

APPENDIX G

SUMMARY OF DEC FINANCIAL ASSISTANCE PROGRAMS

PROGRAM: HIGH TECHNOLOGY RESOURCE RECOVERY (HTRR)

Authorizing Legislation: 1972 Environmental Quality Bond Act (EQBA); Section 51-0905 of the ECL

Summary: This program was created to assist local governments in the planning, design and construction of municipal waste combustion (MWC) projects, also known as waste-to-energy plants, and other associated solid waste management facilities, such as transfer stations and ash management or disposal operations. A total of more than \$217.6 million in EQBA funds were originally dedicated to this purpose, including \$169 million from the Solid Waste category and more than \$48.6 million from the Air Quality category.

Results: Applications from 25 municipalities totaling more than \$215.4 million were originally selected for funding. (The remaining approximate \$2.3 million was legislatively reassigned for use toward statewide recycling projects.)

In time, several of these projects were either completed for less than originally estimated or were discontinued. The statute required DEC to review project status annually and recommend reallocation where appropriate, with an emphasis on reallocating for small-scale, low-technology resource recovery approaches, such as new material recovery facilities or other recycling investments. More than \$90 million of these funds were eventually reprogrammed--\$77 million for recycling projects, nearly \$11 million for other solid waste disposal/transfer projects, and \$5 million for waterfront revitalization.

Ultimately, this program provided more than \$122.3 million in funding toward 19 high-technology resource recovery projects.

Status: Not active.

Program: Low Technology Resource Recovery (LTRR)/Municipal Recycling Grants Program (MRGP)

Authorizing Legislation: 1972 Environmental Quality Bond Act (EQBA); 1988 Solid Waste Management Act

Summary: The Low Technology Resource Recovery (LTRR) Program was established in 1972 for use to purchase small-scale source-separation equipment. The initial appropriations were small (\$3.2 million) but came at a time when municipalities were encouraged to begin recycling before source-separation programs were required. With the passage of the 1988 Solid Waste Management Act's mandatory local source-separation requirements and accompanying appropriations, the legislature significantly enhanced the funding available for recycling equipment and facilities to assist municipalities with the costs of new or expanded programs.

A total of more than \$90.5 million was allocated from the following sources: approximately \$3.3 million from the 1972 EQBA (\$1 million original allocation and approximately \$2.3 million through reallocation); \$6 million from the 1988 SWMA, and \$81.2 million reallocation of HTRR funds (generally earmarked for communities that did not use the full allocation of their original HTRR funds, though some HTRR funding was reallocated for statewide purposes).

Results: The more than \$90 million allocated for this program funded 265 recycling projects between 1972 and 2008. Typical projects included curbside collection containers, trucks to collect recyclables, material recovery facilities, composting facilities and processing equipment. These investments helped make statewide source separation a reality. Of that \$90 million, \$67.5 million was reassigned from the HTRR program to the following 13 municipalities for use on recycling projects only in those municipalities:

| | |
|-----------------------------|--------------|
| - Town of Brookhaven | \$ 6,250,000 |
| - Town of North Hempstead | \$ 1,520,941 |
| - Town of Smithtown | \$ 280,256 |
| - New York City | \$50,967,940 |
| - Westchester County | \$ 2,566,667 |
| - Albany County | \$ 940,257 |
| - Oneida-Herkimer SWMA | \$ 191,744 |
| - St. Lawrence County | \$ 750,000 |
| - Broome County | \$ 286,559 |
| - Monroe County | \$ 1,651,875 |
| - Western Finger Lakes SWMA | \$ 1,300,000 |
| - Chautauqua County | \$ 37,427 |
| - Erie County | \$ 7,000,000 |

An additional \$7.533 million of that \$90 million was reassigned from three original HTRR projects (St. Lawrence County [\$5.333 million], Town of Brookhaven [\$2 million], and Western Finger Lakes Solid Waste Management Authority [\$0.2 million]) to statewide recycling projects.

Status: Not active.

Program: Local Resource Reuse and Recovery Program (LRRRP)

Authorizing Legislation: Kansas Stripper Well Settlement (Chapter 615 of the laws of 1987, Chapter 659 of the laws of 1989), Petroleum Overcharge Restitution Chapter 598 of the laws of 1993), and Solid Waste Management Act (Chapter 70 of the laws of 1988)

Summary: The LRRRP was established to help municipalities meet the requirements contained in the Solid Waste Management Act. DEC structured the program to allow grant funds to be used by local governments to help defray up to 75 percent of the costs of recycling programs, including public education, information and outreach programs, salaries of local recycling coordinators and waste reduction projects. DEC granted nearly \$10 million through the program, including approximately \$4 million in petroleum overcharge funds from the Kansas Stripper Well Settlement and the Petroleum Overcharge Restitution Act, along with \$6 million from the Solid Waste Management Act.

Results: In total, the LRRRP funded 101 projects between 1987 and 1994, for a total cost of more than \$9.9 million. The program helped create 60 municipal recycling coordinator positions, some of which have been sustained by municipalities and others with additional funds through the Municipal Waste Reduction and Recycling program (see below).

Although the results of the program were significant, funding was not sufficient to meet the total statewide need. Of the 135 applications received and reviewed against criteria established for the program, 125 were determined to be eligible. Funding requested by the 125 applicants totaled nearly twice the available funding.

Status: Not active.

Program: Municipal Waste Reduction and Recycling State Assistance Program (MWRR)

Authorizing Legislation: Environmental Protection Act (chapters 610 and 611, laws of 1993); Title 7 of Article 54 of the ECL, and 1996 Clean Water/Clean Air Bond Act

Summary: MWRR is the successor program to the LTRR/MRGP and LRRRP programs described above. It was established and has been funded annually as a part of the Environmental Protection Fund (EPF), supplemented by \$50 million from the 1996 Clean Water/Clean Air Bond Act.

