

After Flow Control: The Steps Taken by Dade County to Ensure Continued Operation of Its Solid Waste Management System

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ABSTRACT

In the wake of the U.S. Supreme Court decision in the *Carbone vs. Clarkstown* case striking down waste flow control as unconstitutional, Dade County, Florida, one of the most severely impacted communities in the nation, has managed to stabilize its waste stream and balance its solid waste department finances; although the road taken to restabilization has been a difficult one.

At its peak in 1995, Dade County experienced an annual loss of solid waste in excess of 1,000,000 tons, or over 40 percent of the waste stream normally handled by the County. This diversion of waste was accompanied by a net revenue loss of \$30 million per year. The County lost its ability to plan for future capacity needs, or to assure sufficient future waste flows to meet its put-or-pay obligation to the County's Resources Recovery plant operator. The County's solid waste management system bonds were downgraded by Moody's Investors Service and Standard and Poors.

With the help of a special solid waste management team, appointed by the County Manager, the department was able to rightsize its waste disposal operations to fit its reduced waste flows, stabilize its waste stream, and develop strategies to solve its long-term funding shortfall.

INTRODUCTION

Like many communities across the country, Dade County, Florida, has had to scramble to stabilize its solid waste management system (System) following waste diversion to disposal facilities in other jurisdictions. The U.S. Supreme Court's 1994 decision in the *Carbone vs. Clarkstown* case, striking down waste flow control (WFC) as unconstitutional, effectively foreclosed the use of WFC authority to solve Dade's waste diversion problem. The rapid and dramatic reduction in waste flow to County facilities forced the County to "rightsized" its disposal operations, find ways to stabilize its waste stream, and develop supplementary funding sources to fill the widening gap in its solid waste management budget. Understanding the Dade County experience in coping with waste diversion and lack of WFC authority may help other communities that are faced with similar challenges.

ORIGINS OF THE COUNTY'S SOLID WASTE SYSTEM

The Metropolitan Dade County form of government was established through amendment to the Florida State Constitution in 1956. Article 1, Section 9, of the Charter gave the Board of County Commissioners the power to provide and regulate, or permit municipalities to provide and regulate waste collection and disposal. At the time the Charter was adopted, solid waste disposal in Dade County was a sparsely regulated private and municipal activity. Commencing in the 1960's, federal, state, and local governments responded to the general public's increased environmental awareness, and concerns regarding the need for more aggressive efforts to protect the environment. The resulting regulatory climate left Dade County with over two dozen solid waste disposal facilities operating in an environmentally unacceptable manner

by 1970. Only the County's Northeast Incinerator was operating in full compliance with mandated environmental regulations.

This situation prompted the creation, by the county manager, of the Solid Waste Management Task Force to review solid waste disposal and collection practices in Dade County. While the Task Force was in the process of soliciting requests for proposals for a resources recovery facility, the 1974 state legislature enacted the Florida Resource Recovery and Management Act (Act) which required cities and counties in Florida to adopt local resource recovery and management programs for approval by the state. The Act promoted the use of interlocal agreements between cities and counties to define which local agency would administer the program. The Act required, however, that if no interlocal agreement had been effectuated or special act become law by December 1, 1978, the Board of County Commissioners would be responsible for, and administer the program. Moreover, the Act prohibited cities from withdrawing from programs if bonds had been issued to finance solid waste management facilities by the December date, in reliance on the Act.

The County's program was adopted by the Board in 1979 and approved by the state in the same year. The program was accompanied by a WFC ordinance which allowed the Board of County Commissioners to designate a geographical area contiguous to a County solid waste disposal and resource recovery facility, for the purpose of directing waste generated in such area to the facility, if deemed necessary by the Board. The program included two major waste disposal facilities, a 3,000 ton per day waste-to-energy facility (refuse derived fuel) in northwest Dade and associated 80 acre ash monofill, and a 2,100 ton per day garbage and trash landfill (Class I) in South Dade. Three automated waste transfer facilities would also to be developed in strategic areas of the County to enhance waste collection efficiency and reduce trips to disposal facilities. The program was financed by 1972 Decade of Progress Bonds (\$50 million) and 1978 State of Florida Pollution Control Bonds (\$137 million). The 1979 program was amended in 1984 to include reactivation of the County's North Dade landfill (Class III) to handle trash generated in the northern portion of the County.

