

ARNOLD O. CHANTLAND RESOURCE RECOVERY SYSTEM 2016 Annual Report



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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 15, 2017

Dear Resource Recovery System Members:

A calendar year report is prepared annually for the Resource Recovery System. 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 2016 Resource Recovery Annual Report shows that 52,210 tons of Municipal Solid Waste (MSW) was generated within the system during 2016. Approximately 43,257 of the total tons received at the plant were processed to create 24,135 tons of Refuse Derived Fuel (RDF). Also, 1947 tons of metal and 159 tons of glass were recovered for recycling. Over 12 tons of Household Hazardous Material was diverted from the landfill.

Revenues from all sources totaled \$3,818,109 and total expenses were \$4,086,378. This resulted in net reduction of \$268,269 to the Resource Recovery fund balance for 2016. This reduction is the result of the transition from coal to natural gas and other major capital improvements made at the Power Plant during 2015, necessitating that MSW be taken directly to Boone County landfill during those improvements.

Also, the revenues from recovered metals have 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 pricing globally in 2016 and projected for 2017. This has led to a loss in revenue of nearly \$200,000 per year, as compared to the 2014/15 budget. **Due to this reduction in revenue, the tipping fee will be increased from \$52.75 to \$55.00 beginning in FY 2017/18.** Tipping fees for municipal solid waste have been \$52.75/ton since 2002, while the statewide average for tipping fees has increased over \$17.00/ton during this same period of time. **The car line rates will be \$10 for cars/passenger vans and \$25 for pickups/trailers.**

From 2004 to 2010, the per capita fee was \$10.50, and prior to that it was \$11.75. In 2011, the tipping fee was lowered from \$10.50 to \$9.10. **Beginning in calendar year 2018, the per capita fee will return to \$10.50.** As this payment is made in arrears, the fee will not be billed until May 2019 and November 2019 (the per capita charges are based on the certified 2010 census). **Billings in 2017 and 2018 will still be based on a per capita of \$9.10.**

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,

A handwritten signature in blue ink that reads 'John C. Joiner'.

John C. Joiner, P.E.
Public Works Director
(515) 239-5160 *main*
(515) 239-5404 *fax*

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, Zearing, 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 Electric Utility. Ferrous and non-ferrous metals are also separated and sold on the scrap market for recycling. The remaining material has been contract-hauled to the Boone County Landfill since July 1992 (the City of Ames closed its landfill on June 20, 1992). Plant maintenance is generally conducted during an annual two-week downtime to perform major 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 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**
- ✓ Continue to accept any fluorescent or incandescent light bulbs for proper disposal
- ✓ Continue researching possible bio-energy connections with the Power Plant
- ✓ Maintain the Household Hazardous Materials (HHM) program, including sharps drop-off
- ✓ Provide used American flag collection for proper disposal
- ✓ Provide refuse derived fuel to the Power Plant as an alternative fuel source to natural gas
- ✓ Continue to provide proper recycling for waste oil, 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
- ✓ Maximize recycle/re-use of municipal solid waste

	2015/16 Actual	2016/17 Adopted	2016/17 Adjusted	2017/18 Mgr Rec	% Change From Adopted
Expenditures:					
Personal Services	1,311,347	1,460,213	1,408,533	1,484,740	1.7%
Contractual	1,810,708	2,109,761	2,082,470	2,143,609	1.6%
Commodities	273,650	345,655	362,155	362,637	4.9%
Capital	32,317	-	-	-	
Other	-	-	-	-	
	3,428,022	3,915,629	3,853,158	3,990,986	1.9%
<i>Plus: Expenditures allocated from another program/activity:</i>					
Public Works Administration	86,035	120,126	110,656	124,070	3.3%
Total Expenditures	3,514,057	4,035,755	3,963,814	4,115,056	2.0%
Funding Sources:					
Resource Recovery Fund	3,514,057	4,035,755	3,963,814	4,115,056	2.0%
Total Funding Sources	3,514,057	4,035,755	3,963,814	4,115,056	2.0%
Personnel - Authorized FTE	15.00	15.00	15.00	15.00	