Through the MWRR program, DEC provides grants to cover 50 percent of the costs, to a maximum of \$2 million, of capital, planning and promotion for waste prevention and for capital costs (equipment, structures and facilities) for recycling projects. In 2000, the definition of “cost” was amended to also include planning, educational and promotional activities associated with a recyclables recovery program. This includes the cost of recycling coordinator salaries.

The MWRR grant program is governed by regulations (Part 369) that include eligibility criteria and dictate a “first-in, first-out” method of distribution. Under the system, municipalities submit pre-applications to ensure eligibility and secure a place on the waiting list. As funds become available, DEC requests full applications in the order that applicants appear on the waiting list and proceeds with contracts as appropriate.

Results: Since the inception of this program, \$106.2 million, including more than \$55 million in funding from EPF, has been awarded to municipalities for 432 projects. Since the expansion of eligibility under the EPF in 2000, it has funded education and coordination activities in more than half of the planning units, representing more than 85 percent of the state’s population. See Table A for a breakdown of these projects.

Table A - Funding From the EPF for Waste Reduction and Recycling

| | 1993 - 2008 (\$) | 1993 – 2008 (%) | 2000- 2008 (\$) | 2000- 2008 (%) |
|---------------------------------------|------------------------|-----------------------|-----------------------|----------------------|
| Recycling equipment & facilities | 15.9 milli on | 28.8% | 7.6 milli on | 19.0% |
| Composting equipment & facilities | 10.2 milli on | 18.4% | 7.7 milli on | 19.2% |
| Recycling education & coordination | 21.3 milli on | 38.5% | 21.3 milli on | 53.1% |
| Waste reduction equipment & education | 7.9 milli on | 14.3% | 3.5 milli on | 8.7% |

As of December 31, 2008, 105 projects totaling a little more than \$36 million in pre-applications were on the waiting list. At the average funding level appropriated for this program during the last two years, this represents approximately three years of waiting. The projects include:

- 82 for recycling equipment, structures and facility projects (\$24.5 million)
- 22 for recycling education and coordination projects (\$11.1 million)
- 1 waste reduction project (\$0.4 million)

Status: Active.

Program: Local Solid Waste Management Planning Grant Program

Authorizing Legislation: Solid Waste Management Act

Summary: In 1988, through the Solid Waste Management Act, the legislature appropriated \$7.5 million for a grant program to assist local governments in developing solid waste management plans. The plans were expected to implement the solid waste management hierarchy and ensure environmentally sound and integrated programs that include waste reduction, reuse and recycling, with ultimate disposal for remaining waste.

Results: Planning grants were available to cover 90 percent of the costs of preparing a local solid waste management plan (LSWMP), up to a maximum of \$1 *per capita* or \$25,000, whichever was greater. DEC received 50 applications requesting a total of \$14.9 million. With the limited grant money available, DEC funded the first 36 projects before funds were completely obligated by November 1992. Because no new money was appropriated for this program, \$7.4 million in eligible applications were never funded.

For more on LSWMPs, see Section 5.

Status: Not active.

Program: Household Hazardous Waste (HHW) State Assistance Program

Authorizing Legislation: 1993 Environmental Protection Act (ECL, Title 7 of Article 54)

Summary: The HHW State Assistance Program provides up to 50 percent reimbursement to municipalities, to a maximum of \$2 million, for the costs related to collection programs for household hazardous waste. From 1995 through 2007, program payments have averaged just under \$2 million per year.

The program reimburses municipalities for costs of operating household hazardous waste collection day programs, as well as costs to construct and operate permitted household hazardous waste collection and storage facilities. Eligible costs include: contractor costs to accept, segregate, prepare for shipment, transport, and recycle, treat, or dispose of the collected wastes; operational costs for a permitted facility, and costs for publicity, promotion, and public education. Collection and disposal of certain items that are routinely collected by HHW programs but are not, in fact, hazardous (e.g., latex paint and electronic waste), are not eligible expenses in the program. When communities choose to continue collecting these materials due to popular demand, state reimbursement does not cover a full 50 percent of the program costs.

Results: As of December 31, 2008, DEC had awarded 461 HHW assistance contracts valued at nearly \$30.2 million to 80 municipalities. Since the program's inception, the number of collection events in the state has doubled to serve more than 60 municipalities per year, and 11 permitted HHW drop-off facilities have been established. These municipal programs have collected, in aggregate, more than 125 million pounds of HHW since the HHW State Assistance Program began, with five times as much HHW collected today as in 1993, amounting to about 8.5 percent of all HHW generated in the state. During the same period, costs were reduced by 67 percent. On average, HHW program costs, including outreach, education and disposal, are \$720 per ton. (For more information on HHW, see Section 4.2.3).

Status: Active.

Program: Municipal Landfill Closure Program

Authorizing Legislation: 1986 Environmental Quality Bond Act (EQBA); 1993 Environmental Protection Act, and 1996 Clean Water/Clean Air Bond Act

Summary: This program provides funding to assist in proper closure of non-hazardous, municipally owned landfills. Initially funded with \$100 million from the 1986 Environmental Quality Bond Act (EQBA), the program provides reimbursement of 50 percent of a municipality's costs (90 percent for those municipalities with populations of less than 3,500) for proper landfill closure, up to a maximum of \$2 million. To be eligible, the landfill must have completed a Closure Investigation Report and must be closed, or be required to close, within 18 months of the municipality's state-assistance application.

The 1996 Clean Water/Clean Air (CW/CA) Bond Act provided \$75 million specifically dedicated to closure of the Fresh Kills Landfill in New York City, with additional funding to be granted through an application process. Money has continued to be available through annual appropriations from the EPF. As of early 2009, 226 landfill closure projects had been completed and nine applications, for a total of \$10 million, were on the waiting list. Funding for this program has decreased significantly during the past three years: only \$3 million in FY '07-'08; no appropriations in FY '08-'09, and only \$750,000 in FY '09-'10. This program shares a funding line in the EPF with the Municipal Landfill Gas Management State Assistance Program, described below, so these allocations fund both programs.

