

ATTACHMENT VI
RECYCLING

RECYCLING

1.0 STATUS OF CURRENT PROGRAMS

1.1 Waste Prevention Programs

More detailed information on DSNY's waste prevention program is available on line at <http://www.nyc.gov/html/dos/html/recywprpts.html#9>

1.1.1 Overview

Many waste prevention lessons were learned over the past 15 years, including the following:

- Focus must be placed upon behavior change and not on conceptual understanding. DSNY's waste prevention focus groups and survey research in 1996 found that the term *waste prevention* is not well understood by New Yorkers. Therefore, DSNY focused on asking New Yorkers to consider specific waste prevention practices (e.g., buying second-hand goods) and services (e.g., utilizing the NYC Stuff Exchange), and provided reasons why the practices or services are worthwhile (e.g., money savings). DSNY's public education approach also reflects findings presented in a King County, Washington report on *Changing Behavior: Insights and Applications*, which suggests focusing on showing people what they lose by not preventing waste, telling success stories, and appealing to emotions. DSNY's waste prevention website (www.nycwasteless.org) and other public education initiatives are designed accordingly, to inspire and empower people to take practical actions.
- Encourage New Yorkers to take responsibility to prevent waste, and provide examples that show how they have the power to do so. DSNY's public opinion research suggests that most residents believe waste prevention should be left to manufacturers and legislators. Therefore, DSNY has sought to tailor messages and methods to communicate opportunities for residents to take on the responsibility to prevent waste, and to show New Yorkers how they can assert their power to prevent waste.
- Consider stakeholders beyond DSNY. DSNY recognizes that many initiatives are beyond the scope of a local government's solid waste agency acting on its own. Whether at the federal, state or local level, public and political support is necessary. Examples of initiatives beyond the direct control of DSNY include implementing the European approach that requires manufacturers to take back various items (e.g., computers, tires, packaging), charging advanced disposal fees (e.g., tax packaging and other items as a waste prevention incentive), and instituting quantity-based user fees for residents and institutions.

- Focus on money savings. DSNY’s market research indicates that most New Yorkers feel that environmentally beneficial products often cost more than “regularly” packaged items. It is important for DSNY to provide examples of waste-preventing products that are both practical and cost effective. DSNY has sought to convey this message through programs such as NYC WasteLe\$\$ Business and NY Wa\$teMatch – and will continue to rely on this message as an important theme to promote waste prevention. Further, waste prevention, including reuse of durable items, can generate jobs and economic wealth in addition to solid waste reduction. This highlights the importance of developing programs that are at least in part sustained by the private sector and organizations with a stake in generating this wealth. This maximizes the cost-effectiveness, sustainability and impact of programs that receive DSNY funding.

- Target all sectors of the City. A lesson learned from DSNY’s study is that there are waste prevention opportunities within all sectors of society – including the general public, tourists, schools, large and small businesses, government and other institutions. By targeting the broadest possible spectrum of waste generators, DSNY maximizes the potential for waste prevention.

- Spend resources wisely. While it is important to target all sectors, it also is important to spend resources on those initiatives most likely to result in the cost-effective prevention of waste. This is particularly challenging, however, given the obstacles of measuring waste prevention achieved by any one initiative, as learned in DSNY’s 2000 consultant study on *Measuring Waste Prevention in New York City*. DSNY’s research on waste prevention measurement demonstrates that different programs can be expected to yield varying results at varying costs, and that the results of waste prevention efforts may not always be measurable or cost effective.

- Continue Community-Based Efforts. The term *community-based social marketing* has emerged to characterize an approach to encourage environmentally desirable (i.e., sustainable) behaviors. This approach is based on the premise that initiatives to promote behavior change (e.g., voluntary waste prevention and recycling actions) can prove effective when they are carried out by community-based organizations, are service-oriented and otherwise involve direct contact with people. However, removing barriers to behavior change (e.g., inconvenience) and enhancing the benefits of these changes (e.g., charging user fees for trash removal from residents and institutions) are important components of success.

DSNY has sought to integrate community-based communication strategies into its programs where practical. Efforts include working directly with the City’s schools, civic organizations, business organizations and trade associations. DSNY also managed a City Council-funded Waste Prevention Community Coordinator Project.

1.1.2 New York Stuff Exchange

DSNY established a telephone system in 1999 called the NYC Stuff Exchange to promote reuse outlets throughout the City. The system provides information on the existing array of community, non-profit and charitable organization-based programs that accept or distribute donated items for reuse. The system also lists numerous organizations that offer rental and repair services. The NYC Stuff Exchange contains approximately 10,000 unique listings and can accommodate up to 64 callers at a time. Listings are drawn from the New York City Yellow Pages, with additional outreach to non-profit organizations.