RESOURCE RECOVERY

Highlights:

The revenues that have been received for recovered metals have 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 pricing globally in 2016 and projected for 2017. This has led to a loss in revenue of nearly \$200,000 per year, as compared to the 2014/15 budget. Due to this reduction in revenue, a change to the tipping fee is requested in FY 2017/18. Tipping fees for municipal solid waste have been \$52.75/ton since 2002. Since 2004, the statewide average for tipping fees has increased by \$17.00/ton. A new tipping fee rate of \$55.00 is proposed in FY 2017/18.

The county produced 3,410 tons less material (7%) in FY 2015/16 than the previous year, an indication that residents are recycling and producing less waste. However, as a direct result of the power plant's conversion to natural gas, 10,422 tons were sent directly to the Boone County Landfill for disposal due to power plant downtime during the conversion. The drop in tonnage processed resulted in decreased revenues, not only from commercial customers, but also loss in sales of metal and RDF.

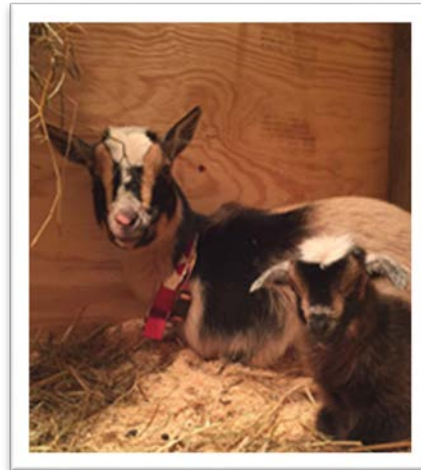
Resource Recovery secured a Solid Waste Alternatives Program (SWAP) grant from the Department of Natural Resources for "Waste Diversion and Public Opinion Study". A waste sort was performed in June 2016, and a consultant will be contracted in early 2017 to help develop and implement a two-part study, leading to enhanced waste diversion, increased efficiency of the Resource Recovery System, and increased awareness and understanding of citizen value and interest in additional waste management related services.



RESOURCE RECOVERY

Highlights, continued:

The John Deere Hybrid loader was put in service September 2015, with the expectation of reduced carbon footprint and improved tire usage. Service records on this equipment show a reduction in fuel usage of over 3,000 hours, while increasing horsepower by 23%. Tire wear has been more even and reduced the frequency of needed tire rotation, saving 20 man hours per year.



Refuse Derived Fuel (RDF) is being sold to the Power Plant based on the equivalent value of coal. With the conversion of the City of Ames Power Plant to natural gas being completed in 2016, staff is evaluating new methods of charging for the RDF which are reflective of the new system.

After Halloween, Resource Recovery partnered with a local farmer for the disposal of an estimated 100,000 pumpkins to remove the undesirable material from the waste stream. This was a successful and cost saving partnership.

Measures were taken to improve RDF quality and Btu value. Undesirable loads from grocery stores (high in moisture and organics) are now diverted directly to the Boone County Landfill to prevent contamination of waste material with liquids, rendering much of it unusable. The result is actually less material to the landfill as a whole, and the RDF for the power plant is of better quality and higher Btu value.

