



# MEMO

**To:** Mayor and City Council

**CC:** Steve Schainker, City Manager  
Donald Kom, Director of Electric Services  
William Schmitt, Resource Recovery Superintendent

**From:** John Joiner, P.E.; Director of Public Works

**Date:** March 7, 2023

**Subject:** Waste-to-Energy Statistics – Response to Bob Haug Email 2-22-23

Mayor and City Council were sent an email from Bob Haug (attached) on February 22, 2023. The email included statistics on solid waste in Story County broken out by final disposition including landfilling, recycling and incineration. The dates and source of his data were not included. Staff has prepared a narrative with the processing and diversion statistics for 2022, as shown below.

**Waste-to-Energy System Data for 2022:**

For calendar year 2022 there was 51,541 tons of MSW available to be used by the City of Ames Waste to Energy System (WTE). Of that amount, 90.5 % (46,652 tons) was received at Resource Recovery Plant (RRP) and utilized to produce RDF and metal recycling. Of the 9.5% (4,889 tons) that went directly to the Boone County Landfill (BCL) 59.5% (2,908 tons) was due to transformer issues of Unit 7, 29.6% (1,446 tons) of reduced throughput of system due to planned spring maintenance outage, and 10.9% (535 tons) of downtime of the system for emergency boiler repairs.

From the 46,652 tons of MSW processed, 3.3% (1,517 tons) of metal was recovered and recycled, 2.4% (1,135 tons) was bulky material (mattresses, couches, and other non-processable material) and removed from the MSW before processing. From the 44,000 tons of MSW that was left, 66.9% (29,417) tons was converted to RDF and used at the Electric Services Power Plant to generate electricity along with natural gas. Power Plant staff have determined approximately 9% of the incinerated material remains as ash. The remainder of the unusable material was sent to the BCL, which required less space to dispose since it was ground and easily compactable.

Above and beyond the amount of MSW recycled and used for RDF, RRP also collected and recycled 256 tons of glass, collected and had composted 51 tons of organics, collected and had recycled 720 appliances (approx. 100 tons), collected and had recycled 943 tires (approx. 21 tons), collected and removed from the waste stream 20 tons of household hazardous waste, organized and directed the collection and diversion of 72 tons of material from the landfill at the Rummage Rampage event, and coordinated and supervised the collection of 549 tons of yard waste. The total of these additional diverted and recycled items is 1069 tons.

**Staff Comments:**

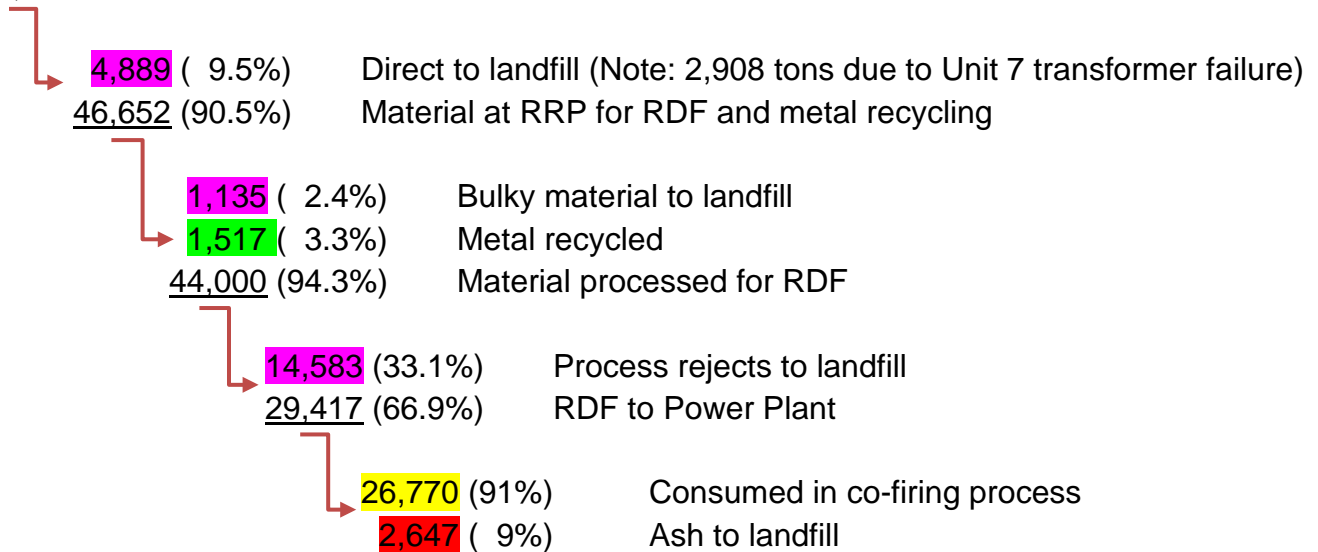
As you know, significant improvements were made to the power plant infrastructure over the last few years. During this time, normal processing of solid waste could not occur at Resource Recovery and an increased amount of waste was disposed at the Boone County Landfill. Following these power plant improvements, a return to more typical waste processing operations was seen in 2022.

Therefore, gleaning data from any of the previous years when there was considerable power plant downtime or significant improvements being made to the boilers is not an accurate representation of current or future operating efficiencies. Using the data from 2022, a flow chart (attached) was created showing tonnage of waste at each stage as it is processed through the system. The figures in the flow chart are color coded to correspond with the table that summarizes system material for each type of final disposition according to tonnage and percentage breakdown. The table also compares the percentages cited in Mr. Haug's email.

Mr. Haug asserts in the email that "Boone County wants to stop accepting Story County's waste". A cooperative waste disposal agreement was just approved by the City of Ames and Boone County in June 2022 and is in effect until June 30, 2025. In discussions with Boone County leading up to the agreement, they expressed concern with the increased tonnage being landfilled during the power plant downtime and improvement. They expressed a desire that the improvements would demonstrate a much improved efficiency of waste processing and greatly reduced amount of waste being landfilled. Also, Mr. Haug mentions that the Metro Waste Authority is 44 miles from the Resource Recovery Plant. As a point of comparison, Boone County Landfill is 18 miles from Resource Recovery; 52 miles less per round trip.

## Flow of Solid Waste in the Resource Recovery System - 2022

51,541 tons MSW Available



Additional diverted and recycled items is 1069 tons.

## Summary of Overall Disposition of Material in the Resource Recovery System

	Tonnage	Share	Haug Email
RDF Consumed in Co-firing	26,770	51%	32%
Recycled and Diverted Items	2,586	5%	3%
Solid Waste Landfilled	20,607	39%	51%
Boiler Ash Landfilled	2,647	5%	14%
<b>TOTAL</b>	52,610	100%	100%