Implementing Disaster Plans For Municipal Solid Waste Systems

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Abstract
Municipal solid waste managers face an urgent need to review disaster plans as well as the myriad of other management plans for health, safety and welfare of employees and the service area. Other planning areas include financial and capital improvements. The planning process is an important management tool. The evaluation of management is one of the factors included in the assignment of municipal credit ratings. This paper profiles how Fitch Ratings incorporates management in their credit analysis and provides key points for solid waste managers to consider as they prepare or refresh plans.

Overview
Fitch Ratings reported on the results of its research on municipal bond defaults. Fitch Ratings reported that “municipal debt is generally regarded as low risk”. The report further states that the “13-20 year cumulative default rates on all municipal debt of less than 1.5%. Municipal solid waste systems perform the essential public service of the collection and disposal of trash and putrifiable waste. Many solid waste systems operate as enterprise funds of the governing municipality. Others are separate agencies or authorities that directly own and operate their systems or contract the operations to private sector operators. According to the default study, between 1979-1994 the default rate for the solid waste sector was 0.31%.

In March 2000, Fitch Ratings issued its solid waste rating guidelines, highlighting the basic areas that are used in the evaluation of the credit quality of the solid waste system. These broad areas include a study of system facilities and who provides the collection, disposal and facility operations. Next is the evaluation of the service area, the willingness and ability of the service area to generate or procure sufficient supply of waste and to pay user fees and charges for solid waste collection and disposal. The system or facility competitive position is also evaluated. Legal provisions and bond security is assessed to determine what revenues are pledged for debt repayment, how are they collected and when are these monies deposited with the Trustee. How the funds are distributed to public and private sector participants, the flow of funds as well as provisions to issue additional debt, maintain rates and fees and use excess surplus are important. Waste collection and disposal contract, intermunicipal agreements, and service contracts as well as energy purchase contracts are among the numerous legal documents that are reviewed and linked to the terms and provisions of the trust indenture. The financial feasibility of the system as well as the operating performance is evaluated to independently assess the ability of the system to produce income to cover debt service.

Of particular importance is the management of the system. In a related research report, Fitch Ratings “Impact of Management Practices on Municipal Credit”, management practices “are even more important to predicting favorable credit performance”. In particular long range strategic plans for improving property and equipment, fiscal budgeting and trend analysis.

These management concepts are applicable to municipal solid waste systems as they pertain to the myriad types of plans that solid waste systems should be managing. These plans include the broad areas of long range strategic plans, emergency planning for prevention of and intervention in disasters as well as employee health and safety plans and plans for educating the public on waste collection and disposal of waste accepted by the system.

The effectiveness of these plans ensures that the solid waste system is positioned to respond to the dynamic operating environment. Thus protecting the system to ensure sufficient funds to operate, maintain, improve the system and repay all debts. This ability is represented by the credit rating. Letters denoting the credit quality represents the credit rating. Investment grade credit ratings ranged from the lowest “BBB”
highest credit quality of “AAA”. The other investment grade categories are “AA” and “A” with “+” and “-“ indicators denoting the relative position of the rating within the category.

**Benefits of Planning**

The benefits of municipal solid waste planning are numerous and include the ability of the municipality to respond well as the first responder, to protect landfill disposal space due to alternative disposal options and by having the vendors for non-processible waste already in place prior to a disaster occurring. Contract terms that include sharing of revenue from salvaged or recycled products can enhance overall operating performance. Finally, timely responses avert health and safety hazards and permit violations. The planning process may also include the identification of state and federal programs and grants where additional financial resources may be obtained.

**Disaster Planning**

Disasters can be natural or man-made and can include hurricane, tornado, earthquake, flood, fire, explosions and the damage and destruction to property and human life that ensues. In a disaster, the municipality is usually the first responder with emergency services provided at the local level. Ultimately, these services will be supplemented with federal, state, regional and other national and international search and rescue teams. If there is a suspicion of a crime, then the affected area becomes a crime scene and the investigative officials take control of the situation, including the removal of debris, trash and waste. In most instances, the municipality is responsible for the delivery and coordination of traditional municipal services—water, waste, solid waste removal, food, shelter and emergency police and fire protection.

There should be regular coordination and contact with federal, state and local officials. These officials should be clearly identified, with a phone list. A chain of command at the system staff level responsible for notifying these agencies when needed. There should be a “road map” on how waste is to be processed and disposed complete with contracts and agreements negotiated in advance. This advance planning can extend the life of landfill assets if waste can be recycled and reused.