The 1974 Act was later superseded by the 1988 Solid Waste Management Act. The 1988 Act delegated to counties the "Responsibility and power to provide for the operation of solid waste disposal facilities to meet the needs of all incorporated and unincorporated areas of the county." The Act also provided that "Any local government which undertakes resource recovery from solid waste pursuant to general law or special act may institute a flow control ordinance for the purpose of ensuring that the resource recovery facility receives and adequate quantity of solid waste from solid waste generated within its jurisdiction." Furthermore, the Act included a recycling mandate for counties of 30 percent of their waste stream by 1994.

Adoption of the County's Comprehensive Development Master Plan (CDMP) in 1988, pursuant to the requirements of the 1985 Local Government Comprehensive Planning and Land Development Regulation Act (Growth Management Act), coincided with passage of the 1988 Solid Waste Management Act by the state legislature. The County's vision of creating a single integrated solid waste management system in Dade County, first articulated in the 1979 Resource Recovery and Management Plan, and later incorporated in the 1988 CDMP, had been nearly realized. The single remaining private solid waste management facility in the County, the United Sanitation, Inc. landfill in the City of Medley, Florida, was subject to a phase-out agreement with the County due to environmental problems, and was scheduled to be closed by the end of 1990.

The System facilities have been enlarged and improved upon since 1988, but no new facilities have been added. The Medley landfill continues to operate under an amended phase-out agreement, and the majority of environmental problems at the facility have been remedied by the operator.

THE CHANGING SOLID WASTE MANAGEMENT ENVIRONMENT

The state of relative stability in countywide solid waste management that existed during the 1980's was short-lived. In 1991, two large waste-to-energy facilities (approximately 800,000 tons per year each) became operational, immediately to the north, in Broward County. The new facilities are owned and operated by Wheelabrator Technologies, Inc., a subsidiary of WMX Technologies, Inc. (previously Waste Management, Inc.). These facilities were built in response to the solid waste management needs of Broward County, one of the fastest growing counties in the country.

Since Broward County's charter did not specifically delegate the power to provide and regulate waste disposal to county government, the County entered into interlocal agreements with all but four of its municipalities to provide waste to Wheelabrator. In its agreement with Wheelabrator, the County pledged to provide a specified amount of waste, on a put-or-pay basis, for a period of 20 years. This contractual arrangement enabled Wheelabrator to secure financing for its facilities.

While the facilities were built to accommodate Broward's increasing waste stream over time, significant excess capacity would be present initially. Those municipalities participating in the agreement paid a tipping fee rate sufficient to cover the fixed costs of the facilities; \$76 per ton in 1995. Therefore, the excess or "merchant capacity" could be sold on the open market by the operator at "spot market" prices. Broward derives a financial benefit from the sale of merchant capacity, in that, to the extent the County is unable to satisfy its waste delivery obligation, fees from merchant tonnage offset its payment to Wheelabrator.

Wheelabrator substantially undercut Dade's \$59 per ton tipping fee, and rates as low as \$38 per ton were common. At the same time, other regional disposal facilities opened their facilities to waste from Dade County. At its peak in 1995, the diversion of waste from Dade County exceeded 1 million tons per year, or just over 40 percent of the County's normal disposed waste stream, and the potential existed for even greater waste diversion in the future (refer to figure 1).

FINANCIAL IMPACTS RESULTING FROM WASTE DIVERSION

The County's solid waste management system was sized to accommodate a waste stream of 2.3 million tons per year, and planning for capacity increases was an ongoing effort. The system was funded through the sale of revenue bonds as well as industrial development bonds, approximately \$300 million of which were outstanding when waste diversion began in 1991. The revenue stream from waste disposal fees was pledged for repayment of the bond debt.

Approximately half of this outstanding debt was used for landfill capacity, landfill closure, and waste transfer facilities. The remainder was set aside for construction projects at the County's Resources Recovery facility, such as, installation of a new air quality control system, stormwater management improvements, and expansion of plant capacity. Since the debt service cost on the bonds was fixed, declining waste tonnages were not directly offset by decreased expenditures.

The County's initial reaction to the waste diversion phenomenon was to take steps toward development of a means to fund the system's fixed costs that was not tied to waste flow. In August 1993, the County issued a request for proposals for development of a solid waste special assessment district. The County intended to levy special assessments on all improved properties that have the potential to generate waste for disposal. A consultant was hired to complete the project, however, due to strong popular opposition to the concept, only preliminary waste generation factors by land use type were developed; thereafter the project was abandoned. Although the County had a WFC ordinance in its solid waste management code, the pending U.S. Supreme Court case on WFC was a deterrent to active implementation of the ordinance.