The NYC Stuff Exchange was launched as a pilot program on Staten Island in October 1999 and expanded Citywide in April 2001. Advertisements were placed Citywide for three months in subway cars, subway stations and bus shelters, and inside buses and the Staten Island Ferry. Posters and information to solicit listings were distributed via direct mail and community outreach to a large number of non-profit organizations interested in receiving materials donations. Information about the NYC Stuff Exchange was placed on DSNY's website in 2001 and on DSNY's NYCWasteLe\$\$ website in 2002.

The Stuff Exchange initially averaged 100 calls per day in 2001. The system currently receives roughly 100 to 200 calls per month. This program demonstrates that there is a public demand for readily accessible information on where to donate, buy and sell second-hand goods in the City.

1.1.3 NY Wa\$teMatch

NY Wa\$teMatch, a DSNY-sponsored industrial materials exchange program, was launched in April 1997. The Industrial Technology Assistance Corporation (ITAC) is under contract with the City University of New York (CUNY) to manage the NY Wa\$teMatch program on behalf of DSNY. The Long Island City Business Development Corporation (LICBDC) was subcontracted by ITAC from 1997 through mid 2001 to provide technical assistance, marketing and materials exchange matchmaking assistance. Beginning in 2001, ITAC assumed full responsibility for all functions of the materials exchange in accordance with its ongoing funding agreement with DSNY.

Since its inception in 1997, NY Wa\$teMatch has diverted approximately 15,000 tons of material from disposal and helped program participants realize roughly \$2.3 million in savings and revenues. In Year 1, the program diverted 254 tons of material and generated \$110,000 of customer savings and revenues. By Year 7, it diverted 3,920 tons of material and generated \$840,599 in customer savings and revenues, as shown in Table VI 1.1.3-1.

**Table VI 1.1.3-1
NY Wa\$teMatch Program**

Period	Tons Diverted	Value of Materials
4/97-3/98	254	\$110,185
4/98-3/99	1,346	\$141,892
4/99-3/00	1,250	\$85,182
4/00-3/01	1,986	\$189,532
4/01-3/02	3,814	\$506,976
4/02-3/03	3,301	\$665,015
4/03-3/04	3,920	\$840,599

The transactions facilitated by NY Wa\$teMatch have been diverse. For example, one business donated 15 tons of paint, resulting in \$10,000 in avoided disposal costs and over \$35,000 in avoided procurement costs for City parks and nonprofit organizations. Another successful transaction involved the donation of washing machines and dryers from a renovated hotel to a nonprofit organization. The transaction resulted in avoided disposal costs and a tax benefit for the donor, and purchasing cost savings of more than \$9,000 for the recipient.

DSNY's investment in the program has been reduced from \$751 per ton in the first year to approximately \$36 per ton in the seventh. The decrease in cost to DSNY is largely attributable to the ability of NYWa\$teMatch staff to innovatively solve waste management challenges and to

meet DSNY's requirements to diversify its funding base. The diversified funding requirements are in recognition of the fact that much of the positive impact of NY Wa\$teMatch is cost savings for businesses rather than for DSNY. NY Wa\$teMatch staff continually develop new marketing strategies and target audiences, pursue new funding sources and institute cost-saving operational enhancements.

1.1.4 Materials for the Arts

DSNY continues to fund Material for the Arts (MFTA), a program established by the City's Department of Cultural Affairs (DCA) and supported with funding by DSNY and the City Department of Education, and with foundation and private sector funding. MFTA provides materials to non-profit arts organizations and schools in the City. Entering its 26th year, MFTA has been funded by DSNY since 1990. In accordance with a FY 1996 inter-agency agreement between DSNY and DCA, DSNY required MFTA to devise a long-range strategic plan and diversify its funding sources. MFTA raised more than \$800,000 between 1997 and 2004.

In 1997, MFTA and the Department of Education entered into an inter-agency agreement to expand access to public school art teachers, which required a larger facility to accommodate the increase in the number of people who can obtain donated materials during their visits to the warehouse. In 2000, MFTA moved to a 21,000-square-foot facility in Long Island City, Queens – doubling its space while expanding outreach to both donors and recipient groups. In its ongoing efforts to tie together the different facets of arts and environmental education, MFTA also conducts reuse education workshops with interested City teachers and other educators.

A non-profit organization, Friends of MFTA, was established in 2002 to assist MFTA with its fundraising efforts. Friends of MFTA is responsible for all funds raised from private sector and individual benefactors.

A \$100,000 grant from a private foundation enabled MFTA to launch an interactive website (www.mfta.org) in the fall of 2003. The website allows MFTA users to make appointments, check inventory and update "wish lists" online. Allowing site users access to these online functions has reduced the amount of staff time previously spent on related administrative tasks. The website has been well received and MFTA is working on a campaign in FY 2004-2005 to promote the site to its various target audiences.