Results: As noted in the 1987 State Solid Waste Management Plan, in June 1986, there were 358 active landfills in New York State. Since 1986, \$307.5 million in funding has been awarded for 254 closure projects, including: \$100 million from the 1986 EQBA; \$121.5 million from the CW/CA Bond Act, and \$86 million from the Environmental Protection Fund (EPF). As of December 31, 2008, 226 of these projects have been completed.

Status: Active

Program: Municipal Landfill Gas Management State Assistance Program

Authorizing Legislation: ECL Article 54, Title 5, and Article 56, Title 4; 1993 Environmental Protection Act, and 1996 Clean Water/Clean Air Bond Act

Summary: The landfill gas management program was established in 1996 to promote improved air quality and to encourage energy recovery from landfill gas. Through this program, municipal owners or operators of non-hazardous waste landfills that have incurred costs associated with the design and construction of an active landfill gas collection and treatment system can receive reimbursement of up to 50 percent of eligible costs, to a maximum of \$2 million dollars per project.

Results: Since 1996, \$12.3 million in funding has been awarded for 12 landfill gas management projects. This total includes: \$3.5 million from the Clean Water/Clean Air Bond Act and \$8.8 million from the EPF. As of December 31, 2008, 4 applications totaling \$8 million remained on the waiting list.

Status: Active

APPENDIX H

MATERIALS COMPOSITION AND CHARACTERIZATION

DEC has estimated of the composition of the materials present in of the MSW and the C&D debris streams using data inputs from a number of field-based waste composition studies performed within New York State, in other major US cities, and in other states that have similar demographic characteristics to some of New York's regions. Tables H-1 through H-4 address the MSW stream and Tables H5 through H-9 address the C&D debris stream. The information in this appendix supplements the materials composition and characterization information in Chapter 7 of the Plan.

The population density of a community can have an impact on the composition of its waste stream. Therefore, in the analyses provided below, DEC estimates the materials generation differences in New York State's urban, suburban and rural areas. Population density was used as a comparative tool to help transfer applicable data from other states and cities waste composition studies to similar demographic regions in New York and to more appropriately account for the wide demographic differences and characteristics within New York State.

For the purposes of this analysis, DEC defined rural areas as communities in the state with a population density of less than 325 people per square mile; suburban areas as communities with a population density between 325 and 5,000 people per square mile, and urban areas as communities with population density greater than 5,000 people per square mile. A higher population density for suburban and urban areas was used in this analysis compared to those used by most other states, primarily due to the greater population density of the suburban areas of Long Island and New York City. These areas clearly possess typical suburban characteristics, yet have higher population densities than typical suburban communities in other areas of the country. This distinction is important to note when comparing DEC's estimate with other state and national data. Using DEC's methodology, urban areas account for 54 percent of the state's population, suburban communities account for 30 percent and rural 16 percent.

Municipal Solid Waste (MSW)

1. Methodology

In developing the MSW estimates, DEC aimed to characterize the MSW that is both generated and discarded/recycled by the residential and commercial/institutional (CI) generators. The MSW estimate does not include the C&D debris stream; the C&D debris stream is discussed separately below. The MSW estimate also does not include several organics streams (biosolids, septage, agricultural materials etc.), industrial waste, or medical and biohazardous materials. It contains data on tires and scrap metal that are generated as part of the MSW stream but not the full range of those materials since they are often managed outside of the MSW systems.

DEC's analysis looks at the variations in the materials stream based on urban, rural and suburban generators, as well as those based on residential and commercial/institutional generation. Because no one study provides directly transferable data by these divisions, data from multiple sources were compiled and aggregated to create the DEC composition estimate. After a careful review of dozens of composition analyses, the data from the following sources were used:

- Municipalities within New York State:

New York City Department of Sanitation
NYC Waste Characterization Study Final Report
2004/05

New York City Department of Sanitation
Commercial Waste Management Study
March 2004

2005 Onondaga County Resource Recovery Agency
Onondaga County Waste Qualifying and Characterization Study
March 2006

- Municipalities in other states:

Seattle Public Utilities
2006 Residential Waste Stream Composition Study Final Report
November 2007

Seattle Public Utilities
2004 Commercial and Self-Haul Waste Streams Composition Study Final Report
September 2005

City and County of San Francisco Department of the Environment
Waste Characterization Study
August 2005

- Other States:

Vermont Department of Environmental Conservation
Vermont Waste Composition Study Final Report
June 2002

Wisconsin Department of Natural Resources
Wisconsin Statewide Waste Characterization Study Final Report
May 2003

Missouri Department of Natural Resources
2006-2007 Missouri Municipal Solid Waste Composition Study
October 2007

Iowa Department of Natural Resources
Iowa Statewide Waste Characterization Study
February 2006

Georgia Department of Community Affairs
Georgia Statewide Waste Characterization Study Final Report
June 22, 2005

State of Oregon Department of Environment Quality
2002 Oregon Solid Waste Characterization and Composition Final Report
April 20, 2004 and
2005/06 Marion County Supplement
June 30, 2007

Ohio Department of Natural Resources
State of Ohio Waste Characterization Study
April 21, 2004

Delaware Solid Waste Authority
Statewide Waste Characterization Study Report 2006/07
October 31, 2007

Delaware Solid Waste Authority
State of Delaware Assessment of Commercial and Industrial Recycling Activity Final Report
July 2006

Pennsylvania Department of Environmental Protection
Statewide Waste Composition Study Final Report
April 2003

California Integrated Waste Management Board
Statewide Waste Characterization Study
December 2004

California Integrated Waste Management Board
Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings
for Selected Industry Groups
June 2006

DEC evaluated each of the analyses listed above and utilized the portions that were applicable to New York State, based primarily on population density and demographic factors. The data used were aggregated, compared and normalized for conditions within New York (such as the returnable container law) and within each appropriate generating sector and material type. Information from EPA's Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures 2008 was used to assist in subdividing the individual subcomponents of the recyclable paper category.

