

COUNCIL ACTION FORM

SUBJECT: **2017 RESOURCE RECOVERY ANNUAL REPORT**

BACKGROUND:

The Resource Recovery System continues to be one of the most successful methods of landfill diversion in the state of Iowa. The Resource Recovery Annual Report shows that 51,254 tons of Municipal Solid Waste (MSW) was generated within the system during 2017. Approximately 43,288 tons were received at the plant and processed to create 21,005 tons of Refuse Derived Fuel (RDF). The remaining 7,966 tons of solid waste had to be diverted to the Boone landfill mainly due to outages at the Power Plant. An estimated 1,804 tons of metal and 131 tons of glass were recovered for recycling. Over 55 tons of Household Hazardous Materials and pumpkins were diverted from the landfill including all types of household items, exercise equipment, and office furniture sold for reuse at the Rummage Rampage.

Revenues from all sources totaled \$3,916,920 and total expenses were \$4,545,420. This resulted in a net reduction of \$628,500 to the Resource Recovery fund for Calendar Year 2017. This impact to the fund balance was the result of more frequent downtime in our Power Plant boilers, which leads to a reduction of the incoming tonnage along with an associated loss in tipping fee revenue. To further exacerbate the problem, boiler outages lead to a reduction in the amount of RDF being sold to Electric Services and a corresponding loss in revenue as well as an increase in hauling costs for the rejects to the Boone landfill.

It should also be noted that income from recovered metals has dropped dramatically over the past several years, primarily due to a reduction in the overall demand for scrap metal worldwide. The ferrous metals recycling market is still in flux, reflecting low global pricing in 2017 and projected for 2018. This has led to a loss in revenue of nearly \$200,000 per year, as compared to FY 2015.

Due to this reduction in revenue, the per capita fee beginning in calendar year 2018 will return to \$10.50. In 2011, the per capita fee (based on the certified 2010 census) was lowered from \$10.50 to \$9.10. From 2004 to 2010, the per capita fee was \$10.50 and prior to that it was \$11.75. As this payment is made in arrears, the fee will not be billed until May 2019 and November 2019. Tipping fees for municipal solid waste will remain at \$55/ton while the car line rates will remain at \$10 for cars/passenger vans and \$25 for pickups/trailers.

ALTERNATIVES:

1. Accept the attached 2017 Resource Recovery Annual Report; authorize staff to distribute the report and to invoice the participating communities with a per capita fee of \$10.50 beginning with the 2018 billings.
2. Request further information from staff.

MANAGER'S RECOMMENDED ACTION:

The City Council acceptance of this report will allow staff to bill our participating partners for their respective portions of the Resource Recovery System's 2017 costs. **Staff is aware of the financial challenges facing the Resource Recovery operations and, therefore, an inter-departmental team has been formed to identify options to assure the financial viability of this utility.**

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No.1, as noted above.

ARNOLD O. CHANTLAND RESOURCE RECOVERY SYSTEM 2017 Annual Report



Table of Contents

Letter from the Director	
Service Objectives & Highlights.....	1-6
Materials, Revenues & Expenses	7-8
Population-Percentages-Charges.....	9
Resource Recovery Plant Volumes.....	10
Resource Recovery System Fee Schedule.....	11

Thank you to our partners in sustainability!

- Nevada
- Story City
- Huxley
- Slater
- Roland
- Gilbert
- Maxwell
- Cambridge
- Zearing
- McCallsburg
- Kelley
- Story County
- Iowa State University

February 14, 2018

Dear Resource Recovery System Members:

We are truly grateful to the member agencies for our long-standing partnership and their **continuing commitment to sustainability!** Our continuing partners are **Nevada, Story City, Huxley, Slater, Roland, Gilbert, Maxwell, Cambridge, Zearing, McCallsburg, Kelley, Story County, and Iowa State University.**

The Resource Recovery System continues to be one of the most successful methods of landfill diversion in the state of Iowa. The Resource Recovery Annual Report shows that 51,254 tons of Municipal Solid Waste (MSW) was generated within the system during 2017. Approximately 43,288 tons were received at the plant and processed to create 21,005 tons of Refuse Derived Fuel (RDF). An estimated 1,804 tons of metal and 131 tons of glass were recovered for recycling. Over 55 tons of Household Hazardous Materials and pumpkins were diverted from the landfill along with all types of household items, exercise equipment, and office furniture sold for reuse at the Rummage Rampage.