By 1995, the County was forecasting an average annual budget shortfall in its department of solid waste management of \$30 million. Moody's Investors Service downgraded the County's solid waste revenue bonds from A to Baa1 and Standard and Poors downgraded the bonds from A to BBB+. At this point, a Special Solid Waste Management Team, appointed by the County manager, consisting of the most senior Assistant County Manager and the County's Deputy Budget Director, was assigned to the department of solid waste management to "rightsize" the department and develop strategies to solve the long-term funding shortfall.

RIGHTSIZING AND STRATEGIC PLANNING PHASE I

In March of 1995 the Department eliminated 225 positions, primarily in disposal operations, support functions and administration. All non-essential capital projects were either deferred or eliminated. In April 1995, the Board of County Commissioners gave conceptual approval to the Phase I Strategic Plan for Dade County Solid Waste Management, identifying additional rightsizing initiatives, revenue enhancements and major business options. The key elements of the plan included restructuring of the department's debt to levelize debt service payments (refer to figure 2), renegotiation of the operations and management agreement with the County's Resources Recovery facility operator, and establishment of two additional sources of revenue to the department to pay fixed System costs.

Restructuring of the department's debt was accomplished in 1997. The County's existing Utility Service Fee, used to fund groundwater protection activities charged on the water and sewer bill, was increased by from 4% of user charges to 7.5%, with the additional revenue going to fund landfill closure and related activities. The additional 3.5% generates approximately \$13 million annually. A Disposal Facility Fee program was also developed in which private solid waste haulers operating in unincorporated Dade County must pay a percentage of gross receipts (currently 10%) to the County to cover the costs of disposal capacity availability at County facilities. The Disposal Facility Fee generates approximately \$5 million annually.

Renegotiation of the Resources Recovery Agreement

In 1990, \$190 million in industrial development revenue bonds were issued for retrofit and expansion of the County's Resources Recovery facility. Installation of a new air quality control system (gas scrubbers and bag house) and a 50 percent capacity expansion were planned (2 additional boilers for a total of 6). Community concerns over the appropriateness of the expansion delayed the project to the extent that waste diversion became an issue as well. Along the way, the planned expansion was transformed into a planned trash-to-fuel facility whereby 270,000 tons of trash annually would be converted to a biomass fuel for energy production off-site. The trash-to-fuel project was much less objectionable to the surrounding community than the outright expansion of combustion capacity at the site.

The County then faced a situation where a facility valued in the hundreds of millions of dollars would have to be upgraded to meet federal air pollution control standards or be shut down, and the County had no means to assure adequate waste flow to the facility in the foreseeable future. Meanwhile, the plant operator, Montenay-Dade, Ltd., having been successful, along with the County, in convincing the community of the merits of trash-to-fuel over on-site combustion had entered into its own fuel delivery agreement with Okeelanta Corp. Okeelanta is a sugar producer in south central Florida that was building a waste-to-energy facility that would burn biomass fuel to create electricity for on-site use and export.

A grand compromise was struck between the parties that would allow for both retrofit of the Resources Recovery facility and development of trash-to-fuel. The new agreement, dated September 1, 1996, requires the County to deliver all the garbage available in the System, up to 936,000 tons, but no less than 572,000 tons. The County must also deliver a minimum of 400,000 tons of trash for trash-to-fuel and

on-site combustion, the on-site portion of which may be displaced by garbage (130,000 tons). The result is an overall annual minimum waste delivery requirement of 972,000 tons and a maximum of 1,206,000 tons depending on waste flow (refer to figure 3). The County's previous minimum annual waste delivery obligation was 936,000 tons. On the retrofit side, Montenay agreed to lower its processing fee for waste processed through the fourth boiler (for tons processed over 702,000), from \$25.19 per ton to \$21.33 per ton, as a concession for allowing the boiler to be retrofitted without assurance of waste flow.

STRATEGIC PLANNING PHASE II

Phase II of the strategic planning process involved two key elements: (1) long-term waste disposal agreements with municipalities and private waste haulers for disposal at County facilities, at a reduced \$45 contract tipping fee rate, and (2) long-term, low-cost, waste disposal agreements with regional waste disposal companies, to ensure disposal capacity availability for System waste without future capital outlays by the County.