In FY 2003, MFTA received more than 1,500 material donations and diverted 557 tons of material from the waste stream to educational and arts organizations in need. The estimated value of the redistributed material is approximately \$3.7 million. The cost to DSNY per redistributed ton is approximately \$323.

Contingent upon obtaining funding from sources beyond DSNY, MFTA hopes to expand the program through its education and outreach initiatives. A pilot plan for increasing pickups from residents is underway for FY 2005 targeting specific residential co-ops in Manhattan. MFTA's current reuse education program that serves educators and community workers will be expanded to offer more workshops and establish a summer training institute in FY 2005/FY 2006. MFTA may assist municipalities nationwide to establish similar programs as a service for other jurisdictions, which also may enable MFTA to expand its fundraising potential.

1.1.5 Environmentally Preferable Purchasing

An outgrowth of DSNY's NYCitySen\$e project with government agencies implemented in the late 1990s, and its contracted procurement policy research, was DSNY's issuance of an Environmentally Preferable Purchasing (EPP) Guide and a series of classes for City Agency purchasing personnel. In cooperation with the Department of Citywide Administrative Services (DCAS), the Procurement Training Institute, and the Mayor's Office of Operations, six trial EPP classes were conducted for City Agency Chief Contracting Officers and other procurement personnel in the spring of 2001. Based upon class evaluations, the Procurement Training Institute incorporated the class into its list of regular course offerings that same year.

DCAS's Division of Municipal Supply Services (DMSS) writes and administers contracts for products that contain recycled-content and/or prevent waste. In its November 2003 report, *Environmental Procurement: Purchasing Goods that Promote Recycling and Prevent Waste*, DCAS reported on its contracts for FY 2000-2003. The report highlights its requirement contracts that provide City agencies with opportunities to purchase recycled-content products. It presents a multitude of activities including contracts for the purchase of alternative fuels vehicles, alternative fuels, paper goods including office supplies, non-paper recycled products such as carpet tiles, and salvage of surplus items including vehicles and heavy equipment. All FY 2003 contracts for printing and writing paper meet a minimum 30%-recycled content level.

In FY 2003, DCAS reports the estimated market value of contracts for materials with recycled content reached \$32.7 million, which is the estimated amount anticipated for purchase by City agencies through requirement contracts developed by DMSS.

1.1.6 NYCWasteLe\$\$ Website

The award-winning NYCWasteLe\$\$ website is the City's one-stop waste prevention and recycling resource (www.nycwasteless.org), which received the Silver 2004 Communication Excellence Award by the Solid Waste Association of North America (SWANA). The website includes practical tips, resources, measurement tools and case studies presented in three sections: (1) NYCWasteLe\$\$ individual; (2) NYCWasteLe\$\$ government; and (3) NYCWasteLe\$\$ business.

NYCWasteLe\$\$ is a highly interactive and informative site intended to motivate and assist City businesses, government agencies and the general public to prevent waste. The website evolved from two waste-prevention technical assistance programs conducted with City businesses, hospitals and schools, and government agencies from 1996 through 2001. Two separate comprehensive website sections were established to document the background, findings and case studies garnered from each project.

The former NYCitySense section was revamped and launched in September 2002 as the **NYCWasteLe\$\$ government** site. The NYCWasteLe\$\$ Business Project section was revamped and launched in January 2004 as the **NYCWasteLe\$\$ business site**. All three sections are now uniform in style and content structure and are housed under one URL address for the entire **NYCWasteLe\$\$ website** – (www.nycwasteless.org)

Efforts taken by DSNY to promote the site to the public included:

- E-mailed announcements to Borough Presidents, City Council members, Community Boards, City-based State Senators and Assembly Members, government agencies, and solid waste and environmental advocacy organizations, publications and list serves.
- Announcements and inclusion of inserts about NYCWasteLe\$\$ in the consumer newsletters sent out with Keyspan Energy bills, Con Edison bills, and City Department of Environmental Protection (NYCDEP).

- Links to NYCWasteLe\$\$ added to the City and DCAS website.
- A postcard campaign with Go-Card in local bars and restaurants.
- A poster campaign with Go-Poster in outdoor public areas around the City.
- Distribution of NYCWasteLe\$\$ postcards at City Department of Parks MulchFest events.
- Letters about NYCWasteLe\$\$ with postcards for distribution to local business development corporations, business improvement groups, environmental organizations, community-based civic organizations, libraries, public schools and religious institutions.

Following the site's public launch in 2004, visitors to the website have ranged from 19,000 to 31,000 per month.