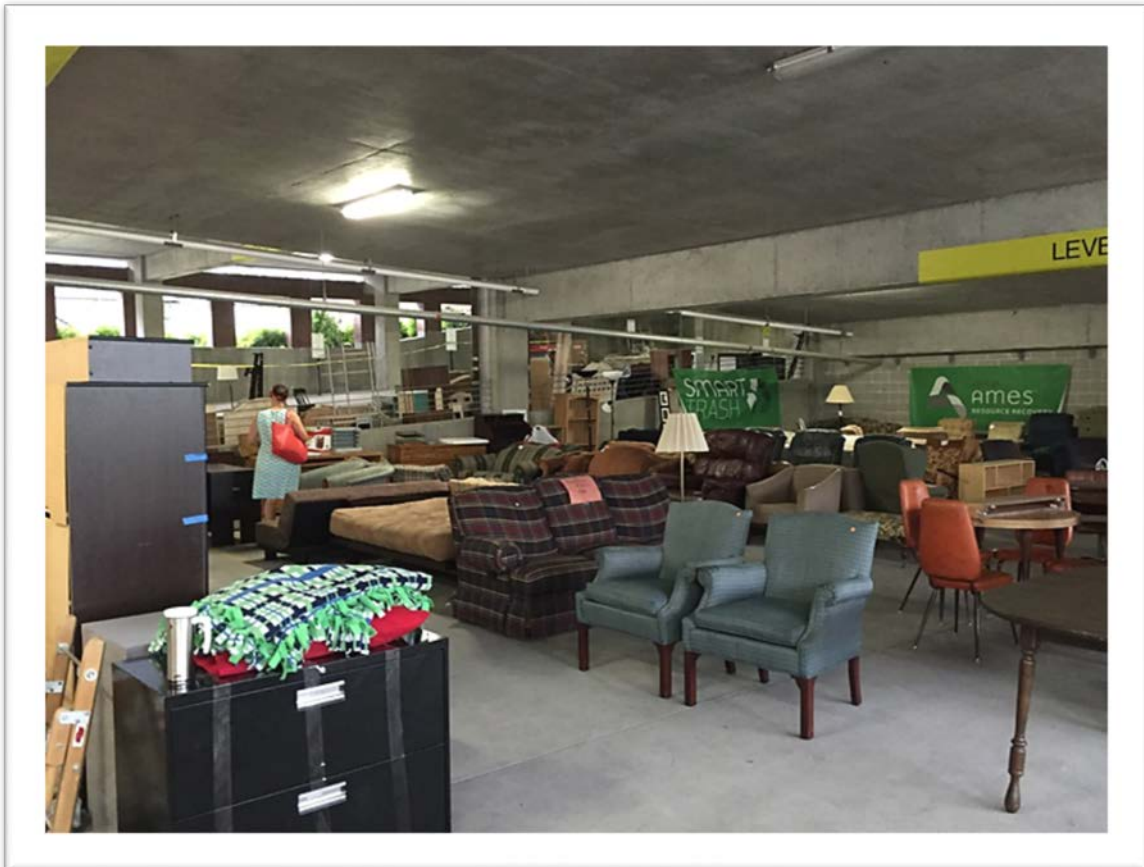
The replacement of the control room, break room, locker room, and office area HVAC system was completed in May. This new system replaced all components, some of which were original to the building in 1975.

RESOURCE RECOVERY

Highlights, continued:

The City of Ames, in partnership with the ISU Office of Sustainability, hosted “Rummage RAMPage,” a new 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 (about \$5,000) 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 44,645 pounds of material (furniture and other household goods) were diverted from landfilling, and only 310 pounds were not able to be reused or recycled.

**RUMMAGE
RAMPAGE
2016** **RUMMAGE
RAMPAGE
2016** **RUMMAGE
RAMPAGE
2016**



RESOURCE RECOVERY

Highlights, continued:

The first floor break room and storage area were remodeled by staff. New flooring was installed, providing a cleaner, updated look. The new break area is large enough to enable training sessions/tours to be held on the first floor if desired. A new sign was put in place, tying this facility with the rest of the City's properties. New LED lighting was also installed over the sign on the south wall. These changes make RRP more visible!

