Financial Incentives to Increase Recycling
The Volume-Based Waste Fee System in Urban Areas

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MSW hauling costs New York City $1 billion annually

- Collection: $228/ton
- Tip Fees: $90+ dollars/ton (& rising)
- Long-Distance Hauling: $305 million/year

PlaNYC sets out ambitious goals

- Double recycling by 2017 from 15→30%
- Reduce MSW volume 75% by 2030

New York City Is not on track
Philosophy of VBWF Programs

The **Volume Based Waste Fee** (VBWF) model charges a variable rate for waste collection and disposal depending on volumes produced. Recycling is provided for free.

**Benefits of VBWF (volume-based waste fee) system:**

- Reduces waste and improves recycling via simple market incentives
- Enhances awareness of costs associated with MSW production
- More equitably distributes costs of disposal among highest users
Adoption of VBF Programs

Growing in popularity
Available to about 25% of the US population— including programs in 30 of the largest 100 cities in the US

70% growth between 1997-2006

Simple and Effective
PAYT programs reduce residential MSW by approximately 17% mass

- Increase in recycling programs,
- Diversion to yard waste composting programs
- Reduction in nonrecyclable waste
Since bag-based PAYT/VBWF was applied in 1991:

- Cut landfilling 50% the year introduced
- Recycling rate steady at 41%
- Elimination of line item tax for waste disposal

The Department has managed to maintain services, while cutting personnel by 25%. We have gone from a community that landfills all waste, to a community that is a respected leader among its peers. Each year the City provides information to numerous communities on the success of our program. Plus, according to the New York State Department of Environmental Conservation, the City stands in the top 20% of communities similar in size throughout the State.

Although these accomplishments are significant, there is still a great deal of room for improvement. The need to continue to strategically plan for the future is self-evident, and several areas need to be addressed. These areas are highlighted in the future planning section of this report.

1990 proved to be the year of administrative research and decision making which would shape the sanitation and recycling programs' future. First, on January 2, 1990, the tipping fee at the Broome County landfill rose to $35.00/ton. Second, the City continued extensive research into program alternatives that would provide a more equitable system of distributing costs, as well as begin a strong recycling effort.

Initially, DPW representatives visited the following communities to review their sanitation and recycling programs; Buffalo, Toronto, Ithaca, Syracuse, and Utica. They also spent countless hours reviewing current survey and research data pertaining to program areas that could be affected in the future.
Since sticker-based PAYT/VBWF was applied in 2011:

- **Solid waste reduced by 42%**
- **Recycling rate improved from 29% to 54%**
Suburbs Versus City
Suburbs Versus City
Urban Case Study: South Korea

Since bag-based PAYT/VBWF was applied in 1995:

- Per capita waste reduced by 26% to 2.2lbs/day
- Total recycling rate increased by 213%
Urban Case Study: South Korea

Bags ranging from 3 liters ($0.06) - 100 liters ($2.10) available at stores

Recyclables and organics banned from MSW disposal

Yoonjun Seo: Current MSW Management and Waste---to---Energy Status in the Republic of Korea
Global Ladder of Sustainable Waste Mgmt

Sandwich, MA
South Korea
New York City

Priorities for NYC Program

- Encourages recycling and waste reduction
- Fits existing collection infrastructure
- Uniform program across the city
The future scenario:

• City mandates building owners discard MSW in licensed 30-gallon bags

• Tiered System
  • Initial allocation based on 50% recycling rate
  • Additional bags available for purchase

• Free recycling

• Escalating fines for noncompliant buildings
VBWF in NYC: Challenges

• Political pressure from property owners
• Potential for illegal dumping increases.
• Requires New enforcement system
• Residents in multi-family buildings insulated from the direct costs
Columbia owns over 7,800 apartments serviced by DSNY curbside

Initial program would focus on participation and measurement, not yet charging for licensed bags

**Goals**

1. **Benchmark** changes in waste and recycling in select buildings at Columbia.

2. Determine **feasibility** of licensed MSW bags to support recycling.
VBWF Pilot Program: DSNY & Columbia

• Distribute specially marked, sequentially numbered 30-gallon bags to building managers/superintendents

• Incentive: Competition with prizes for building manager & residents who perform best

• Winners are buildings that
  1. Use fewest bags per unit
  2. Reduce MSW volume the most from baseline
VBWF Pilot Program: DSNY & Columbia

9-Month Trial for 2,000 Units

- **Market survey** with superintendents about waste volumes and bag usage
- **Procuring licensed bags** and organizing materials for building-level activities
- **Baseline survey**: 1 month of data from waste trucks serving Columbia, and on-street audits
- **Educational push** in buildings and distribution of materials to superintendents
- **Pilot program**: 4-month pilot program measuring bags used and volume of MSW/recyclables
- **Results analysis** for future programs
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