1.1.7 Special Waste and Household Hazardous Waste (HHW)

HHW includes household wastes that are flammable, corrosive, poisonous or otherwise potentially dangerous, including solvents, pesticides, hobby chemicals and other household items that would be regulated as hazardous wastes if generated by businesses or government agencies. These wastes are not accepted at DSNY's Special Waste sites due to NYSDEC permit restrictions.

Although HHW is a small percentage of the municipal waste stream, the hazard posed by relatively small quantities is not insignificant. HHW can injure DSNY workers, can pose a poisoning and fire hazard when accumulated in homes, and can contribute to the toxicity load of the City's wastewater system. DSNY has sought to work with other City agencies (e.g., Department of Health, NYCDEP) in addressing HHW concerns that extend to areas beyond hazards posed when HHW is discarded with trash.

Despite potential dangers, HHW may be disposed in the regular trash (automotive batteries and motor oil are exceptions). Therefore, DSNY is limited in its ability to keep HHW out of the waste stream, but sponsored a pilot HHW collection in 1991, and provided one-day HHW collections in each of the five boroughs in 1993 and 1994. Although the program was popular, collection and recycling or disposal at licensed hazardous waste facilities is an expensive proposition.

In 1994, DSNY's one-day events in each borough received over 60,000 pounds of HHW from approximately 1600 households. The contractor costs to receive and dispose the collected HHW at licensed hazardous waste Treatment Storage and Disposal Facilities (TSDFs) for the five collection days totaled \$210,000, in addition to the \$500,000 DSNY spent to advertise the program. Statewide, the NYSDEC calculates costs of approximately \$100 per HHW collection day participant in collections conducted throughout New York State in an NYSDEC report issued in 2000. Costs per participant are somewhat lower for permanent facilities (i.e., located at a fixed site and open on a regular schedule), but do not include the initial costs to construct the facilities. In addition, siting a permanent facility may face substantial community opposition. In addition, DSNY views HHW management as a challenge that multiple City agencies have a vested interest to address, including NYCDEP, Health, Fire and Emergency Management.

NYSDEC awards reimbursement funding for HHW programs in the state, including funds that reimbursed a portion of DSNY's costs for its former HHW program. However, the potential for partial reimbursement for expenses after the fact cannot be counted on to sustain an ongoing program in the City during tight budget times. Therefore, despite the availability of some potential NYSDEC funding, DSNY's HHW collection program was discontinued due to fiscal constraints in 1995.

The Special Waste program, however, began accepting specific HHW in Staten Island in 1996. This drop-off program expanded from its pilot program site in Staten Island to one site in each borough on July 16, 2001. Residents are able to bring motor oil, fluorescent light tubes, household batteries, latex paint automotive batteries, motor oil filters transmission fluid and thermostats to any of the five locations. Residents must show a valid New York State driver's license and vehicle registration with a City address, and the service is solely for residential materials.

Although DSNY discontinued its HHW collection day service after 1994, the agency continues to explore HHW management options and activities in other jurisdictions. An informal survey conducted by DSNY in 2004 revealed that of 30 major U.S. cities, only the City and

El Paso, Texas do not provide HHW collection services. Other jurisdictions provide one-day drop-off collection locations and/or permanent facilities that accept HHW from residents. Therefore, DSNY will release an RFP in FY 2005 to secure a future HHW drop-off event contractor. Subject to the City's PPB rules, the contract should be in place by FY 2007.

1.2 Curbside Recycling Program

For detailed information about DSNY's Curbside Recycling Program, see Appendix A, "New York City Recycling in Context," which is also available on line at <http://www.nyc.gov/html/dos/html/recywprpts.html>. For more information specifically regarding processing and marketing, see Appendix B, "Processing and Marketing Recyclables in New York City," which can also be found on line at <http://www.nyc.gov/html/dos/html/recywprpts.html>

1.2.1 Overview

DSNY collects Recyclables set out by residents, public schools, government agencies and institutions, while private carters collect Recyclables from commercial establishments. Extensive outreach and public education, coupled with enforcement efforts, enabled the City to achieve approximately a 20% recycling rate in FY 2001.

Residents, institutions and government agencies are required to recycle newspapers, magazines, catalogs, paper, mail, envelopes, soft-covered books, phone books, paper bags, corrugated cardboard, glass bottles and jars, plastic bottles and jugs, beverage cartons, foil and other metal items, including bulk metal.

Budget cutbacks resulted in the suspension of the collection of glass and plastic in July 2002 and reduced the frequency of Citywide collection to alternate week from weekly service in July 2003. DSNY updated all of its public-education materials to highlight the use of clear bags or labeled recycling bins for all Recyclables. Previously, regulations required that residents use blue translucent bags for designated metal, glass and plastic items.