Revenues from all sources totaled \$3,916,920 and total expenses were \$4,545,420. This resulted in a net reduction of \$628,500 to the Resource Recovery fund for Calendar Year 2017. This impact to the fund balance was the result of more frequent downtime in our Power Plant boilers, which results in a reduction of the incoming tonnage along with an associated loss in tipping fee revenue. To further exacerbate the problem, boiler outages also lead to a reduction in the amount of RDF being sold to Electric Services and a corresponding loss in revenue as well as an increase in hauling costs for the rejects to the Boone landfill. Also, the income from recovered metals has dropped dramatically over the past several years, primarily due to a reduction in the overall demand for scrap metal worldwide. The ferrous metals recycling market is still in flux, reflecting low global pricing in 2017 and projected for 2018. This has led to a loss in revenue of nearly \$200,000 per year, as compared to FY 2015.

Due to this reduction in revenue, the per capita fee beginning in calendar year 2018 will return to \$10.50. In 2011, the per capita fee (based on the certified 2010 census) was lowered from \$10.50 to \$9.10. From 2004 to 2010, the per capita fee was \$10.50 and \$11.75 prior to that. As this payment is made in arrears, the fee will not be billed until May 2019 and November 2019. Tipping fees for municipal solid waste will remain at \$55/ton while the car line rates will remain at \$10 for cars/passenger vans and \$25 for pickups/trailers. **Due to the financial challenges facing Resource Recovery operations, an inter-departmental team has been formed to identify options to assure the financial viability of this utility. Recommendations may include rate increases in the future.**

If you or any of your constituents have questions about this annual report or any of the activities of the Resource Recovery System, please do not hesitate to contact me or Bill Schmitt (515-239-5137).

Sincerely,



John C. Joiner, P.E.
Public Works Director

RESOURCE RECOVERY

The City of Ames and surrounding communities are served by the Arnold O. Chantland Resource Recovery Center. Communities sharing in this endeavor are **Cambridge, Gilbert, Huxley, Kelley, Maxwell, McCallsburg, Nevada, Roland, Slater, Story City, Zeoring, and unincorporated Story County.**

Costs to these communities are figured on a per capita basis using 2010 census figures. Operations include separating combustible material and processing it into refuse-derived fuel (RDF). The RDF is sold as a supplemental fuel to the City of Ames Electric Utility. Ferrous and non-ferrous metals are also recovered and sold on the scrap market for recycling. The remaining non-usable material has been contract-hauled to the Boone County Landfill since July 1992 (the City of Ames closed its landfill on June 20, 1992). Major plant maintenance is generally conducted during an annual two-week downtime to perform repairs in addition to the daily routine maintenance and repairs. Yard waste activities involve the source separation and contracted composting/land application of “yard waste” (leaves, grass, tree limbs, etc.). In 2006, glass recycling was added to the recycling options provided by the plant. Household hazardous materials (HHM) collection began in 1998 with local events, and has progressed to Wednesday afternoon appointments for residents to dispose of their waste. Tires are accepted for a fee and recycled through a national tire recycling company. Compact fluorescent and incandescent light bulbs are accepted at no charge for recycling. A new bin has been placed on the tipping floor for used American flag collection, as well as a locked container specifically for sharps (needles, lancets, etc.) collection. Waste oil, antifreeze, and batteries are also accepted for recycling.

Service Objectives:

- ✓ **Provide a responsible, sustainable, local solution for solid waste disposal in support of City Council's goal to expand sustainability efforts**
- ✓ Provide refuse derived fuel to the Power Plant as an alternative fuel source to natural gas
- ✓ Maintain the Household Hazardous Materials (HHM) program, including sharps drop-off
- ✓ Provide used American flag collection for proper disposal
- ✓ Continue to provide proper recycling for waste oil, antifreeze, batteries, fluorescent bulbs, and tires
- ✓ Maintain positive relationships with member agencies
- ✓ Provide yard waste disposal for Story County residents
- ✓ Continue to expand glass recycling
- ✓ Maintain the closed landfill
- ✓ Continue community connections through school science fairs, service club presentations, and facility tours
- ✓ Continue researching possible bio-energy connections with the Power Plant
- ✓ Maximize recycle/re-use of unwanted and municipal solid waste

The **per capita rate** (last adjusted FY 2012/13) for our partner cities and Story County will increase to \$10.50 for calendar year 2018 (as this payment is made in arrears, the fee will not be billed until May 2019 and November 2019). **Tipping fees** (last adjusted in 2002) for municipal solid waste were raised to \$55/ton; the rate for cars and passenger vans rose to \$10, and pickups and vehicles with trailers to \$25 on July 1, 2017.

