



Resource Recovery Report

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Recycling Spotlight



Borough of Wharton

Since October, 1981, the Borough of Wharton has united in a full scale recycling effort to separate newspaper, glass and aluminum cans from the municipal waste stream. By conceiving a well organized plan, mandating a recycling ordinance, and soliciting the involvement and cooperation of all borough residents, Wharton realized a combined disposal savings and recycling profit of \$424.42 only 5 months after initiating the program.

Wharton's landfill reached capacity in June of 1981. Without an economical means of disposing municipal wastes, and the pending county-wide landfill crisis, Wharton realized the urgency of implementing a mandatory source separation program. Since 1976 Wharton had operated a voluntary glass collection program, but it was generally agreed that an ordinance was necessary to insure a successful program.

The ordinance enacted in October, 1981, established a program for the separation of used newspapers, glass, and aluminum from household waste. It set up guidelines for a monthly curbside collection service for all residents, and prescribed penalties for violation of recycling rules.

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Wharton residents curb their separated newspaper, aluminum and glass. Glass bottles should be cleaned, and newspaper tied in short bundles or bagged.

High Technology Resource Recovery

Resource recovery refers to the process by which economically valuable products are reclaimed from the solid waste stream. These materials can be reclaimed by utilizing labor intensive manual techniques such as the recycling activities presently practiced by many households and businesses. This is referred to as "Low Technology" and is most readily employed on easily separable materials such as paper, glass, and metals.

"High Technology," resource recovery refers to capital intensive, mechanical or combustion processes used to recover valuable components of the waste stream. There are a wide

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Refuse-To-Energy Plant Visited

On July 7, members of the Morris County Board of Freeholders, the Solid Waste Advisory Council, and the Solid Waste Coordinator, visited a Refuse-to-Energy Plant at Hampton, Virginia.

The facility burns 200 tons of solid waste daily to generate steam, 85% of which is sold to NASA's Langley Research Center.

A unique aspect of this facility is that on July 1, tipping fees were eliminated. All operation, maintenance, and amortization costs are covered entirely by the sale of steam.

The trip is the third of this type made the the Freeholders.

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variety of these high technology methods and most, but not all, of them extract energy from solid waste.

Some systems extract energy indirectly by processing the waste into a refuse derived fuel (RDF). In these processes, metal, glass, and other non-combustible materials are separated from the organic fraction and are sold to appropriate markets if they exist. The organic fraction is marketed as RDF which can be burned in a dedicated boiler or co-fired with fossil fuel.

Differing processing methods result in different types of RDF. Fluff RDF is created by shredding and trommelling the organic fraction. This material, however, is bulky and difficult to transport. Densified RDF is created by extruding the shredded waste into pellets. This is easier to transport and store than the fluff.

Combustion of raw or shredded solid waste in waterwall and refractory furnaces has proven itself to be a viable disposal technology and a valuable source of energy. Solid waste combustion facilities are widely used in Europe and Japan where land is scarce and energy costs high.

RDF facilities are increasing in application throughout the United States. Representatives from Morris County, including Freeholder Director Knox and Freeholders Luger and Maynard, visited the RESCO resource recovery facility in Saugus, Massachusetts. This operation burns about 1200 tons of waste per day to generate steam for a nearby industrial user and is probably the most successful privately owned and operated facility of its kind in the country. The process results in about a 90 percent reduction in waste volume and the inert, sterile residue contains primarily metal and glass. The ferrous metals are removed magnetically and sold to scrap dealers and the remainder of the residue is landfilled.

Many experts believe that energy is the most valuable product that can be recovered from solid waste. Through waterwall combustion, steam can be reliably produced within the conditions typically required by industrial steam users. If required, electricity can also be produced through the addition of turbine generators. On the average, one ton of solid waste represents the energy equivalent of one barrel of oil, 500 kilowatts of electricity, or 5000 pounds of steam. A resource recovery



Lauren S. Roman

Coordinator Hired

In joining 12 other New Jersey counties in a statewide recycling effort, Morris County has hired Lauren Sara Roman to coordinate County recycling programs.

Ms. Roman received her B.A. in Environmental Geography from West Virginia University in 1980. As an undergraduate, she completed an internship with a regional planning council organizing a Solid Waste Management program for an 8-county region in West Virginia. Upon graduation, Roman became employed by a Metropolitan Planning Organization in Wheeling, West Virginia to develop an Energy Conservation and Contingency Plan. After completing the plan, she returned to her native state of New Jersey to work as the Natural Resource Specialist for the Morris County Soil Conservation District.

As Morris County's recycling coordinator, Lauren Roman will be assisting all municipalities and recycling groups which request assistance in expanding or establishing recycling programs. Anyone wishing to contact Ms. Roman can reach her at the County Planning Board at 285-6183.

facility which burns 50 tons of solid waste per hour could produce at least 25,000 kilowatts of electricity or 250,000 pounds of steam per hour. As an indicator of magnitude, this represents lighting for nearly 70,000 homes.