2. Materials Composition in the Residential vs. the Commercial/Institutional Sectors

DEC estimates that 54 percent of the MSW generated statewide is residential, and 46 percent is commercial/institutional. There are some important differences between sectors that are useful to know in determining which materials to target for aggressive recycling programs. For example, the generation of food scraps and corrugated cardboard in the commercial/institutional sector is substantially higher than in the residential sector, as is the generation of other recyclable paper and glass. There are also important differences in the waste composition between different business sectors. Office buildings routinely generate a greater percentage of high-grade paper than other sectors, whereas big box retail and grocery stores tend to generate much higher percentages of corrugated cardboard and film plastic. Similarly, food scraps are generated in greater percentages in grocery stores and hotels than in most other sectors.

3. MSW Generation and Discard Estimates

The estimated composition of materials generated and discarded by the residential and commercial/institutional sectors is presented in Tables H-1 through H-4. Tables H-1 and H-4 provide a comparison of the results of DEC's analysis with the EPA's Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures 2008, which is commonly used as a baseline by states and local governments. The notable differences—rates of generation of yard trimmings, food scraps, some containers and paper products—are likely related to differences in methodology or the specific demographic characteristics of New York State, such as the substantial urban population.

As noted, DEC's estimates are based on field studies of materials composition. The EPA study estimates for most materials are based on a materials flow approach which relies on production data (adjusted for imports and exports) and certain assumptions about patterns and length of use for various products. For food scraps and yard trimmings, EPA uses data reported from states as well as materials composition studies. The substantial differences between EPA and DEC estimates of food scrap generation are likely due to New York City's (NYC) high rate of generation of this material as compared to other urban, suburban and rural areas. The yard trimmings differences are likely attributable to the low rate of generation of this material in NYC as well as the fact that in rural communities, generators mostly handle this material onsite.

Table H-1- New York State MSW Combined Composition Analysis:

Table H-1 provides the estimated composition of combined MSW (i.e., residential and commercial/institutional) generated and discarded in New York State in 2008. It includes subdivisions for the urban, suburban and rural composition along with EPA's MSW baseline as a reference.

Table H-2- New York State Commercial/Institutional Composition Analysis:

Table H-2 provides the estimated composition of commercial/institutional materials generated and discarded in New York State in 2008 with subdivisions for the urban, suburban and rural composition.

Table H-3 - New York State Residential Composition Analysis:

Table H-3 provides the estimated composition of residentially generated and discarded MSW in New York State in 2008 with subdivisions for the urban, suburban and rural composition.

Table H-4 - New York State Detailed MSW Composition Analysis:

Table H-4 provides an aggregated presentation of the estimated composition of MSW generated and discarded in New York State in 2008. This table includes urban, suburban and rural demographic breakdowns, subdivided into residential and commercial/institutions sectors , and provides EPA's MSW baseline as a reference.

Construction & Demolition (C&D) Debris

1. Methodology

Like the analysis described for the MSW stream, DEC has developed estimates of the materials present in the C&D debris stream using data inputs that include field-based waste composition studies and research-based evaluations performed both within New York State and within states and cities that have demographic characteristics similar to some of New York State's regions.

In broad terms, C&D debris is defined as uncontaminated solid waste resulting from the construction, remodeling, repair and demolition of utilities, structures and roads and includes land-clearing debris. In developing the Plan's estimates, DEC's analysis aimed to characterize the full C&D debris stream as well as variations in the materials discarded by the building sector as a result of new construction, renovation and demolition activities from both the residential and non-residential sectors.

Because no single study provides directly transferable data by these divisions, data from multiple sources were compiled and aggregated to create the DEC composition estimates. After careful review of a number of compositional analyses and research evaluations, data from the following sources were used:

- Municipalities within NYS:
 - Town of Babylon
 - Gershman, Brichner & Bratton, Inc. for

New York State Energy Research and Development Authority
Demolition Age: September 1993

New York City Department of Sanitation
Commercial Waste Management Study
March 2004

- Municipalities in other states:

Seattle Public Utilities
2007 Construction & Debris Waste Composition Study Final Report
July 2008

De Moines, Iowa
Metro Waste Authority (MWA)
Sept 2002

- Other states:

Vermont Department of Environmental Conservation
Vermont Waste Composition Study Final Report
June 2002

Wisconsin Department of Natural Resources
Wisconsin Statewide Waste Characterization Study Final Report
May 2003

State of Oregon Department of Environment Quality
2002 Oregon Solid Waste Characterization and Composition Final Report
April 20, 2004 and
2005/06 Marion County Supplement
June 30, 2007

Delaware Solid Waste Authority
State of Delaware Assessment of Commercial and Industrial Recycling Activity Final Report
July 2006

Solid Waste Management Coordinating Board
Minnesota Construction, Demolition & Industrial Waste Study Final Draft Report
July 24, 2007

Florida Center for Solid Waste and Hazardous Waste Management
Generation and Composition of Construction & Demolition on Waste in Florida
February 27, 2003

California Integrated Waste Management Board
Targeted Statewide Waste Characterization Study
Detailed Characterization of Construction & Demolition Waste
June 2006

- EPA:
EPA Characterization of Building-Related Construction and Demolition Debris in the United States - June 1998; and
EPA Estimated 2003 Building-Related Construction & Debris Materials Amounts.