Plastic recycling returned in July 2003, and on April 1, 2004, the collection of glass and weekly recycling collection resumed for all materials collected by DSNY for recycling.

DSNY leaf and yard waste collection was also suspended in the fall of 2002, but is scheduled to resume in the fall of 2004. Leaf collection occurs in CDs, based upon the abundance of fall leaves. These areas include all of Staten Island and Queens; Bronx Community Boards 7, 8, 10, 11 and 12; and Brooklyn Community Boards 2, 5, 6, 7, 9, 10, 11, 12, 14, 15, 16, 17 and 18.

1.3 Summary of Public Education Programs

More information regarding public education initiatives can be found on line in the report entitled, “NYC Recycles – More than a Decade of Outreach Activities by the NYC Department of Sanitation, FY 1986-1999,” at http://www.nyc.gov/html/dos/pdf/pubnrpts/recyrpts/nyc_recycles.pdf

1.3.1 Overview

DSNY’s public education and advertising campaigns continue to evolve and adapt with the City’s waste prevention, recycling and composting programs.

The budget cuts of 2002 resulted in significant public education and advertising efforts to instruct New Yorkers on materials that temporarily were no longer accepted for recycling collection. Efforts then shifted in 2003 and 2004 to educating New Yorkers on the phased-in return of plastic, and then glass, to the City’s Recycling Program. Now, DSNY is gearing up to bring New Yorkers up-to-speed on the full reinstatement of all the of the agency’s recycling services, as well as undertaking new public education initiatives.

Every day, thousands of New Yorkers call 311 to request waste prevention and recycling literature, and/or to obtain recycling decals for labeling containers used to set out Recyclables. The 311 phone system vastly improves the way that the City functions. The service provides City residents with around-the-clock access to non-emergency municipal services, including a broad array of sanitation services, from requests for literature to appointments for removal of CFCs from appliances to be set out for recycling.

1.4 Community Outreach

1.4.1 Overview

Community outreach has always been an important component of DSNY's waste prevention, recycling and composting programs. Until July 2002, the residential Recycling Program (both Curbside and mechanized) was fully operational Citywide – there had been no program changes for more than four years and the biggest issue facing the BWPRR Outreach Unit was reducing contamination. Recycling of newspapers, magazines and corrugated cardboard was firmly entrenched and needed very little educational support. Mixed paper recycling, because of its link to privacy issues, was not as widely accepted and was more difficult to enforce.

Between issuance of the Current SWMP Modification and June 2001, the Outreach Unit visited all 759 public and private schools and set them up internally for the proper collection of Recyclables. Subsequently, each of the schools on the routes was revisited every September through December in order to maintain updated records of custodians and administrators, and as a constant reminder of proper recycling procedures. School recycling education visits include working with all levels of authority to seek to ensure proper procedures are in place throughout the entire building. Refer to Section 2.4.7.3 for information on the Golden Apple Awards program for City schools.

Prior to the suspension of recycling, extensive outreach efforts in 2001-2002 included focus on Community Board 3 in western Queens. Information was disseminated to 1,576 private homes and 405 multi-unit dwellings in Elmhurst. The effort took five months, from December 2001 to April 2002.

1.4.2 Suspension of Recycling

When the collection of glass and plastic was temporarily suspended in 2002, the mechanized collection from apartment buildings, schools and institutions was also discontinued, with Recyclable metal accepted only via curbside collection. These changes required deployment of BWPRR outreach staff to instruct schools, residences and institutions about the program changes.

Upon the suspension of mechanized metal, glass and plastic recycling collection service, outreach began involving site visits to all of the public and private schools, and to all of the residential buildings that use dumpsters, to provide instructions about the new procedures for setting out metal. In 2003, outreach focused on instructions pertaining to biweekly collection and the resumed collection of plastics for recycling.

Brooklyn's 179 public schools that received mechanized recycling collection were visited between July 2002 and January 2003. Bronx's 102 mechanized public schools, the 140 mechanized schools in Queens, and Manhattan's 26 mechanized schools were also visited between November 2002 and December 2003. The mechanized schools in Staten Island were re-educated between January and April 2003.

Beginning in May 2004, with the restoration of the full program, outreach staff is revisiting all mechanized residential buildings, schools and institutions that receive DSNY recycling collection service. One-on-one outreach and education never ceases in the five boroughs, due in part to the ever-changing immigrant population and the transient nature of City residents.

1.4.3 Residential Recycling Enforcement

Effective enforcement remains a challenge and limitation to maximizing recycling. Residents of 60% of the City's housing stock are apartment dwellers, and DSNY's research suggests that apartment dwellers are not concerned about enforcement given the difficulty of identifying individual non-complying apartments. A primary incentive for apartment dweller recycling is convenience. Therefore, enforcement efforts focus on seeking to ensure that apartment buildings set aside recycling collection areas for residents as required. Limited storage space undermines the ability of landlords to provide optimal convenience.