The Time Is Now!

The time is now for all municipalities to keep records on all recycling activities in their community. Whether the recycling is a municipal program, operated by volunteer groups or done by local business, records of tonnage, receipts must be kept in order to receive a Recycling fund Rebate at the end of 1982.

The Recycling Fund is financed by a 12¢ per cubic yard surcharge on all solid waste disposed of in a landfill. If a municipality has records of recycled tonnage, an application for a Recycling Tonnage Grant can be submitted to the N. J. Office of Recycling at the end of 1982.

Every Municipality is paying into the Recycling Fund, but only those with appropriate records will be eligible for a rebate.

There are ways to solicit the cooperation of local recyclers. By offering some type of publicity or the use of municipal equipment or manpower, these groups will be more conscientious in providing the municipality with the necessary information. For more detailed information, call or write Lauren Roman at the Planning Board.



Environmental Shopping

With the nation's growing health consciousness, more and more manufacturers are providing ingredient lists on their products. Now with the nation's growing environmental awareness, more and more manufacturers are using recycled paperboard packages. This packaging can be identified by the recycling symbol shown below:



Supermarket executives prefer the recycled packaging. The presence of these packages on their shelves demonstrates their concern for improving the quality of life in the community.

Manufacturers using recycled packages demonstrate to the public that their company supports worthwhile consumer concerns. The use of recycled paperboard also makes good economic sense for manufacturers.

Many consumers are recognizing this symbol on the goods they buy. Patronizing manufacturers who use recycled paperboard packaging is an easy, sensible way for consumers to take an active roll in resource recovery through their everyday shopping.

Reynolds Recycles Record Amount Of Aluminum

Reynolds Metals Company reports a record 328 million pounds of recycled aluminum generated by consumers in 1981. In 1981 the average amount of aluminum recycled daily was 900,000 pounds. That number is more than Reynolds recycled in their entire first year of operation in 1967.

Aluminum recycled by Reynolds represents an energy savings of more than 2 billion kilowatt hours of electricity. The program has also conserved more than 650,000 tons of bauxite ore, the raw material from which aluminum is made.

In addition to all-aluminum beverage cans and other clean household aluminum products, Reynolds purchases miscellaneous aluminum items such as siding, gutters, storm doors and window frames, and lawn furniture tubing. These items must be free of non-aluminum materials, cut into 3-foot lengths and bundled separately from cans.

Reynolds buys recycled aluminum from a network of more than 2000 collection points throughout the country. The nearest Reynolds recycling collection point for most of Morris County is in New Providence, at the corner of Springfield Avenue and Academy, every 4th Saturday from 10 a.m. to 1 p.m.



Recycling Symbol Contest

Morris County is in need of a symbol that will represent our County-wide recycling effort!

Anyone wishing to enter an idea for a recycling slogan or logo, should submit their ideas to Lauren Roman at the Planning Board.

The winning slogan and logo will become recognized as the official Morris County Recycling Program Symbol.



The Rockaway Valley Paper Recycling Center, in Wharton, buys aluminum cans. Here, an automatic can-collator removes contaminants, flattens cans, and blows them into a trailer.

Recycling Grants Information

There are three types of Recycling Grants available from the N.J. Office of Recycling. They are Tonnage Grants, Program and Planning Grants, and Education Grants. **Municipalities** may be eligible for all three grants. **Regional Recycling Coalitions** may be eligible for both Program and Planning and Education Grants. **Non Profit groups** are eligible for Education Grants.

Tonnage Grants will be awarded in 1983. The size of the grant will be determined by the total tonnage of eligible material recycled by each municipality's residents and commercial businesses during 1982. After 1983, the grant will be based on the annual increase in recycled materials. Although grant monies may be used for any municipal purpose, grants issued in following years will be based on the increase in recycling from the previous year. This is an incentive to reinvest the grant money in municipal recycling programs.

Program and Planning Grants may be applied for in late-summer, 1982 when the applications will be available from the N. J. Office of Recycling (648-6295). Program and Planning Grants shall not exceed 50 percent of the direct project costs such as:

- Equipment purchases
- Enforcement

- Publicity
- Staff salaries and fringe benefits

These funds must be used for purposes stated in the grant application.

Education Grant applications will also be available in late summer. Education Grants shall not exceed 75% and may be used for any legitimate expenditures associated with recycling and litter abatement publicity, information and education programs such as:

- Printing and distribution expenses
- Advertising expenses
- Costs essential to a successful education and information program.

For further information on Grant Programs, contact the County Recycling Coordinator.