DEC evaluated each of the analyses listed above and utilized the portions that were applicable to New York State, based primarily on population density and demographic factors. The data used were aggregated, compared and normalized for conditions within New York within each appropriate generating sector and material type.

2. Materials Composition in the Residential Buildings, Non-Residential Buildings and Infrastructure/Other Generating Sectors

Because much of the infrastructure generating sector material is likely handled on site as part of the project, most composition analyses do not categorize this material. As a result, DEC's detailed C&D material composition analysis was directed toward identifying differences within three building generating sectors—new construction, renovation, and demolition.

It is important to note that the percentages used in this analysis are based on weight; analysis based on volume would be quite different. Most notably, the percentage of wood versus CARB would be significantly different, because CARB is more than twice as dense as wood and therefore much heavier.

3. C&D Debris Generation and Discard Estimates

The estimated composition of materials generated and discarded by the residential, non-residential and infrastructure/other sectors is presented in Tables H-5 through H-9.

Table H-5- New York State Combined Building C&D Debris Composition Analysis:

Table H-5 provides the estimated combined composition of C&D debris generated and discarded in New York State in 2008 by the building sector with subdivisions for residential and non-residential buildings.

Table H-6- New York State Building Demolition C&D Debris Composition Analysis:

Table H-6 provides the estimated composition of C&D debris generated and discarded in New York State in 2008 by the building demolition sector with subdivisions for residential and non-residential buildings.

Table H-7 - New York State Building Renovation C&D Debris Composition Analysis:

Table H-7 provides the estimated composition of C&D debris generated and discarded in New York State in 2008 by the building renovation sector with subdivisions for residential and non-residential buildings.

Table H-8 - New York State New Building Construction C&D Debris Composition Analysis:

Table H-8 provides the estimated composition of C&D debris generated and discarded in New York State in 2008 by the new building construction sector with subdivisions for residential and non-residential buildings.

Table H-9 - New York State Detailed C&D Debris Composition Analysis

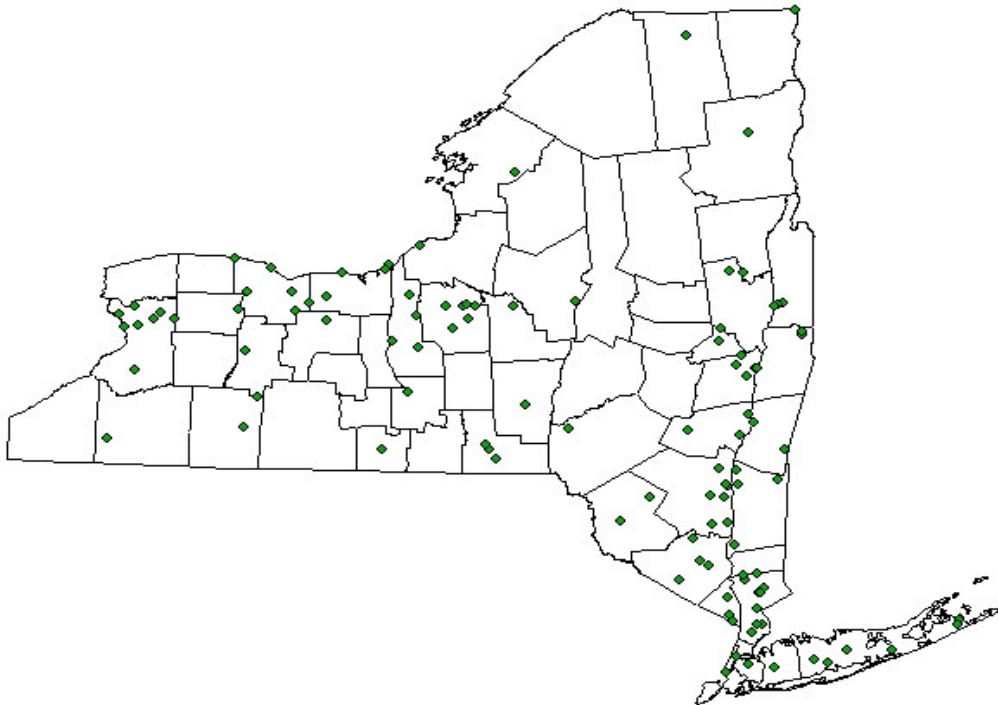
Table H-9 provides an aggregated presentation of the estimated composition of C&D debris generated and discarded in New York State in 2008 divided into residential buildings, non-residential buildings, and infrastructure/other generating sectors with the two building sectors subdivided into new construction, renovation and demolition.

APPENDIX I

ADDITIONAL INFORMATION ON ORGANIC MATERIALS MANAGEMENT IN NEW YORK

1. YARD WASTE COMPOSTING

Some of the larger yard waste composting facilities are noted on the following map. This map, along with information about each of the sites can be found at: <http://compost.css.cornell.edu/maps/yardwaste.asp>



Under New York's Part 360 regulations, smaller (less than 10,000 cubic yards per year) yard waste composting facilities are not required to obtain a permit. Of the yard waste composting facilities

that exist in the state, 37 have a permit to operate and are listed in the following table.

| <i>Facility Name</i> | <i>County</i> | <i>Size (yd³/yr)</i> |
|-------------------------------|----------------------|--|
| Town of Orchard Park | Erie | 15,000 |
| City of Albany | Albany | 38,000 |
| Town of Bethlehem | Albany | 81,000 |
| Town of Colonie | Albany | 20,000 |
| Soundview Park | Bronx | 22,000 |
| Village of Endicott | Broome | 7,000 |
| City of Beacon | Dutchess | 20,000 |
| West Hook Sand & Gravel | Dutchess | 20,000 |
| Town of Amherst | Erie | 85,000 |
| Town of Brighton | Monroe | 20,800 |
| Town of Greece | Monroe | 45,000 |
| Village of Garden City | Nassau | 21,000 |
| Oneida-Herkimer SWMA | Oneida | 100,000 |
| Town of New Hartford | Oneida | 19,000 |
| Miller Murphy Construction | Onondaga | 35,000 |