Phase II - Part 1

Throughout the summer of 1995, the County engaged representatives of the Dade League of Cities, representing most of Dade's 26 municipalities, in a dialogue on a wide range of solid waste management issues. It soon became clear to County representatives that the municipalities, once captives of the System, had become somewhat hostile customers. The discussions, which proved healthy for all concerned, ultimately led to development of a standard interlocal agreement for use of the System by municipalities. The agreement was adopted by the Board of County Commissioners on September 14, 1995.

The standard interlocal agreement provided that each participating municipality would commit its waste stream to the System for a period of 20 years. A provision was included that allowed municipalities that had already contracted on a short-term basis with other waste disposal providers, to fulfill the terms of those contracts and then return to the System. The County pledged to provide sufficient capacity to meet the growth management needs of each participant at a per ton fee of \$45, with no increases in the Consumer Price Index until October 1, 1998, which increases would then be capped at 5 percent per year for the duration of the agreement. In order to address the possibility that certain of the System facilities may be phased-out, the agreement established the right of the County to direct municipalities to particular facilities; provided that no municipality would have to deliver its waste to a facility that was farther than 20 miles from its nearest boundary. To date, 18 municipalities have entered into interlocal waste disposal agreements with the County, including Dade's two largest municipalities, Miami (180,000 tons annually) and Hialeah (70,000 tons annually). The total annual waste committed to the System under these agreements is approximately 420,000 tons (refer to figure 4).

In addition to securing waste commitments from municipalities, the County pursued its largest waste hauler, Browning-Ferris Industries, Inc. (BFI). BFI controlled approximately 520,000 tons, or 23% of the waste generated in the County. In 1995 approximately 175,000 tons of BFI's waste was being disposed of at County facilities, however, BFI was under no obligation to continue to deliver this waste to the County. The remainder of BFI's waste, approximately 345,000 tons, was being diverted to other facilities. BFI was eager to discuss a waste commitment to the County, provided the County would allow BFI to construct its own waste transfer facility. Without such a facility, BFI could not take advantage of transportation efficiencies that accompany the use of large capacity long-haul vehicles.

The County maintains countywide authority for environmental permitting through its department of environmental resources management, which acts as the local regulatory agency for the state department of environmental protection. The solid waste department is a review agency for resource recovery and management facility permits, as stipulated in the County Code. The department reviews each application

for its anticipated impacts on the system from contractual, financial, and regulatory perspectives consistent with County bond ordinances and the County Charter. Through a process of negotiation between the County and BFI, a waste commitment scenario was arrived at that would mitigate the potential adverse impacts of the transfer facility on the System.

On October 17, 1995, BFI and the County entered into a 20 year waste disposal agreement. The agreement requires BFI to deliver 300,000 tons of waste to County facilities annually, a 42 percent increase in tonnage, all of which is committed to the system (refer to figure 3). The agreement also requires that 100,000 tons of the waste be delivered to County transfer facilities. The transfer facility delivery requirement enables the County to optimize the use of its existing transfer facilities. BFI's waste transfer facility was approved by the County and is currently in operation.

Phase II - Part 2

Part 1 of the Phase II strategic planning process has resulted in stabilization of the County's waste stream at approximately 1.6 million tons annually. Figure 3 shows the committed portion of the waste stream and its sub-components. The largest committed component is waste collected from the area of unincorporated Dade served by the County's own forces (613,000 tons annually). Other committed tonnages include: municipalities (417,000 tons annually), Browning-Ferris Industries (300,000 tons annually), Waste Management Inc. of Florida (88,000 tons annually under a 1987 agreement), and County agencies (87,000). The remainder of the 1.6 million tons consists of waste delivered by private haulers and others that is uncommitted (100,000 tons annually). The County's tipping fee for uncommitted waste is \$59 per ton, \$14 higher than the fee for committed waste.

Part 2 of the phase II strategic planning process focused on the County's transition from development of County owned facilities to fulfill future capacity needs, to contracting for this capacity with large waste disposal companies in the South Florida region. This fundamental change in the County's waste management philosophy is a practical outcome of the lack of WFC. The change allows the County guaranteed access to large volumes of waste disposal capacity, at low cost, without having to take on the debt required to construct, staff, and maintain a facility. The County can also preserve its existing landfill capacity for contingency purposes, and as leverage when negotiating future waste disposal agreements.

On October 27, 1995, the County entered into a 20 year waste disposal agreement with Waste Management Inc. of Florida at a tipping fee of \$24.50 per ton. The agreement allows the County to dispose of up to 500,000 tons of solid waste annually at Waste Management's two regional landfills. The County must deliver a minimum of 100,000 tons of waste annually under the terms of the agreement. The agreement contains two five year options to renew upon mutual consent.