Service Accomplishments:	2014/15 Actual	2015/16 Actual	2016/17 Adjusted	2017/18 Projected
Tons of refuse available	55,592	52,182	55,000	55,000
Tons of refuse diverted to Boone landfill	5,557	10,422	5,000	5,000
Tons of refuse processed	50,035	41,646	50,000	50,000
Tons of RDF to Electric Utility	28,425	23,483	28,000	28,000
Tons of glass recycled	173	180	180	180
Tons of metal recycled	2,270	1,182	2,300	2,300
Pounds of HHM* collected	21,235	24,132	25,000	25,000
ISU tons into plant	4,065	3,809	3,750	3,750
Average # of vehicles/free yard waste day	1,168	484	897	1,000
Efficiency and Effectiveness:				
% of available materials processed	90%	80%	85%	85%
Tons processed/operation hour	22.00	22.80	22.00	22.00
Processing costs/processed tons (including ISU)	\$72.52	\$78.92	\$74.44	\$77.78
Reject disposal rate/ton (Boone County)	\$45.50	\$46.50	\$47.50	\$47.50
% of processed materials that are sent to the landfill as rejects	35%	38%	35%	35%
Reject transportation rate/ton	\$14.19	\$13.30	\$15.00	\$17.00
Average cost/user free yard waste day	\$4.11	\$5.36	\$4.76	\$5.43

CITY OF AMES, IOWA
RESOURCE RECOVERY SYSTEM
ANNUAL BILLING

Participating Communities
Calendar Year 2016

REVENUES:

Per Capita	717,216.50
Refuse Derived Fuel-Electric	681,049.00
Sale of Metals	67,587.54
Public Fees	65,814.48
Regular Customers	2,002,888.95
Reimbursements and Refunds	3,042.48
Other Governmental Agencies	6,520.30
Out of County Revenue	2,701.16
ScrapTires	4,791.25
I.S.U. Solid Waste Share	237,816.20
Interest Revenue	26,786.81
Sale of Glass	118.05
Damage Claims	1,776.75

\$3,818,109.47

EXPENSES:

Operations	3,923,690.37
Debt Service	162,687.50

4,086,377.87

Net	
Income/Expense	(\$268,268.40)

**MATERIALS, REVENUES & EXPENSES
RESOURCE RECOVERY SYSTEM**

Year	Total Refuse	Refuse Processed	% of Total Processed	Metals (Tons)	Glass (Tons)	RDF (Tons)	RDF (% of Processed)	Total Diverted	Revenue	Expense
	(Tons)	(Tons)						%		
1997	45,435	42,644	94%	1,464	0	27,746	65%	68%	\$3,081,928	\$3,163,332
1998	48,643	47,690	98%	1,903	0	31,138	65%	69%	\$3,373,503	\$3,183,602
1999	49,164	46,370	94%	1,654	0	30,434	66%	69%	\$3,161,495	\$3,220,240
2000	48,896	44,397	91%	1,401	0	28,095	63%	66%	\$3,097,282	\$3,313,053
2001	50,093	44,955	90%	1,104	0	30,435	68%	70%	\$3,353,739	\$3,281,503
2002	50,267	48,717	97%	1,258	0	35,147	72%	75%	\$3,731,348	\$3,110,513
2003	51,906	47,136	91%	1,678	0	33,146	70%	74%	\$3,803,639	\$3,527,346
2004	53,788	51,026	95%	2,332	0	34,334	67%	72%	\$4,017,107	\$3,462,794
2005	54,493	53,468	98%	2,250	0	32,621	61%	65%	\$4,285,110	\$3,716,566
*2006	55,500	50,989	92%	2,229	54	30,180	59%	64%	\$4,250,337	\$4,449,985
2007	57,333	52,820	92%	2,102	96	34,182	65%	69%	\$4,392,686	\$4,531,663
2008	57,470	52,716	92%	2,068	115	36,060	68%	73%	\$4,632,493	\$3,725,904
2009	53,395	46,647	87%	1,987	130	31,040	67%	71%	\$3,956,279	\$5,507,045
2010	58,756	57,494	98%	2,347	129	37,865	66%	70%	\$4,937,018	\$4,605,121
2011	55,270	50,611	92%	2,166	150	34,422	68%	73%	\$4,697,573	\$3,729,248
2012	53,106	49,381	93%	2,177	145	32,329	65%	70%	\$4,641,704	\$4,089,447
2013	54,159	44,093	81%	1,873	171	28,262	64%	69%	\$4,062,010	\$4,196,226
2014	55,698	47,494	85%	2,104	173	29,595	62%	67%	\$4,501,455	\$4,555,974
**2015	54,394	47,753	88%	2,201	177	25,194	53%	58%	\$4,205,529	\$4,342,664
2016	52,210	43,257	83%	1,947	159	24,135	56%	61%	\$3,818,109	\$4,086,378
20-YR TOTAL	1,088,460	998,110	92%	39,080	1,499	645,235	65%	70%	\$82,237,416	\$80,426,812

