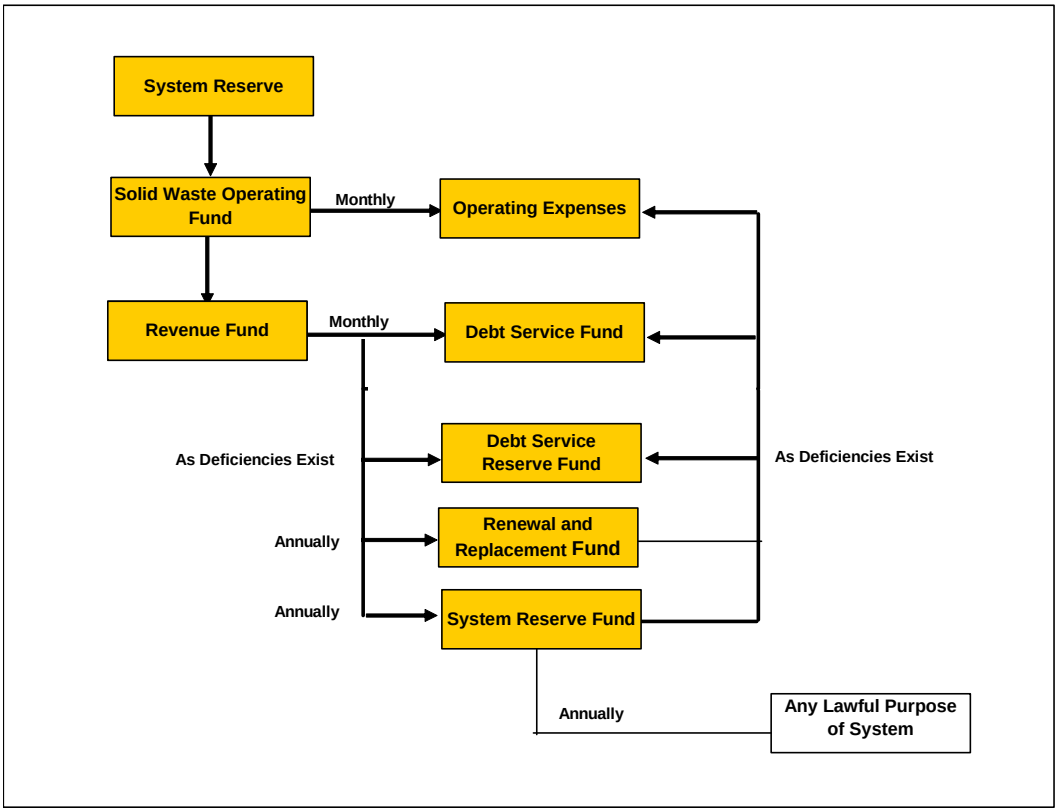
Flow of Funds

The Indenture should establish funds similar to the following:

- Revenue Fund
- Construction Fund
- Operating Fund
- Debt Service Fund
- Renewal and Replacement Fund
- System Reserve Fund
- Landfill Closure Fund

The following chart, provides a visual example of what such a flow of funds would look like:

Possible Flow of Funds



1) Funds flow first to the Solid Waste *Operating Fund.* On a certain day of each month, the System would set aside the next succeeding month's projected operating expenses.

   The Operating Fund could be funded by a surcharge on solid waste charges in the Territory plus pass-through costs for the residential collection services. The surcharge would be equal to a prescribed dollar amount per ton of solid waste collected.

