

RESOLUTION 76-10

WHEREAS, the present method of disposing of solid waste is not satisfactory because:

1. It requires that large areas of land be set aside for landfill purposes. Such land could be better used for recreational or private purposes.
2. U.S. Geological Survey has found that soil conditions in most of Monroe County are not acceptable for landfill purposes due to the fact that crevassed limestone allows easy flow of leachate into water systems.
3. A landfill operation is wasteful of solid waste materials since no recycling is involved.
4. The present system has serious environmental and economic repercussions.
5. The present landfill site is expected to overflow its boundaries this year and if a new site is purchased it too will have a limited duration.

WHEREAS, the most viable long-term solution would be the construction of a solid waste recycling plant where the metal and glass would be extracted and sold and the remaining paper product could be shredded and burned for energy or bundled and sold.

THEREFORE, BE IT RESOLVED BY THE COMMON COUNCIL OF THE CITY OF BLOOMINGTON, INDIANA

SECTION I: That a solid waste recycling committee be created to study the question of:

- (1) The alternative solid waste recycling systems that have been established by other communities (i.e., how they operate, costs involved, revenue generated, etc.).
- (2) The feasibility of establishing a recycling plant to serve Monroe County (i.e., population served, engineering requirements, solid waste handled on a daily basis, cost/revenue analysis, etc.).
- (3) The environmental, land use, and economic implications associated with solid waste recycling.

SECTION II: That said study committee shall be empowered to solicit funds from state and federal agencies with which to conduct such a study.

SECTION III: That said study committee shall be created solely for the purpose outlined above and shall within one year make a report as to findings and recommendations for action.

SECTION IV: That the said study committee may be granted an extension for one year periods by a continuing resolution.

SECTION V: That said study committee shall consist of nine (9) members representing the following governmental bodies and organizations:

1. A representative from the Common Council, City of Bloomington.
2. A representative from the Monroe County Board of Commissioners.
3. A representative from the Monroe County Council.
4. A representative from the Monroe County Board of Health.
5. A representative from the Planning Department, City of Bloomington.
6. A representative from the Engineering Department, City of Bloomington.
7. A representative from the Environmental Commission, City of Bloomington.
8. A representative from the Sierra Club.
9. A representative from the League of Women Voters.

Each of the above bodies shall be responsible for designating a representative from their membership.

SECTION VI: The final report of the Monroe County Solid Waste Recycling Committee may be adopted or amended by the by a ratifying or amending motion.

Passed and adopted by the Common Council of Bloomington, Monroe County, State of Indiana, this \_\_\_\_\_ day of \_\_\_\_\_, 1976.

\_\_\_\_\_  
Clem J. Blume  
Common Council President

Approved by the Mayor of the City of Bloomington, Monroe County, State of Indiana, this \_\_\_\_\_ day of \_\_\_\_\_, 1976.

\_\_\_\_\_  
Francis X. McCloskey  
Mayor City of Bloomington

SYNOPSIS

RESOLUTION 76-10

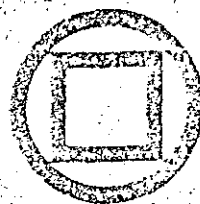
A Resolution Creating a Solid Waste Recycling Committee

The present method of solid waste disposal for Bloomington is simply to dump it in a sanitary landfill. This kind of disposal creates serious environmental problems because of the special soil conditions in most of Monroe County. Further, the present system ignores recycling any of the solid waste material, and the present site for the landfill is predicted to overflow its boundaries this year. One solution to these problems is a solid waste recycling plant. This resolution creates a committee to study the feasibility of constructing such a plant for use in Monroe County. The committee will last for one year, and may be renewed for additional year periods by passage of continuing resolutions by the Council.

# REFUSE REPORT

## Summaries of the Latest Happenings in Solid Waste

International  
City  
Management  
Association



Vol. 1 No. 3

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May/June 1975

CITY OF AMES

## Resource Recovery Comes to Ames

On July 16, 1975 EPA Administrator Russell Train is expected to dedicate the Ames, Iowa Resource Recovery Plant. This will mark the culmination of over 3 years of effort by the city. The Ames system is unique in several ways. The size, the inter-governmental arrangements, financing and costs are all areas where Ames has excelled.

The population of Ames is about 40,000 people, a size that many say is impractical for resource recovery. In order to make the system more cost effective the city has signed 25 year contracts with 10 adjoining cities to process their waste and share costs. This assures a regional disposal solution and provides for an equalized sharing of costs and risks among those who benefit.

About 210 tons of refuse per day will be processed on a 5 days per week basis. This represents approximately 75% of all waste generated in the 10 city regional area. About 25% of the gross tonnage is largely dirt, sand, rock, broken pavement, street sweepings and construction wastes. This material will go directly to the landfill. The plant is scheduled initially to operate 6 hours per day with 2 hours scheduled for maintenance.