1.5 Current Status of Institutional Recycling Programs

1.5.1 Department of Education

DSNY continues to work with the Department of Education to promote recycling in schools. DSNY outreach efforts to schools are discussed in Section 1.4.

1.5.2 Metropolitan Transit Authority

As presented in the 2000 SWMP Modification, the Metropolitan Transit Authority (Transit Authority) privatized its collection of trash, and opted for post-collection processing to recover recyclables. DSNY believes that recycling at subway stations could serve as an invaluable reminder to New Yorkers and visitors of the City's commitment to recycling. Other major cities (e.g., Toronto, Washington, D.C.) provide source-separation recycling services in subways, indicating that logistical challenges can be resolved. Even in Washington, D.C., where security concerns resulted in removal of recycling receptacles from MetroRail station platforms in April of 2004, receptacles remain outside the fare gate areas. However, the City does not have the authority to require the Transit Authority to establish subway source-separation recycling. This power rests with New York State.

1.5.3 City Housing Authority

The City Housing Authority (NYCHA) manages housing locations occupied by more than 85,000 households, providing affordable housing for low- and moderate-income residents throughout the five boroughs. NYCHA also administers a Citywide Section 8 leased housing program, which provides federally funded housing subsidies to low-income families.

NYCHA reports that due to the recent changes in the City's Recycling Program, most of the outreach material NYCHA created is no longer applicable. Therefore, NYCHA relies on the mass mailings and other outreach efforts of DSNY. NYCHA continues to place recycling information in resident newsletters and in the NYCHA newspaper, and otherwise distributes information to residents.

DSNY contracted with the Council on the Environment of New York City (CENYC), through the Waste Prevention Coordinators Program, to spend a portion of the funds provided by the City Council to launch waste prevention and recycling programs at NYCHA locations. During 2002 and 2003, CENYC's Waste Prevention and Recycling Service launched initiatives that included food waste composting, establishment of a center for donating reusable goods, sneaker recycling, and reuse of landscape waste (e.g., as wood chips).

The refrigerator replacement program, whereby the New York State Power Authority replaced refrigerators at NYCHA developments and recycled the old, energy-inefficient units, ended in 2003. = NYCHA continues to replace and recycle stoves. Currently, NYCHA is installing 1,400 food waste disposals in NYCHA housing units in Brooklyn in an effort to address rodent issues.

Recycling at NYCHA locations remains a challenge for the City. DSNY's waste characterization study that is currently underway, and new market research DSNY plans to conduct to learn more about public attitudes toward, and understanding of, recycling may lead to new and improved initiatives undertaken by DSNY.

1.6 Status of Current Commercial Recycling Education and Enforcement

1.6.1 Overview

Businesses in the City are required to recycle in accordance with regulations promulgated pursuant to Local Law 87 of 1992 (LL87), and are subject to enforcement, including fines for non-compliance. There are over 500-million square feet of commercial office buildings, retail stores, restaurants and supermarkets in the City. According to the U.S. Census 2000, there are 226,296 firms in the City employing 3,485,926 workers.

Food and/or beverage service establishments must recycle corrugated cardboard, glass bottles and jars, plastic bottles and jugs, metal cans, and aluminum foil products. All other businesses must recycle corrugated cardboard, office paper, magazines, catalogs, phonebooks, newspaper and textiles (for companies with more than 10% textile waste).

DSNY will continue to work with Local Development Corporations (LDCs), Business Improvement Districts (BIDs) and Chambers of Commerce. These organizations will be asked to reach out to City businesses to promote commercial recycling through their newsletters and other venues. They also will be invited to co-sponsor with DSNY informational meetings with the local merchants to discuss commercial recycling topics.

1.6.2 Outreach and Education

Recycling outreach and education is provided for office buildings, stores and churches by DSNY's Commercial Outreach Coordinator at meetings with property management, building tenants and building janitorial staff. Building management also is provided with DSNY public education materials for distribution to their staff and tenants.

In December 2001, DSNY issued "Recycling: It's not a Choice, It's the Law – Handbook for NYC Businesses." The handbook presents the commercial recycling regulations so that they are easy to understand. It discusses what to recycle, how to recycle, where to post signs (with sample signs included), how to avoid a ticket, frequently asked questions, and where to call for more information. Approximately 23,000 copies have been distributed to commercial businesses, including during site visits by DSNY's Commercial Recycling Outreach Coordinator (approximately 9,000), response to a direct mailing to businesses (approximately 4,000), and from requests received (approximately 10,000) by the Sanitation Action Center (SAC) and the Mayor's 311 City Help Line that replaced SAC services when it came on line in 2002.