CITY OF AMES, IOWA

POPULATION – PERCENTAGE – CHARGES

Annual Billing - Calendar 2016

Per Capita - \$9.10

	<u>POPULATION</u>	¹	<u>PERCENT OF POPULATION</u>	<u>TOTAL</u>
Ames	49,765	²	63.14%	\$452,861.50
Story County	8,706		11.05%	\$79,224.60
Nevada	6,798		8.63%	\$61,861.80
Story City	3,431		4.35%	\$31,222.10
Huxley	3,317		4.21%	\$30,184.70
Slater	1,489		1.89%	\$13,549.90
Roland	1,284		1.63%	\$11,684.40
Gilbert	1,082		1.37%	\$9,846.20
Maxwell	920		1.17%	\$8,372.00
Cambridge	827		1.05%	\$7,525.70
Zearing	554		0.70%	\$5,041.40
McCallsburg	333		0.42%	\$3,030.30
Kelley	309		0.39%	\$2,811.90
TOTALS	78,815		100.00%	717,216.50

¹ Based on 2010 U.S. Census

² 58,965 minus I.S.U. 9,200

CITY OF AMES, IOWA
RESOURCE RECOVERY PLANT VOLUMES
12/31/2016

CLASS	2016 TRIPS	2016 WEIGHT	PERCENT OF TOTAL WEIGHT
Non-Scale Refuse (Car line)	4,897	1,143	2.3%
Commercial Haulers	8,249	37,472	77.4%
Private Industry/Contractors	516	482	0.6%
City of Ames	39	45	0.1%
Iowa State University	998	3,758	7.4%
Iowa Dept of Transportation	130	55	0.2%
U.S.D.A. Lab	39	87	0.4%
Directly to Boone	1,922	9,168	11.6%
TOTALS	16,790	52,210	100.0%

**CITY OF AMES, IOWA
RESOURCE RECOVERY SYSTEM
FEE SCHEDULE**

<i>YEAR</i>	<i>PER CAPITA</i>	<i>TIPPING FEE</i>	<i>CARLINE (Cars)</i>	<i>CARELINE (Trucks)</i>
<i>2005/06</i>	\$10.50	\$52.75/TON	\$8.00	\$22.00
<i>2006/07</i>	\$10.50	\$52.75/TON	\$8.00	\$22.00
<i>2007/08</i>	\$10.50	\$52.75/TON	\$8.00	\$22.00
<i>2008/09</i>	\$10.50	\$52.75/TON	\$8.00	\$22.00
<i>2009/10</i>	\$10.50	\$52.75/TON	\$8.00	\$22.00
<i>2010/11</i>	\$10.50	\$52.75/TON	\$8.00	\$22.00
<i>2011/12</i>	\$9.10	\$52.75/TON	\$8.00	\$22.00
<i>2012/13</i>	\$9.10	\$52.75/TON	\$8.00	\$22.00
<i>2013/14</i>	\$9.10	\$52.75/TON	\$8.00	\$22.00
<i>2014/15</i>	\$9.10	\$52.75/TON	\$8.00	\$22.00
<i>2015/16</i>	\$9.10	\$52.75/TON	\$8.00	\$22.00
<i>2016/2017</i>	\$9.10	\$52.75/ton	\$8.00	\$22.00