On December 29, 1995, the County entered into a one-year agreement with Wheelabrator South Broward, Inc. at a tipping fee of \$26.50 per ton. The agreement contains six one year options to renew at the sole discretion of Wheelabrator, and three additional one year options to renew upon mutual consent. If Wheelabrator desires, the County must deliver up to 100,000 tons of waste annually. The unusual structure of this agreement is due to the fact that the Wheelabrator facility is a waste-to-energy facility, which may or may not require additional waste from Dade depending on market forces. Since the County's tipping fee rate with Wheelabrator is low, Wheelabrator has an incentive to attract other waste streams that are willing to pay higher fees, therefore displacing Dade's waste.

Conclusions

As the most populous county in Florida (over 2 million people), Dade County has always tried to take a leadership role in its approach to fulfillment of state and federal solid waste management initiatives. The solid waste management system built by Dade County is second to none in this regard. Environmental

protection and community awareness of fundamental environmental issues such as groundwater protection and air quality have been primary objectives of the County's solid waste program since the 1970's.

Converting from disposal fee based funding to other sources is extremely difficult for local government, and its degree of difficulty should not be underestimated or simply ignored. Quilting together long-term waste commitments through interlocal agreement or contract is also a long and arduous process. Moreover, while providing encouragement, bond rating agencies have been unwilling to raise ratings based on Dade's newly implemented funding and waste stream stabilization program.

The County dutifully accepted its responsibility for countywide solid waste management, and has had to find creative ways to pay for facilities that were built in sole reliance on a revenue stream based on waste flow control. The level and scope of the County's investment in solid waste disposal facilities was driven by state and federal mandates. And let's not forget the U.S. Environmental Protection Agency's hierarchy of waste management methods which touts combustion over landfilling as a more desirable waste management option.

The fact that the U.S. Supreme Court decided against the interests of local government in the *Carbone vs. Clarkstown* case is no one's fault. But that does not mean that no one has a responsibility for properly managing the impacts of that decision. Just as local governments step up to the plate to fulfill state and federal mandates, the higher levels of government should ensure that appropriate legislation is passed to protect local governments when they are hurt as a result of their participation in furthering a larger social agenda.

Many point to Dade County's experience in coping with the loss of waste flow control as evidence that no action by Congress is needed. But in fact, Dade County faces two potential threats to the stability of its solid waste management system without WFC flow control:

1. Dade County is experiencing a watershed of incorporation and annexation activity. Most incorporations are on hold pending further study by the County of their potential effects on the remainder of the unincorporated area. In February 1996, the County passed an ordinance which allows the County to maintain control over waste generated in newly incorporated municipalities. The waste collected from within the unincorporated area of Dade County is the single largest component of committed waste tonnage to the system.
2. By ordinance, the County does not allow the development of private solid waste management facilities in Dade County in instances where a facility's operation would have an adverse impact on the System.

While the County Attorney's Office has found both of these ordinances to be legally sufficient, a successful legal challenge to the County's authority in these areas remains a possibility. The County endorses Congressional legislation establishing WFC to the extent necessary in order for any municipality or county to retire debts incurred based on a state solid waste management act, or other state or federal laws, or regulatory requirements regarding local government solid waste management responsibilities.

References

1. The Home Rule Amendment and Charter, as amended through March 16, 1993. Metropolitan Dade County, Florida.

2. Official Florida Statutes 1995. Published by the State of Florida, Tallahassee.
3. The Strategic Plan for Dade County Solid Waste Management (Phase I), March 31, 1995; Adopted the Board of County Commissioners, April 4, 1995; Resolution number R-410-95.
4. Third Amended and Restated Operations and Management Agreement by and between Metropolitan Dade County, Florida and Montenay-Dade, Ltd., September 1, 1996; Resolution number R917-96.
5. Interlocal Agreement Between Metropolitan Dade County and Contract Cities for City Use of the County Solid Waste Management System, Adopted by Board of County Commissioners, September 14, 1995; Resolution number R-1198-95.
6. Non-Exclusive Agreement Between Metropolitan Dade County, Florida and Browning-Ferris Industries of Florida, Inc. for Commitment to Use the County Solid Waste Management System for Municipal Solid Waste Disposal, October 17th, 1995.
7. Non-Exclusive Agreement Between Metropolitan Dade County, Florida and Waste Management Inc. of Florida for Provision of Municipal Solid Waste Disposal Services, October 27, 1995.
8. Non-Exclusive Agreement Between Metropolitan Dade County, Florida and Wheelabrator South Broward, Inc. for Provision of Municipal Solid Waste Disposal Services, December 29, 1995.