The area encompassed by the Resource Recovery System produced just 126 tons less of municipal solid waste (1%) in FY 16/17 than the previous year, an indication that residents are recycling and producing less waste. Tonnage sent directly to the Boone County Landfill for disposal was 6,177 tons, a 61% reduction from FY 15/16.

RESOURCE RECOVERY

Highlights:

Resource Recovery continued work on the Solid Waste Alternatives Program (SWAP) grant from the Department of Natural Resources for “Waste Diversion and Public Opinion Study.” A waste sort was performed in June 2016, and SCS Engineers were tasked with developing/analyzing surveys to enhance waste diversion, increase efficiency of the Resource Recovery System and increase awareness and understanding of citizen value and interest in additional waste management related services. When surveys are complete, recommendations will be reviewed in 2018.



From left: Merry Rankin, Sustainability Director ISU; Corey Mellies, Fleet Services Director; John Joiner, Public Works Director.

RESOURCE RECOVERY

Highlights, continued:

The original tipping floor was completely replaced and drains repaired in March 2017. Quartzite rock, a hard, non-foliated metamorphic rock (originally pure quartz sandstone) is found in Eastern South Dakota, was used in the aggregate mix for the floor to increase the life of the surface and improve traction. The new floor contains 300 cubic yards of concrete was used to replace the floor at a depth of 9”.





RESOURCE RECOVERY

Highlights, continued:

The ferrous metals recycling market is still depressed and continues to reflect low pricing globally. Currently, Resource Recovery delivers ferrous metals garnered from the process to a local scrap dealer for recycling and have begun to receive payment for scrap again. Non-ferrous metals have ranged from \$.29 to \$.55 over the past four years, averaging \$.44 per pound.



Over 10,000 pounds of pumpkins were disposed of in 2017 through the Great Pumpkin Disposal Program. Keeping pumpkins out of the waste stream improves the quality of refuse-derived fuel to the Power Plant, and keeps those organic tons out of the landfill. The pumpkins were composted through the City's contracted yard waste partner, Chamness Technology.

In alignment with exterior enhancements, the east fence and gate replaced, improving winter weather functionality, as well as visual aesthetics.

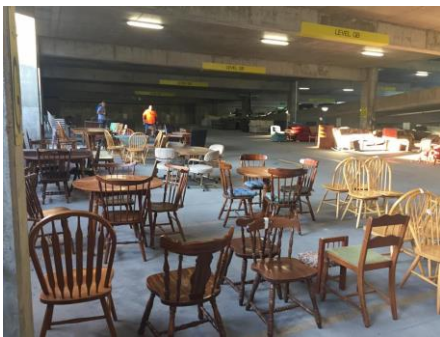


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RESOURCE RECOVERY

Highlights, continued:

The City of Ames, in partnership with the ISU Office of Sustainability, for the second year, hosted “Rummage RAMPage,” an event planned to keep reusable items out of the landfill during move out and lease changeovers. Students and community members are often faced with the dilemma of moving residences and discarding personal property; usable items are thrown in the trash or randomly discarded through dumping, and items end up abandoned, damaged, or deposited in the landfill. Rummage RAMPage was held at the Ames Intermodal Facility parking ramp, promoting sustainability in our community. Volunteers assisted with the collection of donations of still-usable items, and helped run the rummage sale in the parking ramp. Proceeds from the sale tripled over the first year (to about \$15,000) and were divided among the non-profit volunteer groups that assisted. Items were offered for sale, “priced to move,” at \$1, \$5, \$10, and \$20. About 77,520 pounds of material (furniture and other household goods) were diverted from landfilling, and only 1,420 pounds were not able to be reused or recycled. Donations were also accepted for the Ames Public Library, Volunteer Center of Story County Blast Back to School Program, area thrift stores, Animal Shelter, and Mid-Iowa Community Action.





