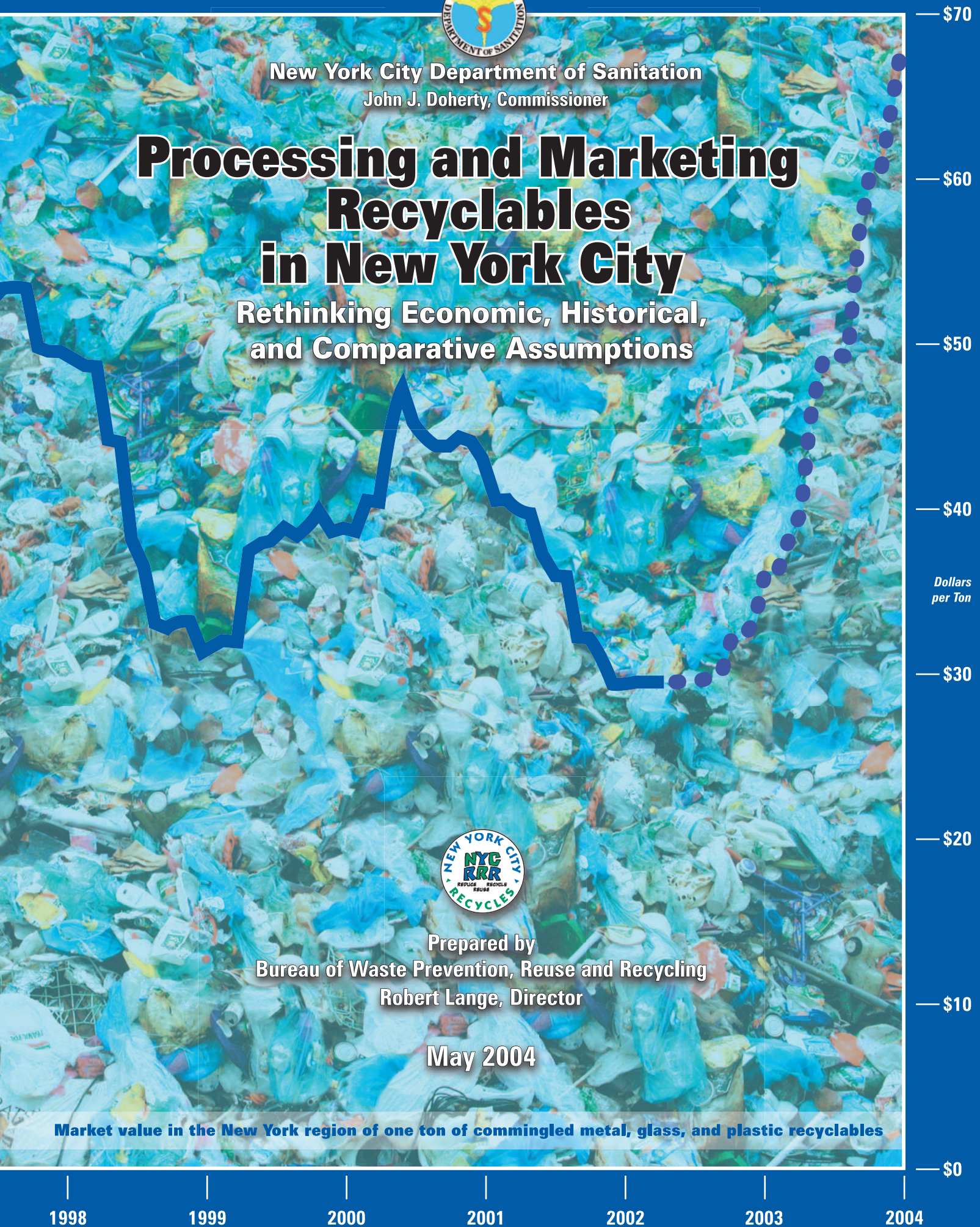




New York City Department of Sanitation
John J. Doherty, Commissioner

Processing and Marketing Recyclables in New York City

Rethinking Economic, Historical,
and Comparative Assumptions



Prepared by
Bureau of Waste Prevention, Reuse and Recycling
Robert Lange, Director

May 2004

Market value in the New York region of one ton of commingled metal, glass, and plastic recyclables



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About the cover: The cover shows the volatile market price of an average ton of NYC commingled recyclables between 1991 and June 2002. The dotted line indicates prices extrapolated to 2004 although only metal was collected between July 2002 and June 2003; and only metal and plastic were collected between July 2003 and March 2004.