### The System

In simple terms the Ames system takes mixed residential waste, processes it and then burns it in the city's utility boilers. The technology of using refuse as a supplemental fuel in coal fired boilers is essentially the same as the St. Louis Union Electric System.

All commercial and industrial wastes are accepted at the processing plant. (Figure 1) Refuse will go through a two stage shredding process with magnetic separation between shredders. The second shredder reduces the refuse to 1½ inches in nominal size. This material is then air classified into heavy and light fractions.

The light fraction is pneumatically piped to a large storage bin which will allow the electric utility to use the "fuel" on a 24 hour basis.

Three utility boilers were modified to accept the processed refuse. This material has about 50% of the BTU value of coal. Initially the city will use a mixture of 10% refuse and 90% coal as fuel, but eventually the ratio may be increased to 20% garbage and 80% coal.

While the light fraction is being burned with coal to generate electricity the heavy fraction will be further processed to recover materials. Magnetic belts will remove ferrous metals. Glass, sand and grit are removed by screening. When glass is shredded twice it is essentially sand. This will be stored in the summer to be used for ice and snow control in the winter.

A unique feature of the Ames system is that aluminum will be recovered using a new device which electromagnetically repels aluminum as it moves along a conveyor belt thus separating it from the waste.

Another aspect of the system is the capability of handling brush, yard waste, and large trees. These materials are processed by a chipper which has the capacity to handle logs of up to four feet in diameter. The end product is a wood chip mulch which will be sold to Iowa State University's veterinary facilities for use as bedding.

### Financing

The Ames facility was financed by a \$5.3 million general obligation bond issue and \$200,000 in revenue sharing funds. The bonds are for a term of 20 years and were issued at a 5.32% rate. Two special acts of the Iowa Legislature were needed in order for Ames to move forward. The first passed 2 years ago allowed cities to construct solid waste facilities. The second piece, passed in