RESOURCE RECOVERY

Service Accomplishments: (fiscal year)	2015/16 Actual	2016/17 Actual	2017/18 Adjusted	2018/19 Projected
Tons of refuse available	52,182	51,987	52,500	53,000
Tons of refuse diverted to Boone landfill	10,422	6,194	4,877	2,000
Tons of refuse processed	41,646	45,386	47,623	51,000
Tons of RDF to Electric Utility	23,483	23,514	24,288	24,000
Tons of glass recycled	180	141	180	180
Tons of metal recycled	1,182	2,071	2,000	2,000
Pounds of HHM* collected	24,132	22,374	22,000	22,000
ISU tons into plant	3,809	3,665	3,526	3,500
Pounds diverted from landfill to Rummage RAMPage	44,645	77,520	80,000	90,000
Average # of vehicles/free yard waste day	484	743	663	625
Efficiency and Effectiveness:				
% of available materials processed	80%	87%	80%	80%
Reject disposal rate/ton (Boone County)	\$46.50	\$46.50	\$46.50	\$48.00
% of processed materials that are sent to the landfill as rejects	38%	41%	44%	40%
Reject transportation rate/ton	\$13.30	\$13.68	\$13.52	\$13.75
Average cost/user free yard waste day	\$5.36	5.74	6.54	6.75

* Household Hazardous Materials

CITY OF AMES, IOWA
RESOURCE RECOVERY SYSTEM

**Revenues and Expenses
For Calendar Year 2017**

REVENUES:

Per Capita	\$717,217	
Refuse Derived Fuel-Electric	590,897	
Sale of Metals	133,919	
Public Fees	65,567	
Regular Customers	2,123,977	
Reimbursements and Refunds	2,954	
Other Governmental Agencies	6,559	
Out of County Revenue	627	
Scrap Tires	4,536	
I.S.U. Solid Waste Share	266,857	
Interest Revenue	3,661	
Sale of Glass	0	
Damage Claims	151	

\$3,916,920

EXPENSES:

Operations	4,379,032	
Debt Service	166,388	

\$4,545,420

Net Income/Expense	(\$628,500)
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MATERIALS, REVENUES & EXPENSES

RESOURCE RECOVERY SYSTEM

Year	Total Refuse (Tons)	*** Refuse Not Processed (Tons)	Refuse Processed (Tons)	% of Total Processed	Metals (Tons)	Glass (Tons)	RDF (Tons)	RDF (% of Processed)	Total Diverted %	Revenue	Expense
1998	48,643	953	47,690	98%	1,903	0	31,138	65%	69%	\$3,373,503	\$3,183,602
1999	49,164	2,794	46,370	94%	1,654	0	30,434	66%	69%	\$3,161,495	\$3,220,240
2000	48,896	4,499	44,397	91%	1,401	0	28,095	63%	66%	\$3,097,282	\$3,313,053
2001	50,093	5,138	44,955	90%	1,104	0	30,435	68%	70%	\$3,353,739	\$3,281,503
2002	50,267	1,550	48,717	97%	1,258	0	35,147	72%	75%	\$3,731,348	\$3,110,513
2003	51,906	4,770	47,136	91%	1,678	0	33,146	70%	74%	\$3,803,639	\$3,527,346
2004	53,788	2,762	51,026	95%	2,332	0	34,334	67%	72%	\$4,017,107	\$3,462,794
2005	54,493	1,025	53,468	98%	2,250	0	32,621	61%	65%	\$4,285,110	\$3,716,566
*2006	55,500	4,511	50,989	92%	2,229	54	30,180	59%	64%	\$4,250,337	\$4,449,985
2007	57,333	4,513	52,820	92%	2,102	96	34,182	65%	69%	\$4,392,686	\$4,531,663
2008	57,470	4,754	52,716	92%	2,068	115	36,060	68%	73%	\$4,632,493	\$3,725,904
2009	53,395	6,748	46,647	87%	1,987	130	31,040	67%	71%	\$3,956,279	\$5,507,045
2010	58,756	1,262	57,494	98%	2,347	129	37,865	66%	70%	\$4,937,018	\$4,605,121
2011	55,270	4,659	50,611	92%	2,166	150	34,422	68%	73%	\$4,697,573	\$3,729,248
2012	53,106	3,725	49,381	93%	2,177	145	32,329	65%	70%	\$4,641,704	\$4,089,447
2013	54,159	10,066	44,093	81%	1,873	171	28,262	64%	69%	\$4,062,010	\$4,196,226
2014	55,698	8,204	47,494	85%	2,104	173	29,595	62%	67%	\$4,501,455	\$4,555,974
**2015	54,394	6,641	47,753	88%	2,201	177	25,194	53%	58%	\$4,205,529	\$4,342,664
2016	52,210	8,953	43,257	83%	1,947	159	24,135	56%	61%	\$3,818,109	\$4,086,378
2017	51,254	7,966	43,288	84%	1,804	131	21,005	49%	53%	\$3,916,920	\$4,545,420
20-YR TOTAL	1,065,795	95,493	970,302	91%	38,585	1,630	619,619	64%	70%	\$80,835,336	\$79,180,692