DEPARTMENT OF SOLID WASTE MANAGEMENT DISPOSAL REVENUE TONS (BY THOUSANDS)

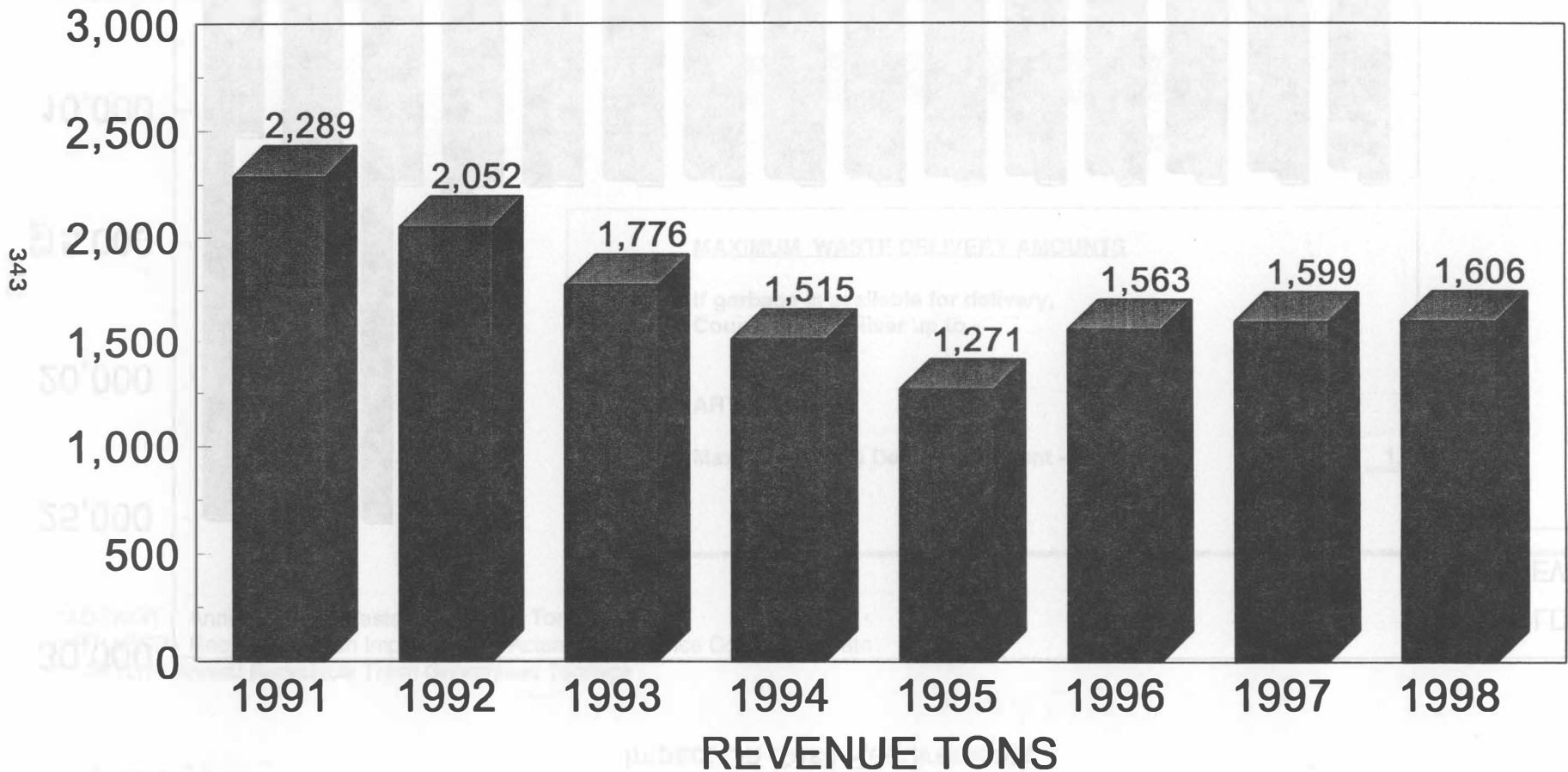


Figure 1

DIRECT OBLIGATION DEBT REFINANCING Impact On Cash Requirements

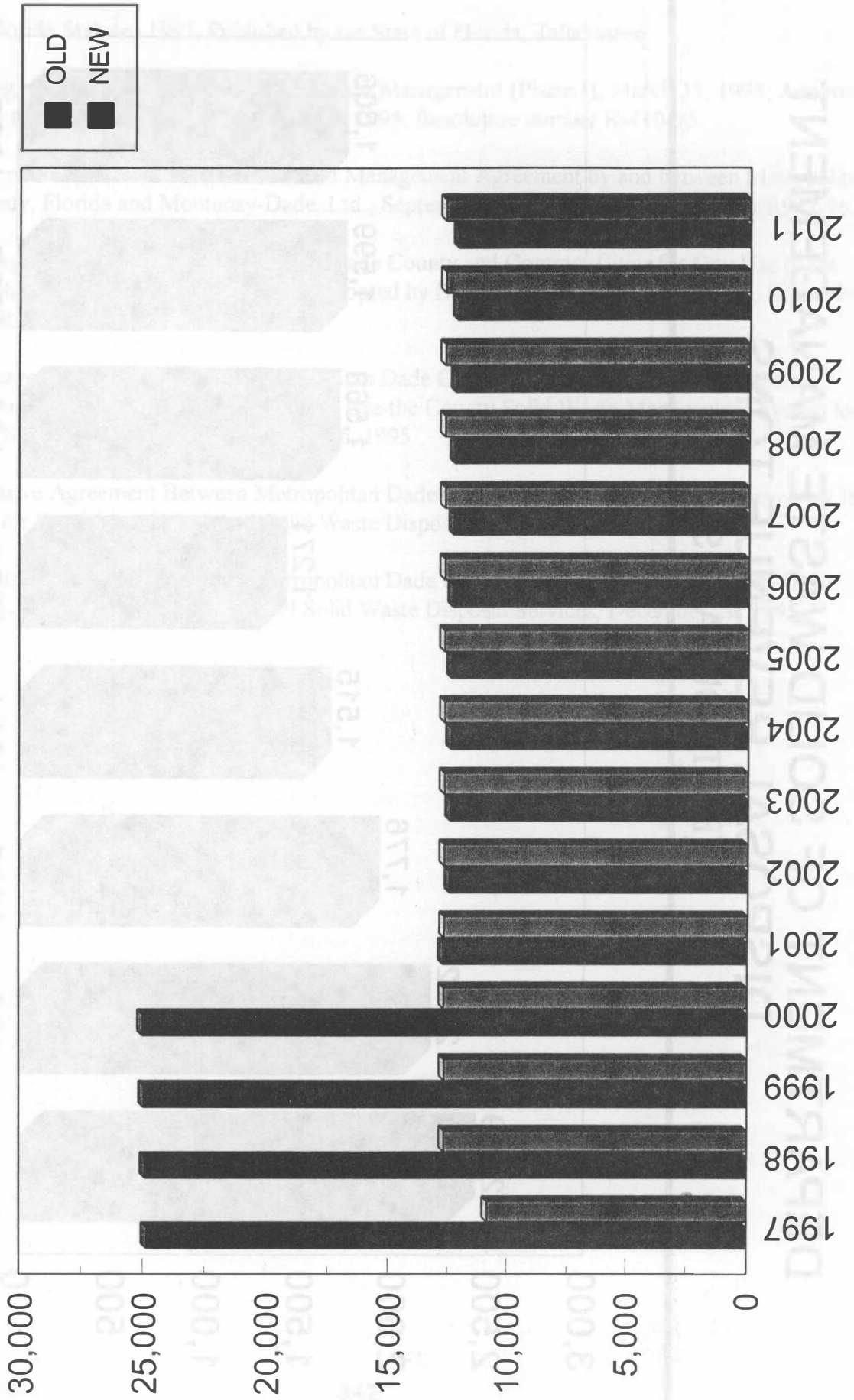


Figure 2

**DADE COUNTY, FLORIDA
RESOURCES RECOVERY FACILITY
GARBAGE AND TRASH COMMITMENTS**
September 1, 1996

From:
September 1, 1996

After:
RTIAPCD**

AOSWGT*	Garbage Minimum	572,000
	Trash Maximum	364,000
Total		936,000

AOSWGT	Garbage Minimum	572,000
	Trash Maximum	130,000
	Subtotal	702,000

ARTGT***	270,000
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Total	972,000
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MAXIMUM WASTE DELIVERY AMOUNTS