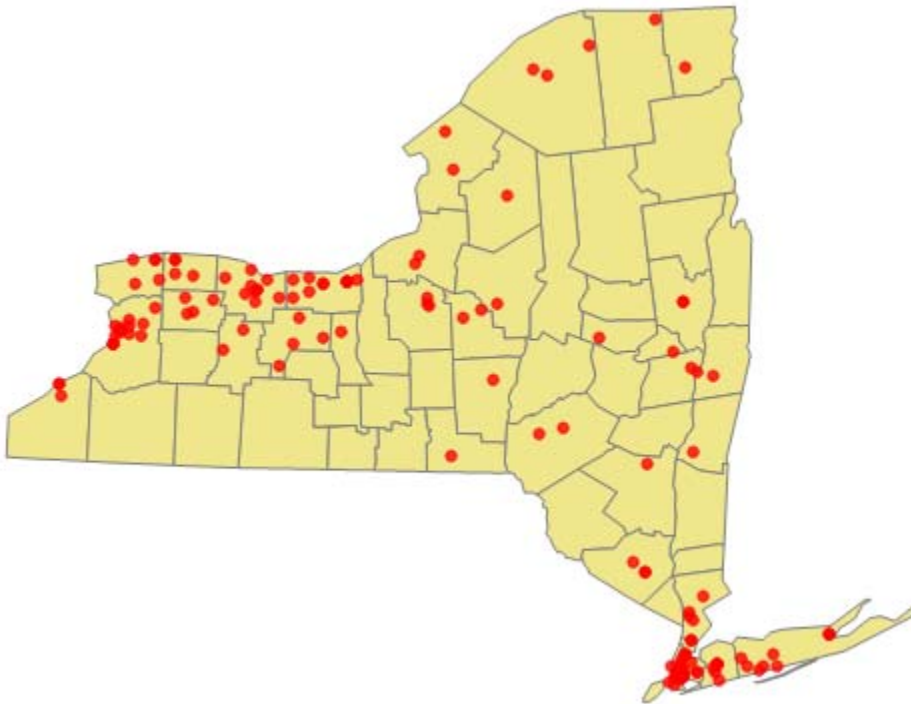
| | | |
|---------------------------|-------------|---------|
| Organic Recycling LLC | Orange | 325,000 |
| City of Port Jervis | Orange | 19,000 |
| NYC Dept of Sanitation | Richmond | 50,000 |
| Clarkstown – French Farms | Rockland | 38,000 |
| Clarkstown – Rte 59 | Rockland | 120,000 |
| Organic Recycling LLC | Rockland | 110,000 |
| Rockland County SWMA | Rockland | 12,000 |
| City of Saratoga Springs | Saratoga | 49,000 |
| Town of Clifton Park | Saratoga | 60,000 |
| Town of Rotterdam | Schenectady | 15,000 |
| Schenectady County | Schenectady | 86,000 |
| Bistran Gravel Corp. | Suffolk | 5,065 |
| Town of Brookhaven | Suffolk | 35,000 |
| Holtsville Park | Suffolk | 18,500 |
| Town of Islip | Suffolk | 200,000 |
| Town of Southold | Suffolk | 42,000 |
| Custom Compost, Inc. | Ulster | 68,000 |
| High Acres | Wayne | 70,000 |
| Town of Bedford | Westchester | 27,000 |
| Town of Eastchester | Westchester | 17,000 |

| | | |
|------------------------|-------------|--------|
| Town of Harrison | Westchester | 50,000 |
| Town of Mount Pleasant | Westchester | 20,000 |
| City of White Plains | Westchester | 38,000 |

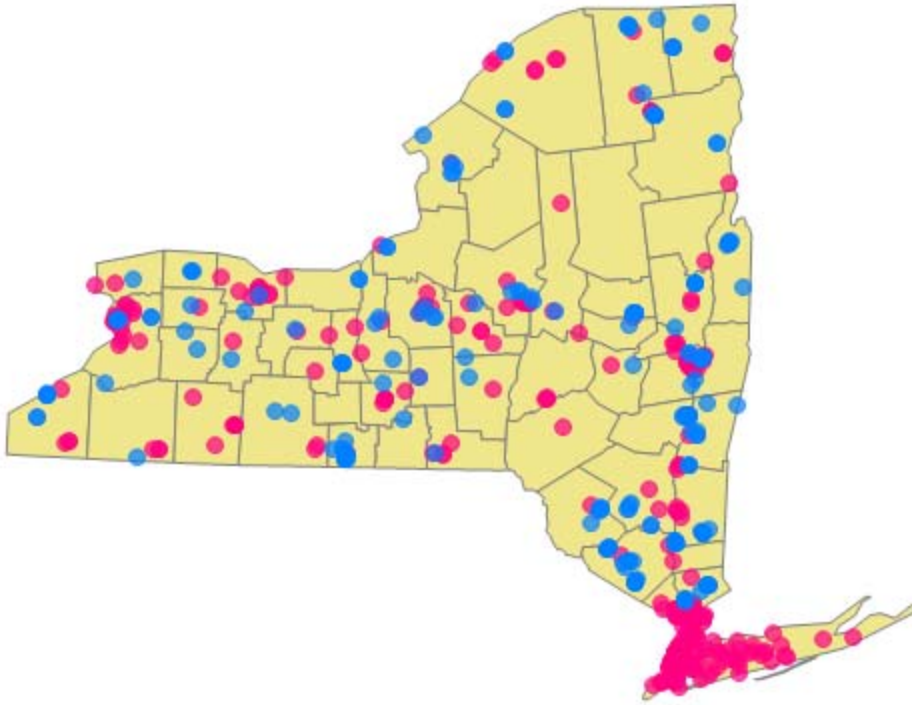
2. FOOD SCRAPS SOURCES

There are many sources for food waste. The major sources can be grouped in the following categories based on the type of generator. NOTE: Additional maps and more detailed information on individual generators can be found at <http://wastetoenergy.bee.cornell.edu/default.htm>

- Industrial – includes primarily food processors. New York State has many dairy processors, fruit and vegetable processors, and wine-making operations. The following map shows the locations of food processors. Most of these processors currently recycle their food wastes through use as animal feed, direct land application, composting and anaerobic digestion.