* Closed for one month for air knife installation

** Closed for 6 weeks for power plant upgrades

***Reflects tons to Boone County landfill from planned shut downs, unplanned shut downs, and non-beneficial MSW from the waste stream

CITY OF AMES, IOWA

POPULATION - PERCENTAGES - CHARGES

Annual Billing - Calendar 2017 at \$9.10

Annual Billing - Calendar 2018 at \$10.50

	Population	Percent of Population	Calendar Year 2017	Calendar Year 2018
Ames	49,765	63.14%	\$452,862	\$522,533
Story County	8,706	11.05%	\$79,225	\$91,413
Nevada	6,798	8.63%	\$61,862	\$71,379
Story City	3,431	4.35%	\$31,222	\$36,026
Huxley	3,317	4.21%	\$30,185	\$34,829
Slater	1,489	1.89%	\$13,550	\$15,635
Roland	1,284	1.63%	\$11,684	\$13,482
Gilbert	1,082	1.37%	\$9,846	\$11,361
Maxwell	920	1.17%	\$8,372	\$9,660
Cambridge	827	1.05%	\$7,526	\$8,684
Zearing	554	0.70%	\$5,041	\$5,817
McCallsburg	333	0.42%	\$3,030	\$3,497
Kelley	309	0.39%	\$2,812	\$3,245
TOTALS	78,815	100.00%	\$717,217	\$827,558

Based on 2010 U.S. Census

Ames is 58,965 minus I.S.U. 9,200

**CITY OF AMES, IOWA
RESOURCE RECOVERY PLANT VOLUMES
For Calendar Year 2017**

<i>Generators</i>	<i>2017 TRIPS</i>	<i>2017 TONS</i>	<i>PERCENT OF TOTAL WEIGHT</i>
Non-Scale Refuse (Car line)	4,699	1070	2.3%
Commercial Haulers	8,817	38,900	77.4%
Private Industry/Contractors	389	340	0.6%
City of Ames	33	41	0.1%
Iowa State University	949	3,436	7.4%
Iowa Dept. of Transportation	8	2	0.2%
USDA Lab	40	94	0.4%
Directly to Boone	1,580	7,371	11.6%
TOTALS	16,515	51,254	100.0%

CITY OF AMES, IOWA

RESOURCE RECOVERY SYSTEM

FEE SCHEDULE

YEAR	PER CAPITA	TIPPING FEE	CARLINE	
			CARS	PICKUPS
2002/03	\$11.75	\$52.75/TON	\$8.00	\$22.00
2003/04	\$10.50	\$52.75/TON	\$8.00	\$22.00
2004/05	\$10.50	\$52.75/TON	\$8.00	\$22.00
2005/06	\$10.50	\$52.75/TON	\$8.00	\$22.00
2006/07	\$10.50	\$52.75/TON	\$8.00	\$22.00
2007/08	\$10.50	\$52.75/TON	\$8.00	\$22.00
2008/09	\$10.50	\$52.75/TON	\$8.00	\$22.00
2009/10	\$10.50	\$52.75/TON	\$8.00	\$22.00
2010/11	\$10.50	\$52.75/TON	\$8.00	\$22.00
2011/12	\$9.10	\$52.75/TON	\$8.00	\$22.00
2012/13	\$9.10	\$52.75/TON	\$8.00	\$22.00
2013/14	\$9.10	\$52.75/TON	\$8.00	\$22.00
2014/15	\$9.10	\$52.75/TON	\$8.00	\$22.00
2015/16	\$9.10	\$52.75/TON	\$8.00	\$22.00
2016/17	\$9.10	\$52.75/TON	\$8.00	\$22.00
2017/18	\$9.10 / \$10.50	\$55.00/TON	\$10.00	\$25.00
Proposed 2018/19	\$10.50	\$55.00/TON	\$10.00	\$25.00