If garbage is available for delivery, County must deliver up to -	936,000
ARTGT -	270,000
Maximum Waste Delivery Amount -	<u>1,206,000</u>

*AOSWGT - Annual On-site Waste Guaranteed Tonnage

**RTIAPCD - Recyclable Trash Improvements Actual Performance Completion Date

***ARTGT - Annual Recyclable Trash Guaranteed Tonnage

Figure 3

DEPARTMENT OF SOLID WASTE MANAGEMENT COMMITTED TONNAGES

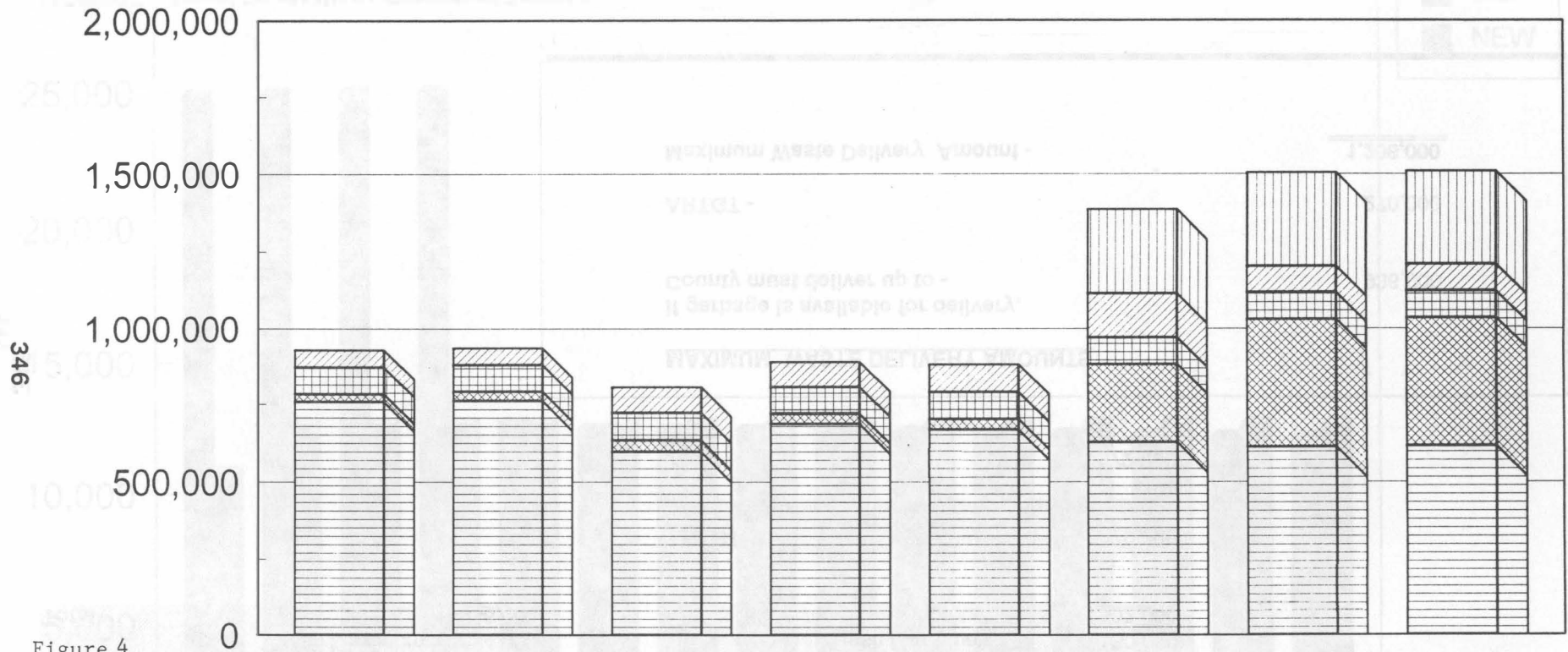


Figure 4

	1991	1992	1993	1994	1995	1996	1997	1998
UNICORP.	758,193	761,700	596,926	687,843	669,661	628,969	613,000	616,000
MUNICIPAL	27,153	31,022	38,004	33,172	34,212	255,332	417,865	421,000
WMI	88,400	88,400	88,400	88,400	88,400	88,400	88,400	88,400
CNTY. AG	57,312	57,446	86,088	83,138	92,214	143,994	86,667	86,400
BFI						272,684	300,000	300,000