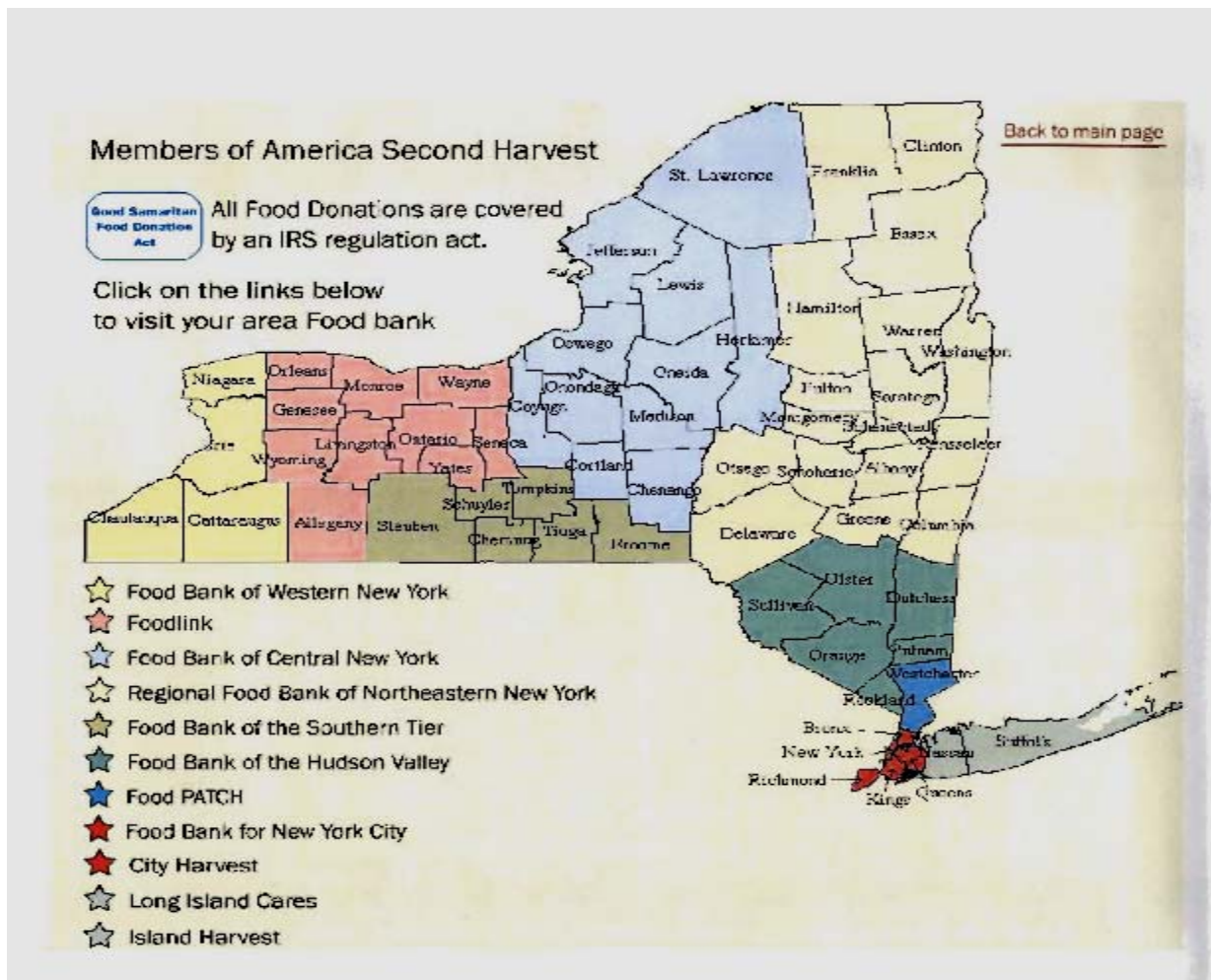
- Institutional – includes schools, colleges, universities, correctional facilities, and similar generators. State-operated correctional facilities have very active composting systems in place—more than 40 sites. A few higher education institutions compost food waste, but the practice has not yet become common. Key: Pink = colleges, Blue = correctional facilities



- Commercial – includes restaurants, grocery stores, fast food restaurants, and similar retail establishments. Very limited food waste recycling activity results from these generators.
- Residential – includes homes, apartments, etc. This is a plentiful food waste source but can present obstacles to recycling. The only large-scale recycling system for residential waste in New York State is the Delaware County Co-Composting Facility, which accepts a mixed-waste stream, including food waste for composting.

3. FOOD BANKS

New York State is fortunate to have very active programs to feed the poor and hungry in all counties. Food banks serve a crucial role, providing for the collection of edible food and monetary contributions and the distribution of assets to hundreds of member agencies, including food pantries, soup kitchens, emergency shelters for the homeless, residential programs, and other entities serving needy people. The following figure depicts the members of America's Second Harvest in New York State, primarily food banks. In addition to food banks, there are many other community-based donation systems in place.