2) By a certain day each month, all other System revenues are deposited in the Revenue Fund. The Revenue Fund would serve as the system's major repository of funds pursuant to the Indenture, receiving revenues and paying operating expenses as necessary. Revenue Fund money would be allocated in the following order of priority.

   i) To cover shortfalls in the Operating Fund

   ii) To fund the *Debt Service Fund:* Monies related to solid waste system bonds backed by a revenue pledge would be deposited in trust accounts. Solid waste revenues would be set aside for interest (1/6 interest payment per month for succeeding semiannual interest period) and principal (1/12 principal payment for succeeding annual principal period).

   iii) To pay any subordinated debt.

   iv) To fund the *Renewal & Replacement ("R&R") Fund,* to meet the reserve requirement established by the Indenture. This fund would be used for traditional R&R work, except in emergencies, when it can be used to support the Revenue Fund (such a case would require a signed declaration by a person authorized by the Indenture). The R&R Fund could also be used to make principal and interest payments if other accounts are insufficient to do so.

   v) To fund the *System Reserve Fund*. The System Reserve Fund would be a large "bucket" in the system's flow of funds, and could be used to:

   - make up deficiencies in any fund
   - pay principal and interest on subordinate obligations
   - pay the cost of improvements
   - purchase or redeem bonds
   - pay the cost of any item qualifying for renewal and replacement expenditure
   - pay principal and interest and redemption on bonds
   - any other lawful purpose

At the end of each year, unspent funds in the Revenue Fund would be reclassified as unrestricted cash and added to the System Reserve Fund.

Additionally, the system could establish a *Rate Stabilization Fund* outside of the Indenture. This fund could be used to pay front-end costs for the implementation of a solid waste master plan or for operating expenses. These costs might include engineering surveys, permitting costs, land appraisal and acquisition and could also be used for certain capital requirements for future landfill requirements such as site drainage and access roads.

Construction Fund

The *Solid Waste Construction Fund,* though not included in the flow of Solid Waste funds, would be required by the Indenture to be set aside to fund any bonded solid waste projects.

Rate Covenant

A rate covenant is a pledge by a borrower to set fees and charges high enough to meet or exceed ("cover") financial obligations, including debt service payments. The establishment of debt service coverage of 100 percent or greater to pay all operating expenditures and debt service is a measure of protection for investors against nonpayment of bond principal and interest due to emergencies, short-term disturbances, and long-term declines. Highly-rated entities generally show higher debt coverage ratios.

The Indenture would establishe a rate covenant requiring that the system set rates and charges sufficient to meet the following debt service coverage:

- Net Revenues must be equal to or greater than 1.00 times (or greater) the principal and interest payment for the fiscal year, plus any amount needed to fully fund the Reserve Account (set at the Maximum Principal and Interest Requirement in the then current or any subsequent fiscal year on all outstanding bonds), as well as any other payments required by the Indenture (such as letter of credit or other liquidity payments, as relevant).

In this calculation, Net Revenues would be defined as Gross Revenues less Operating Expenses.

Gross Revenues could include assessments, tipping fees, surcharges, franchise fees, and all other fees, charges or other income received by the system for the use of the services and facilities of the system. Revenues could also include impact fees to the extent that such fees are available to pay debt service on bonds under applicable law and are pledged by subsequent resolutions of the system.

Operating Expenses include the current expenses, paid or accrued, of operation maintenance and ordinary current repairs of the system. Operating Expenses exclude, without limitation, any allowance for depreciation, amortization of capital assets, and the cost of preparation and closure of landfills. Operating Expenses must be reasonable and necessary, and may not exceed amounts allowed by the annual budget as amended.

Additional Bonds Test

The Indenture should require that before the system issues additional revenue bonds, it must meet a test intended to show that it has sufficient revenues to meet the rate covenant and resulting coverage, even with the additional debt service for the new bonds. In the system's case, this additional bonds test would require that the system provide the Trustee with a certificate of the Consulting Engineer setting forth: (1) the estimated date of completion for the project for which the Additional Bonds are being issued, (2) the estimates of Net Revenues, including the Net Revenues to be derived for such project, if any, for each of the three Fiscal Years following the Fiscal Year in which it is then estimated by the Consulting Engineer to be completed (3) that such Net Revenues will be sufficient to pay 100% of such Annual Debt Service, and will also be sufficient to make all other payments required by the terms of the Indenture (other than Operating Expenses).