The graph reflects market prices for secondary, post-consumer metal, glass, and plastic in the New York area, as published in *Recycling Manager*, a trade publication, adjusted to account for the composition of NYC's commingled stream, as follows: Brown glass, 2.00%; Green glass, 5.00%; Clear glass, 10.00%; Mixed cullet, 40.93%; Used steel/bimetal cans, 17.28%; Aluminum cans/foil, 0.67%; Mixed HDPE, 5.35%; Natural HDPE, 1.32%; Mixed PET, 2.45%; Residue, 15.00%. This composition is an estimate used for demonstration purposes only. The market price is shown without including collection, processing, or other associated recycling costs.

The data are presented against a backdrop of a photo of NYC commingled metal, glass, and plastic taken in 2001.

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The following appendices are in PDF format on the CD accompanying this report:

New York City Department of Sanitation, Office of Operations Planning, Evaluation, and Control, *New York City Recycling Strategy White Paper*, January 1988.

New York City Department of Sanitation, Office of Operations Planning, *Preliminary Recycling Plan, Fiscal Year 1991*.

New York City Department of Sanitation, *A Comprehensive Solid Waste Management Plan for New York City and Final Generic Impact Statement*, August 1992.

New York City Department of Sanitation, *A Comprehensive Solid Waste Management Plan for New York City and Final Generic Impact Statement, Appendix Volume 4.1, Waste Management Components*, August 1992.

Urban Research Center, New York University/Applesed for the New York City Department of Sanitation, *Exploring Economic Development Opportunities in Recycling*, August 1993.

Director's Note

Since New York City's Recycling Law (Local Law 19) passed in 1989, much discussion and debate has focused on the *front* end of the municipal recycling process—participation, public education, and the diversion rate.

In recent years, there has been public concern about the under-performance of low-diversion districts, and a great deal of interest in how New York City's overall diversion rate compares to other jurisdictions. In the mid-1990s, the Natural Resources Defense Council (NRDC) brought a series of suits against the City for failing to attain tonnages mandated in Local Law 19 of 1989, and to ensure that the City does not include in its diversion figures the reuse and recycling of millings and construction debris. During this period, attention was also focused on the Department's public education programs and efforts.¹

But what are the overall economic structures that are needed to keep recycling functioning in New York City? In other words, what does it take to make recycling work after residents place materials at curbside? *Processing and Marketing Recyclables in New York City* seeks to address this underexamined area. Its core argument is that the material qualities of residential recyclables in New York City, as well as the volatile nature of recycling markets, make securing stable, long-term, primary processing capacity *the most crucial aspect* to ensuring the viability of recycling in the City's future.

This report makes the case that firms who undertake the challenge of primary processing have to be prepared for a massive stream of mixed materials that will—as in all megacities²—contain contamination. And they must understand that the recycling economy is multi-scalar; to work locally, it also has to work nationally and globally. For better or worse, cities in today's world are, in the words of one political scientist, “glocal.”³ This argues against economic development plans where the success or failure of recyclers and remanufacturers rides on their ability to buy and sell within New York City limits only.

Even though April 2004 saw the full return of NYC's recycling program, the future of recycling continues to be debated among citizens, environmental groups, legislators, public officials, and waste-related businesses that together contribute to waste policy in New York City. Decisions about how to best strengthen recycling in New York City require a solid understanding of the economic, political, and historical background of recycling in the City. The goal of this report is to contribute to this understanding.

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San Francisco

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Norcal Waste Systems, Inc.

Seattle

Photo 3-24—Seattle Public Utilities

Other

Photo 1-4—Phoenix Recycling Inc.

Photo 1-5—Waste Service NSW

Photo 1-8—Tomra North America

Photo 2-9—beercans.org

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Abbreviations and Definitions

AC	Asphalt Concrete
automated collection	Collection carried out using a mechanized arm or other device that lifts waste carts, tips contents into trucks, and replaces waste carts
beverage cartons	Laminated-paper beverage receptacles, including gable-top milk and juice cartons and aseptic containers
BFI	Browning-Ferris International
BWPRR	Bureau of Waste Prevention, Reuse and Recycling (formerly known as the Recycling Programs and Planning Division)
C&D	Construction and Demolition debris
capture rate	Percentage of items recycled out of all the recyclables present in the waste stream. The amount of recyclables in the waste stream is based on waste-composition sampling.
CENCY	Council on the Environment of New York City
CIWMB	California Integrated Waste Management Board
Community District/ Sanitation District	One of the 59 administrative districts of NYC whose Boards advise Borough Presidents and City agencies on planning and services. Sanitation Districts, designated by the NYC Department of Sanitation for operational/administrative purposes, contain the same boundaries as community districts.
contamination	The presence of materials not designated for recycling in and among collected recyclables. These materials may include nondesignated plastics, food residues, and refuse items.
curbside	A form of waste collection that entails the set out of refuse or recyclables in cans, bins, carts, bags, or bundles adjacent to houses, buildings, or other structures, but most frequently on the curbside facing such structures, for manual, semi-automated, or automated collection
DCAS	NYC Department of Citywide Administrative Services
DEC	New York State Department of Environmental Conservation