Retail stores, restaurants and supermarkets are visited by DSNY's Commercial Outreach Coordinator, who provides information on the recycling requirements, answers questions, offers guidance and distributes informational materials. BIDs, LDCs and Chambers of Commerce also are enlisted to disseminate information. Outreach and educational efforts will continue, and will be enhanced by new initiatives. Letters will be sent to property management companies to offer the services of DSNY's Commercial Outreach Coordinator. DSNY also will work with local real estate boards to promote recycling.

1.6.3 Enforcement

From June 2000 to January 2002, DSNY's Commercial Outreach Coordinator accompanied DSNY's Sanitation Police during their inspections and assisted them to properly apply the commercial regulations. Summonses were issued to violators. The combination of enforcement and education had a positive effect in helping businesses understand the regulations.

1.7 Status of Current Composting Programs

More detailed information on DSNY's composting program can be found on line in the report entitled, "Composting in New York City: A Complete Program History," at <http://www.nyc.gov/html/dos/html/recywprpts.html#4>. For more information about backyard composting see, "Backyard Composting: A Comprehensive Program Evaluation," at <http://www.nyc.gov/html/dos/html/recywprpts.html#8>. For more information on the MSW composting research project, see "New York City MSW Composting Report: Summary of Research Project and Conceptual Pilot Facility Design," at <http://www.nyc.gov/html/dos/html/recywprpts.html#2>.

1.7.1 Overview

DSNY's composting program consists of: (1) seasonal leaf, yard waste, and Christmas tree collection service; (2) yard waste compost facilities in Staten Island, the Bronx and Brooklyn; (3) food waste composting at the Rikers Island Correctional Facility; (4) compost education and give-back programs in cooperation with the City's four Botanical Gardens; (5) research studies including MSW composting; and (6) other initiatives.

As a result of the City's budget cuts in FY 2002, this program was scaled back to the yard waste composting facility serving private landscapers at Fresh Kills and the Rikers Island Compost Facility. The other facilities – Soundview Park, Canarsie Beach Park and the Spring Creek Compost Facility – received no leaf or yard waste deliveries during this period. All the material delivered to these sites through the fall of 2001 have been maintained on site but not actively composted.

The composting program is scheduled to return to full service in the fall of 2004, but the program is threatened by challenges in securing suitable sites for composting, and current requirements that residents must use plastic bags instead of paper bags for setting out leaves for DSNY collection.

1.7.2 Leaf, Yard Waste and Christmas Tree Collection and Composting

In 1999, DSNY completed the multi-phase expansion of the leaf, yard waste and Christmas tree composting collection service to all districts with high leaf generation within the Bronx, Brooklyn and Queens. Leaves and Christmas trees collected by DSNY were taken to compost sites in the Bronx, Brooklyn and Staten Island to make finished compost readily available Citywide. During the fall of 2001, 20,647 tons of leaves were collected by DSNY and deposited at four compost facilities. DSNY estimates that 28,000 tons of leaves per year could eventually be recycled through resumption of its expanded leaf-composting program. Approximately 2,280 tons of Christmas trees were collected Citywide in January 2000.

Yard waste compost facilities have all been sited in areas that are under the jurisdiction of the City Department of Parks and Recreation (“Parks”), with the exception of DSNY’s facility at Fresh Kills. In accordance with a 1997 Memorandum of Understanding (MOU) between DSNY and Parks, DSNY provides compost for Parks to use in environmental restoration and other Parks maintenance and beautification projects Citywide in exchange for the temporary use of Parks sites. Parks’ sites used for this project are in remote or underutilized areas, with disturbed or severely compromised topsoil.

DSNY’s cooperative venture with Parks was an important achievement. Facilities were sited in Ferry Point Park in the Bronx, Idlewild Park in Queens, Canarsie Park in Brooklyn, Spring Creek and Soundview Park in the Bronx. Of these sites, only the Soundview Park facility is currently permitted by the NYSDEC and ready for operation. At Spring Creek, DSNY has been unable to obtain a permit since 2001. In 2001, an MOU was entered into by Parks and DSNY, allowing DSNY to clean up and secure the site with perimeter fencing. After the work was completed, a truck scale, construction trailer, asphalt millings pad and utilities were installed.

The composting program is expected to return to full service in the fall of 2004. Specific programs are discussed below.