**Disasters Impact the “3 P’s”**

Nonetheless, disasters can impact solid waste system operations by the “3 P’s”-Production, Performance and Profitability. The impact on financial and human resources occurs when employee concentration and availability is reduced due to distractions concerning self and family, or alternative forms of transportation are not accessible. The increased volume of waste brings increased collection and disposal costs, reduced landfill capacity, increased throughput and expenses for transfer stations and recycling centers. If the volume of waste is greater than permit capacity, then there is the potential for lack of compliance with increased costs due to penalty payments. If employee and plant capacity is severely affected, then there may be lack of compliance with collection and disposal contracts as well as other operating permits and regulations. Consequently, costs may increase due to the payment of penalties and increased overtime waste and processing expenses.

**Related Plans**

The solid waste system needs several different types of plans to supplement the disaster plan. These include a security plan, biohazard screening plan, hazardous waste plan, health and safety plan and financial planning. The following sections provide the various considerations for each of the respective plan areas. The common points surrounding the development of each plan is to identify what services are required, who will perform them, how will the services be delivered, what is the time frame for the tasks, how will they be implemented, who is responsible for oversight management and coordination. The costs of the required services as well as how the revenues will be obtained are essential to the safe and efficient delivery of municipal solid waste services.

**Security Plan:** To ensure the safety and security of facilities and staff there should be a visitor sign-in and escort program. Hardhats, eye and ear protection should be required and visitors escorted at all times. There should be perimeter fencing and patrol of the site with video cameras placed at strategic locations, including the scale house. Staff should undergo training programs to heighten their awareness of health and safety problems as well as injury prevention programs and the proper use of occupational health and safety equipment. Fire and other safety officials should visit the facility annually and any changes in the facility operation or equipment should be noted.

**Waste Screening Plans:** The facility should have a regular program to examine or identify the waste supply for biohazards and other chemical hazardous waste. There should be a disposal plan with contacts and contracts in the event hazardous waste was improperly disposed in the normal waste stream. Disinfection stations at intake sites and other
processing areas of the facility reduce the risks of exposure to staff.

The risk of this waste entering the system is lessened when there are community and school programs to educate the waste generator on how waste should be disposed. Special collection sites and dates help avoid deliberate disposal of hazardous items during regular collection because other safe disposal alternatives are not readily known or available.

**Employee Health and Safety Plan:** Employee health, safety and training are important to ensure efficient and safe facility operations and lessen the accident rate. The employee plans include providing services for medical, dental, counseling care and occupational safety. Training in the use of new equipment and managerial skills enable development of the staff and career advancement. Tracking employee performance and customer satisfaction can have financial benefits. An incentive program can reward and advance employees and enhance service levels. Customers that are satisfied are more likely to not resist rate and fee increases.

**Strategic Plans for Finances and Capital:** All financial data should have regular backup and off-site storage. Financial plans include current year budgeting, long-term projections of revenues and expenses as well as a capital improvement plan for equipment and facility maintenance and improvement. Variance analysis to budget and to original feasibility studies provides information on the system performance. These long-range financial plans assist in forecasting rate increases, increased expenditures for maintenance and other system upgrades. The maintenance and replacement of system facilities and equipment are addressed in capital plans. These plans should be linked to the financial plans to ensure net revenues from system operations will be sufficient to provide for annual replacement and renewal as well as increased debt service costs from amounts borrowed to improve and upgrade physical plant.

A system that has excess cash at the end of the year can increase its reserve position and reduce the frequency of rate increases as well as have funds to meet increased costs during emergencies.

**Lessons Learned**

Municipal solid waste systems that employ good planning have learned to have plans in place BEFORE they are needed. To have a chain of command and alternatives in place to alleviate employee concerns that may impair their ability to get to the job or get the job done. They have learned that it is important to maintain regular contact with federal, state and local officials for smooth coordination and cooperation in an emergency. The time to acquaint the fire department with new facility improvements is not in the midst of a disaster. Thus, annual visits with police and fire personnel to review the facility are important to good disaster planning. The importance of regular emergency drills and expecting the unexpected contribute to a smooth execution of all solid waste plans.

**Acknowledgement**

All errors and omissions are the responsibility of the author. The author wishes to thank the following for their assistance in preparing this paper: Russell P. Rutkowski, Associate Engineer-Solid Waste, Monroe County, NY Department of Environmental Services; Robin Geller, E&E, New York; Carl Newby, Solid Waste Division Chief, Arlington County, VA

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