Survey Conducted

Every municipality in the County has received at least one Municipal Recycling Survey Form from the County Recycling Coordinator. The forms must be returned in order to solicit assistance in recycling from the County. Everyone is encouraged to contact the individual in their town who is responsible for recycling, and make sure that the survey has been returned!

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The Borough has established an ongoing public education program. Local newspapers advertise the program's guidelines and collection schedule, and postcards containing recycling information are mailed to all residents. A note of thanks, a recycling schedule and a financial report has also been included in the free Municipal and Civic Calendar.

The following table summarizes Wharton's recycling program economics from October 1981 through February 1982:

VOLUMES RECYCLED:

Glass 64,890 lbs.
 Newspaper 49,030 lbs.
 Aluminum cans 1,534 lbs.

CUBIC YARDS REMOVED FROM LANDFILL WASTESTREAM:
 181.5 yd.³

INCOME FROM SALES OF RECYCLABLES:

Glass \$973.35
 Newspaper 392.23
 Aluminum cans 306.80
 \$1672.38

DISPOSAL COSTS AVOIDED THROUGH RECYCLING:

Landfill tipping fees \$290.00
 Vehicle costs 286.00
 Manpower costs 139.00
 \$715.32

TOTAL INCOME PLUS SAVINGS

.....\$2387.70

RECYCLING PROGRAM EXPENSES:

Manpower, advertising, trucks \$1963.28

TOTAL BENEFIT:\$424.42

The Borough of Wharton is to be commended for their aggressive program of recycling through source separation. Monetary incentives, grants, and loan programs have been promulgated in the New Jersey Recycling Act. Assistance is also available from the Morris County Recycling Coordinator. It is the determination of the Solid Waste

Did You Know ???

...that the recycling of oil, tires, road asphalt and composting operations is eligible for inclusion in Municipal Recycling Tonnage Grants? The collector must keep careful track of the amount of material collected. For example, in a leaf collection, the collector must record the number of trucks used and their rated capacity. The sponsor must certify that the tonnage is accurate, and that the leaves were actually composted, and not burned or landfilled.

The table below shows common conversion factors for these materials:

YARD MATERIAL	CUBIC YARDS/TON	LBS/CUBIC YARD*
Leaves (uncompacted)	8	250
Leaves (compacted)	2.66	750
Tree Trimmings (branches, twigs)	2.75	725
New Wood Chips (tree trunks)	3.33	600
Grass Clippings	N/A	N/A
OTHER MATERIAL	UNITS/TON	WEIGHT/UNIT
Used Motor Oil	286 gallons/ton	7 lbs/gallon
Road Asphalt	1.5 yd /ton	1 ton/18 ft , 1" thick
Shredded Tires	2.66 yd /ton	750 lbs/hd

*Source: **Sludge Composting and Utilization: Statewide Applicability for New Jersey.** Bolan, Nieswand and Singley, Cook College, N.J.: Agricultural Experiment Station, May 1980.

Advisory Council (SWAC) that all Morris County municipalities follow Wharton's example, and begin working toward the statewide goal to reduce the municipal waste stream 25 percent by 1986.

¹ Landfill tipping fees began at \$1.05/yd³ before closing of Combe Fill, Chester. They rose to \$1.32/yd. at Hamm's, Lafayette. Hamm's charge rose \$1.89/yd with the 12¢ Recycling Act surcharge, and the 45¢ Closure and Contingency Fund surcharge.



Safeguards Raise Landfill Rates

As a result of the Sanitary Landfill Closure and Contingency Fund Act (P.L. 1981c.306) a 45¢ per cubic yard surcharge is added to all landfilled wastes. This fund was established to cover the high costs of rendering landfills environmentally stable upon reaching capacity.

SOLID WASTE STAFF

Kenneth Gallagher
 Solid Waste Coordinator
 Glenn Schweizer
 Senior Planner
 Lauren S. Roman
 Recycling Coordinator and Editor

Glass Recycling Reaches New High In New Jersey

A record 424 million glass bottles and jars were recycled in New Jersey in 1981 according to the Glass Packaging Institute (GPI).

The trade association for glass bottle makers says nine New Jersey glass plants recycled 23 percent more containers in 1981 than the year before. In total 239 million pounds of glass bottles were recycled, thereby reducing litter and solid waste burdens in the state.

John D. Elliot, coordinator of the recycling operation at Owens-Illinois, Inc. North Bergen Glass Reclamation Center, credits the dramatic increase in glass container recycling to the New Jersey Recycling Act.

At Morris County's own Thatcher Glass Company in Wharton, 300 tons of cullet (broken or refuse glass) are used every day. According to George D. Solyak of Thatcher Glass, less energy is needed to produce new glass bottles when the cullet is mixed in with the virgin materials. Solyak added that Thatcher is looking for more cullet for their operations, and hopes that more municipalities will begin to remove glass from their waste streams.