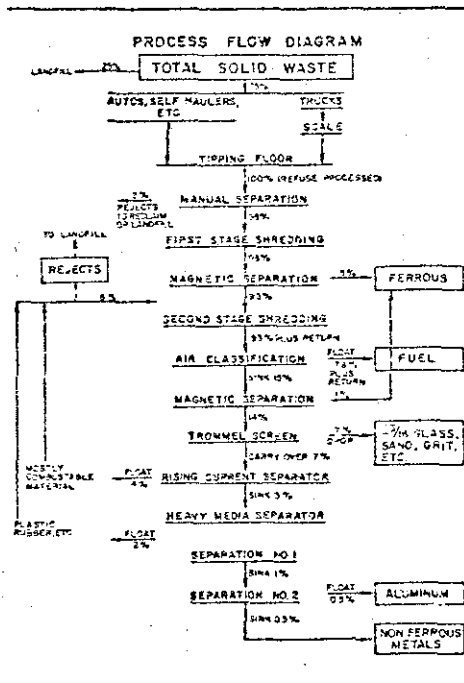


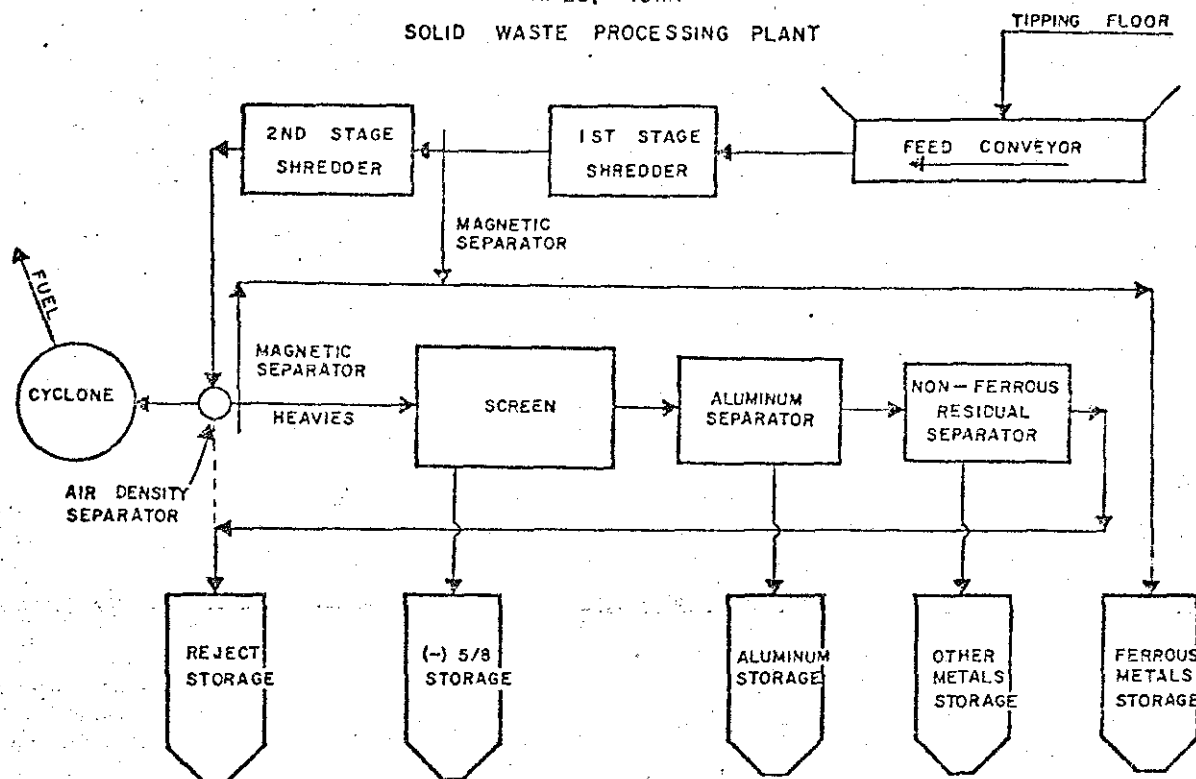
Figure 1

January, allowed Ames to market their bonds (previously they had been limited to a 5% rate). The bonds will be paid off from the general funds of Ames and the shared cost/ton to cities in the area. The 10 cities and county will pay a cost/ton based on population.

### Organization

Organizationally the electric utility is owned and operated by the city. This was a tremendous advantage to Ames. The city did not have to seek and convince the utility about the merits of the system. This assured a ready market for the processed refuse "fuel." The electric generating plant operates directly under the supervision of the

AMES, IOWA  
SOLID WASTE PROCESSING PLANT



mayor and council, through the city manager. Ames does not operate its utility through a separate non-political board. Thus, cooperation within a single city administration has been easy to achieve.

### Costs

As with any resource recovery system, one of the primary considerations is costs. Table 1 gives an annual cost breakdown. Based on 210 tons per day the system will cost \$14.25 per ton of refuse processed. But the city will be able to subtract from this the revenue it obtains from the sale of recovered metals

and the value of the fuel being used in the utility plant. Using a fuel credit of \$10/ton (about half the cost of coal) and a conservative estimate of revenue from metals of \$2.90/ton we get a net cost of refuse processed of \$1.35/ton. In this analysis, no credit is given for an expected reduction in the cost of hauling refuse to the centrally-located plant or for the reduced landfill costs (because of reduced volume).

### Transferability

The Ames system is unique in many ways. The city is showing that resource recovery is

not limited to large cities. A recent ICMA-EPA survey (see *Refuse Report* Jan/Feb 1975) indicated that 166 cities have plans to implement a capital intensive resource recovery system in the next five years. 89 of these cities are under 50,000 people.

The intergovernmental contracts that Ames initiated guaranteed a waste flow and a sharing of the risks. The fact that the city owned and operated its own utility aided the process.

By using general obligation financing, and without the profit motive, the city will be able to operate an environmentally acceptable disposal system which saves resources, land, and energy and all at a cost/ton that is equal to or less than landfilling. Ames is truly a groundbreaker in the field.

Table 1 PROJECTED ANNUAL COST SUMMARY

	1975	1985
<b>Refuse processed</b>		
Tons/day, 5 days per week.....	210	287
Annual tons.....	54,750	73,000
<b>Annual costs</b>		
Amortization \$5.6 million capital investment 5.3% and 20 years.....	\$469,000	\$469,000
Operating and maintenance.....	311,250	340,000
<b>Total annual cost.....</b>	<b>\$780,250</b>	<b>\$809,000</b>
<b>Cost per ton processed.....</b>	<b>\$14.25</b>	<b>\$11.08</b>
<b>Less fuel value credit (\$/ton).....</b>	<b>-\$10.00</b>	<b>-\$10.00</b>
<b>Less metals recovery credit (\$/ton).....</b>	<b>-\$ 2.90</b>	<b>-\$ 2.90</b>
<b>Net cost of disposal (\$/ton).....</b>	<b>\$ 1.35</b>	<b>-\$ 1.82</b>

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COMMITTEE REPORT SHEET

COMMITTEE Planning/Community Dev.  
 LEGISLATIVE NUMBER Resolution 76-10  
 SUBJECT MATTER Solid Waste Recycling  
 ORIGIN Plan. Dept.  
 DATE OF MEETING 2/24/76  
 READING Second

RECOMMENDATION:  DO PASS  NO RECOMMENDATION AT THIS TIME  
 TENTATIVE DO PASS; SUBJECT TO CONDITIONS BELOW  
 MINORITY REPORT  FILED  NONE

COMMITTEE DISCUSSION

Amend SECTION II. to include:  
 10. A representative from the Meyer  
 11. A representative from the Judson Society

SIGNATURES OF COMMITTEE MEMBERS

Jack Menison Jack  
 Chairperson  
Clay Blum Clay  
Howard E Young Howard