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diversion rate	The portion of total discarded materials collected by the NYC Department of Sanitation that is diverted from disposal through recycling or composting. The diversion rate is measured by dividing the weight of collected recyclables by the weight of collected refuse plus recyclables.
DOT	NYC Department of Transportation
DSNY	NYC Department of Sanitation
DSS	Department of Streets and Sanitation (Chicago)
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
ESDC	Empire State Development Corporation
glassphalt	Asphalt that is created using mixed cullet glass as one of the inputs
HDPE	High-density polyethylene, one of the resins collected by DSNY for recycling
ILSR	Institute for Local Self-Reliance
IPC	Intermediate Processing Center, also referred to as MRF
LDC	Local Development Corporation
linerboard	The smooth layer of facing on corrugated cardboard
Local Law 19	Local law passed in 1989 establishing New York City's residential and institutional recycling program
Local Law 11	Local law passed in 2002 temporarily suspending plastic, glass, and beverage carton collection from the Recycling Program
low-diversion district	Sanitation Districts with diversion rates below 12 percent
MFA	Materials For the Arts
MGP	Commingled household metal, plastic jugs and bottles, glass bottles and jars, and beverage cartons collected under DSNY's curbside and containerized recycling program
mixed cullet	Small pieces of mixed glass of various colors

Abbreviations and Definitions

MP	Commingled household metal, plastic jugs and bottles, and beverage cartons collected under DSNY's curbside and containerized recycling program
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
MTS	Marine Transfer Station
municipal solid waste	Refuse and recyclables generated by residents and public/nonprofit (institutional) entities
NDCA	Neighborhood Dry Cleaners Association
NRDC	Natural Resource Defense Council
NYCEDC	NYC Economic Development Corporation
NYPIRG	New York Public Interest Research Group
NYU Report	Hugh O'Neill and Meghan Sheehan, <i>Exploring Economic Development Opportunities in Recycling</i> , Urban Research Center, New York University/Appleseed, 1993
OPEC	DSNY Office of Operations, Planning, Evaluation and Control
ORMD	Office of Recycling Market Development within the Empire State Development Corporation. This work is now handled by the Environmental Services Unit of the same organization.
PET	Polyethylene Terephthalate, one of the resins collected by DSNY for recycling
post-consumer recyclables	Recyclables collected from residents, institutions, or commercial sources after they have been used
primary processing	First step in processing recyclables in which they are sorted and readied for marketing
processing	An operation or series of operations that enhances, sorts, cleans, or otherwise prepares recyclables for marketing
processor	Firm that engages in processing
RAP	Recycled Asphalt Product
RCRA	Resource Conservation and Recovery Act

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recyclables	Paper and MP, MGP, or any combination of metal, glass, plastic, and beverage cartons designated under the curbside and containerized recycling program and set out by residents and institutions, whether sorted or unsorted, loose, bundled, bagged or baled, and any contamination contained therein
recycle or recycling	Any process by which waste is separated, collected, processed, marketed, and returned to the economy in the form of raw materials or products, including but not limited to metal, glass, paper, plastic, food waste, yard waste, and tires
recycling program	The DSNY-managed program for the curbside and containerized collection of designated materials
refuse	All putrescible and non-putrescible materials or substances that are discarded or rejected as being spent, useless, worthless, or in excess to the owners at the time of such discard or rejection, unless expressly exempted as such in Local Law 19
resin	Category of plastic, used to denote chemical composition
reuse	Separating, collecting, repairing, marketing, and returning a product or item to the economy in its original form, or after it is repaired or otherwise reconditioned. Reuse does not include recycling.
RPPC	Rigid Plastic Packaging Containers
SAIC	Science Applications International Corporation
secondary materials	Processed recyclables that are sold on markets
semi-automated collection	Collection carried out using a mechanized arm or other device that assists personnel to lift waste carts or bins
SPU	Seattle Public Utilities
SWMP	New York City Solid Waste Management Plan
the "Program"	NYC recycling program
ULURP	Uniformed Land Use Review Procedures
waste	All refuse and recycling generated by residents, institutions, commercial sources, and/or industrial processes

Abbreviations and Definitions

waste prevention	The practice of reducing waste by preventing its creation. This includes: buying products that have the least amount of packaging or are packaged to last longer; not buying more of a product than needed; reusing, donating, or repairing items that might otherwise be discarded as trash or for recycling.
WMI	Waste Management, Incorporated
WTE	Waste-to-energy; incineration with energy recovery
yard waste	Waste comprising leaves, brush, trees, grass clippings, earth, or other organic debris from yard or gardening work