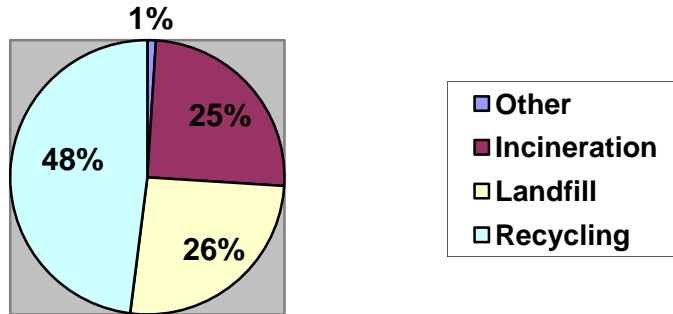


One of the food banks shown in the figure is the Regional Food Bank of Northeastern New York (Regional Food Bank). This food bank distributes food to 23 counties in eastern New York. The amount of food (in pounds) distributed to each of these counties in 2006 is as follows:

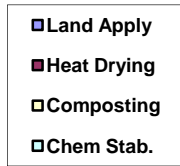
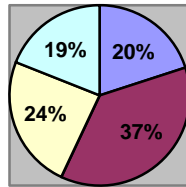
| | |
|----------------------|-------------------------|
| Albany - 3,066,381 | Otsego - 638,126 |
| Clinton - 308,886 | Putnam - 488,749 |
| Columbia - 271,394 | Rensselaer - 1,327,901 |
| Delaware - 119,482 | Rockland - 1,528,934 |
| Dutchess - 1,341,502 | Saratoga - 745,281 |
| Essex - 206,797 | Schenectady - 1,524,394 |
| Franklin - 1,232,096 | Schoharie - 206,748 |
| Fulton - 157,878 | Sullivan - 772,204 |
| Greene - 235,115 | Ulster - 1,567,522 |
| Hamilton - 26,299 | Warren - 981,945 |
| Montgomery - 311,857 | Washington - 173,717 |
| Orange - 2,434,746 | |

The Regional Food Bank provides food to more than 1,000 agencies which assist almost 200,000 people each year. The Regional Food Bank collects wholesale food from food companies, fresh produce, food in damaged packaging, and individual donations from various sources. One program that may be very useful in terms of expanding food diversion is the Moveable Feast. The Moveable Feast, run by the Regional Food Bank, collects donations of prepared and perishable food from grocery stores, restaurants, schools, and farm stands and delivers it directly to member agencies.

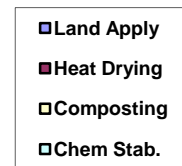
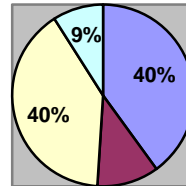
4. BIOSOLIDS MANAGEMENT IN NEW YORK STATE (DRY-WEIGHT BASIS)



Beneficial use options include direct land application, composting, alkaline stabilization, and heat drying. The figures below depict the breakdown of beneficial use methods, based on quantity of biosolids and number of treatment facilities. On a dry-weight basis, most beneficial use involves heat drying and use of the resultant pellets as a fertilizer. There are only two heat dryers in the state compared to 27 composting facilities, but the heat dryer located in New York City is so large that it treats about one-third of the biosolids beneficially used.



*Biosolids Beneficial Use
Dry-Weight Basis*

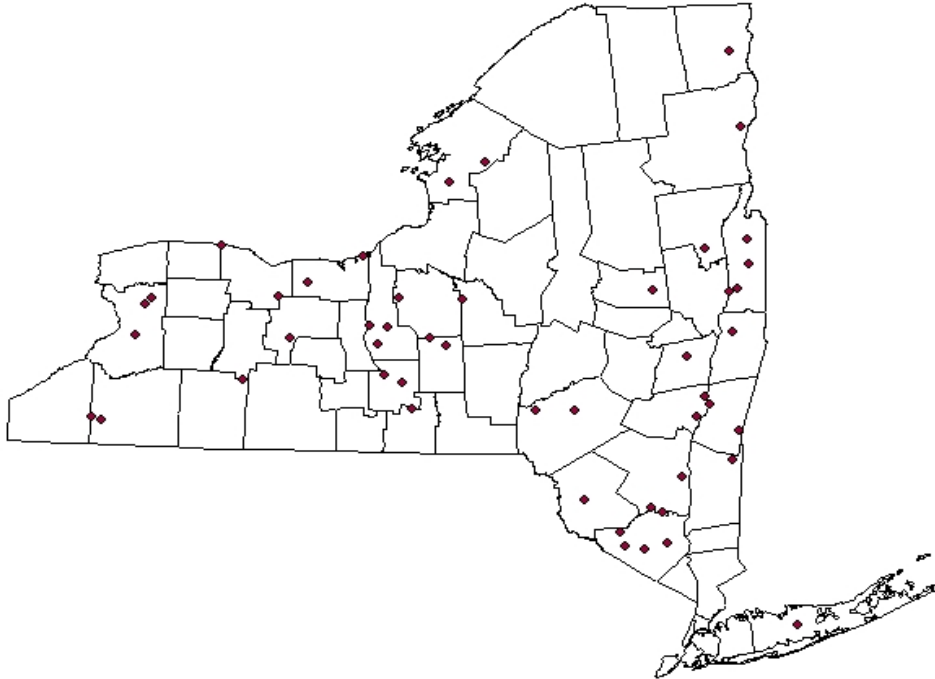


*Biosolids Beneficial Use
By Number of POTWs*

There are 57 permitted, biosolids, beneficial use facilities in New York State, including 27 composting facilities, 25 direct land application facilities, 2 heat drying facilities, and 3 alkaline stabilization facilities. These facilities are listed in the DEC *Biosolids Report*, which can be accessed on the department’s website. These 57 permitted facilities receive biosolids from 147 POTWs.

5. OTHER – CARCASSES, MANURE, ETC.

The map below shows the location of manure composting facilities in New York State.



This map is found on Cornell's website at: <http://compost.css.cornell.edu/maps/manures.asp>, which also has links to information about each site.