1.7.3 Composting at Fresh Kills

DSNY continues to compost leaves, yard waste and Christmas trees at the Fresh Kills compost facility, which was constructed in 1998. Since 2002, the Fresh Kills Compost Facility has been DSNY's only fully funded leaf and yard waste composting operation. In the leaf delivery season in 2001, it received 3,800 tons of leaves. Landscapers have continued to deliver yard waste, and are charged a tipping fee of \$10 per cubic yard, that is lower than the cost to tip their loads at a transfer or disposal facility. Landscapers delivered 5,200 tons in 2001, 6,000 tons in 2002 and 6,600 tons in 2003. Periodically, DSNY reviews the tipping fee to determine whether it is competitive enough to attract the maximum number of private landscapers, while covering DSNY's operating costs.

In 2003, DSNY began the construction of a solid waste transfer station at Fresh Kills adjacent to the compost facility, which includes a truck scale that will be able to weigh both landscaper and DSNY leaf collection vehicles that enter and leave the compost facility. Also, the operations pad is being resurfaced and is expected to be completed in 2004. A surface of millings will be put down for the first time to cover the entire composting area. This will give Fresh Kills the same type of working surface as the compost facilities in Brooklyn and the Bronx, making it less prone to surface erosion and flooding.

1.7.4 Rikers Island Compost Facility

DSNY's in-vessel food waste compost facility on Rikers Island became operational in 1996. The facility is equipped with two concrete bays and agitating equipment manufactured by International Process Systems ([IPS], now U.S. Filter). All air in the facility is pumped through a biofiltration system to prevent the release of odors, and the building is kept under negative air pressure at all times to prevent odors from escaping without filtration. In addition, the facility features the

world's largest translucent photovoltaic panel roofing system installation, which was funded by the New York Power Authority and provides 40 kilowatts of power to the facility.

Facilities using the IPS technology have been constructed throughout the United States for composting sewage sludge. The Rikers Island facility is the first to exclusively compost large quantities of food waste. DSNY also has used the facility to test operational issues, odor containment and cost. Food is collected primarily from the kitchens, and consists of unserved food, spent flour and unusable bread collected from the bakery. Compost manufactured at Rikers Island is utilized on-island in the Department of Correction Inmate Farm Project. The compost is particularly beneficial, as soil quality on Rikers Island is very poor, consisting mostly of landfill material. Compost has also been taken by the Parks Department in Brooklyn and Queens for use in environmental restoration and ballfield rehabilitation projects. Currently, the facility composts approximately 5,600 tons per year (tpy) and costs approximately \$60 per ton.

1.7.5 Composting Outreach and Education at Four Botanical Gardens

Since July 1998, through a collaborative agreement with the City Department of Cultural Affairs, DSNY funded the City's four Botanical Gardens to provide composting outreach, education and technical assistance to City residents, businesses and institutions. The compost projects established at the New York Botanical Garden in the Bronx, and at the Brooklyn Botanic Garden, Queens Botanical Garden and Staten Island Botanical Garden, enabled DSNY to conduct projects throughout the City, including composting assistance to the City Housing Authority, leave-it-on-the-lawn education to inform New Yorkers of the benefits of recycling grass clippings, and compost "give-back" events. The FY 2002 budget cuts eliminated DSNY funding of the program.

Funding for the Botanical Gardens has been fully reinstated in FY 2005. With assistance from the four Botanical Gardens, compost "give-back" events will be held in every borough in the fall and spring. These events are also used to promote the sale of over 3,000 backyard compost bins to City residents at a reduced price. In 1999, 900 cubic yards of DSNY compost were distributed to over 7,000 residents Citywide.

1.7.6 Municipal Solid Waste Composting Research Project

For the complete report, please refer to Appendix C, “New York City MSW Composting Report - Summary of Research Project and Conceptual Pilot, January 2004,” or the report is accessible on line at <http://www.nyc.gov/html/dos/html/recywprpts.html>

In 1992, the City’s first comprehensive SWMP recommended that DSNY assess MSW composting more fully as a “major component of the waste management system,” and encourage the City to build a facility so as to “extensively analyz[e] and carefully evaluat[e]” its potential. MSW composting technology presents some promising opportunities because it can exist alongside existing recycling operations, take advantage of certain collection efficiencies and recover Recyclables discarded with trash. But most importantly, this technology can recover nearly all of the degradable material, which comprises over 50% of the residential waste stream, and turn it into a usable end product.

In 2001, DSNY launched a study of MSW composting to: (1) explore the state of MSW composting technology; (2) examine the quality of compost produced; and (3) present a theoretical proposal for how such technology can be further tested within the City. The MSW composting study constitutes the full assessment that the SWMP recommends, and like the SWMP, also proposes that the City seriously consider building a pilot facility to learn more about this promising technology. Please see Appendix C for a copy of the report, “New York City MSW Composting Report – Summary of Research Project and Conceptual Pilot Facility Design, January 2004.”

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