



ZERO WASTE: CREATING A 10-YEAR STRATEGY FOR HASTINGS

May, 2015

WasteCap Nebraska is pleased to work with the City of Hastings on our Zero Waste Community Education and Planning project funded by the Nebraska Environmental Trust. As part of this grant we are utilizing the Zero Waste Community Planning Guide and Ten Year Strategy created by Eco-Cycle, in Boulder, Colorado (2012).

This report has been prepared for the Hastings City Council as an overview of Hastings' solid waste materials and management systems along with recommendations for actions the City can take to significantly reduce its waste stream and increase its resource recovery systems. Much of the data used in this report is derived from an October 2014 Solid Waste Stream Study of Hastings' residential and commercial waste provided through our Zero Waste grant project [1].

While Hastings has made great strides in recycling over the last 20 years, the Study found that:

Nearly 85% of the waste at the Hastings Landfill could be recycled or composted. Of that, more than 38% could be easily recovered with existing programs and infrastructure.

With the limited capacity of the Hastings landfill and the significant economic and environmental benefits of recycling, it's time for Hastings to revisit its commitment to resource recovery.

The Hastings Landfill

The Hastings Subtitle D landfill was established in 1996 and sits on 150 acres. It is restricted from further development to the North by the clearance requirements of the airport runway. The most recent cell is projected to be filled to ground level in 7 years (2022), at which point the landfill be allowed to rise to 100 feet before it is closed.

At current disposal rates closing is projected to occur in 18 years, in 2034. Once closed, monitoring will be required for 30 years to meet EPA and NDEQ requirements.

The landfill serves 55,736 people over Adams, Clay, Nuckolls, Webster, Franklin, and Kearney Counties, with Hastings comprising 45% of the population. In 2014 the landfill received 48,508 tons of materials from its waste shed. We don't know how many tons the city of Hastings is sending to the landfill, so per capita figures reflect the 6 county area.

Each person in the 6 county area is sending about 4.8 pounds of waste to the Hastings landfill every day. This is lower than the statewide rate of 7 lbs. per person per day, but higher than the national average of 2.9 lbs., and the Imperial, NE average of 2 lbs. per person per day.

There are substantial opportunities for Hastings to easily recover additional recyclable materials and maximize the efficiency of its existing infrastructure and programs, and many great reasons to do it.

Increasing recycling and composting in Hastings can:

- *Extend the remaining life of the landfill*
 - *Reduce future landfill costs and planning*
 - *Reduce pollution risks and costs at the landfill*
 - *Reduce greenhouse gas emissions*
 - *Engage the community and support the value they place on recycling*
 - *Strengthen the view that the City of Hastings is an attractive and progressive place for young professionals to live*
 - *Create a model recycling program for the region*
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Recycling Today

Woodward's Disposal has free curbside recycling available for residential customers. A 96 gallon tote or 16 gallon open bin are available for a \$10 deposit. They accept paper, paperboard, cardboard, metal cans and plastic containers #1-7. They also operate a yard waste composting facility.

In 1993, Adams County had a recycling rate of 9.3% including yard waste, or 7.6% without yard waste [2]. We assume that this number is higher today because of the introduction of curbside collection since then, but we cannot confirm this, since we do not have access to recycling data.

Hastings seems to be doing very well in recycling cardboard in the commercial sector. The Waste Sort found only 2.2% cardboard in the commercial waste stream while the state commercial average is 14.8%. This shows that the current business cardboard recycling efforts are very successful.

Opportunities for Landfill Diversion

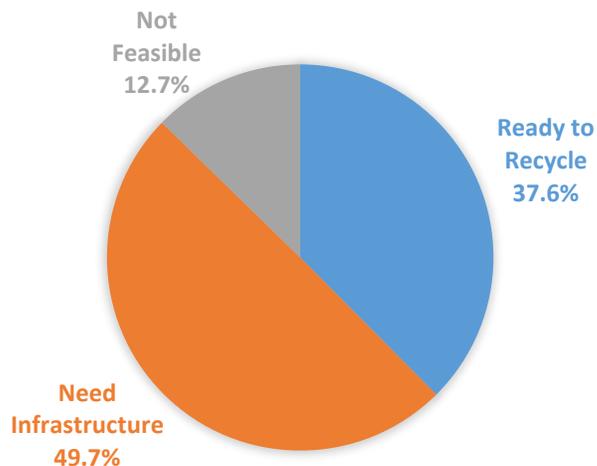
According to the Solid Waste Stream Study **Hastings could divert about 85% of the materials going to the landfill** by both weight and volume, depending on which materials are targeted [1].

Woodward's already has the ability to divert **traditional recyclables** that take up about 38% of the volume of the landfill. Another 12% of the volume is taken up by **textiles, rubber and leather** products, a significant portion of this could be recycled or reused through Goodwill or other thrift stores and charities.

Easily recyclable paper makes up 20% of landfill volume. Additional infrastructure or markets would need to be developed for the 18% volume of "**other mixed paper**" which includes milk and juice cartons, which could be sold to new markets, and paper towels, which could be composted.

Hastings can recycle about 38% of what's currently being landfilled with existing infrastructure today.

IMPROVEMENT POTENTIAL BY VOLUME



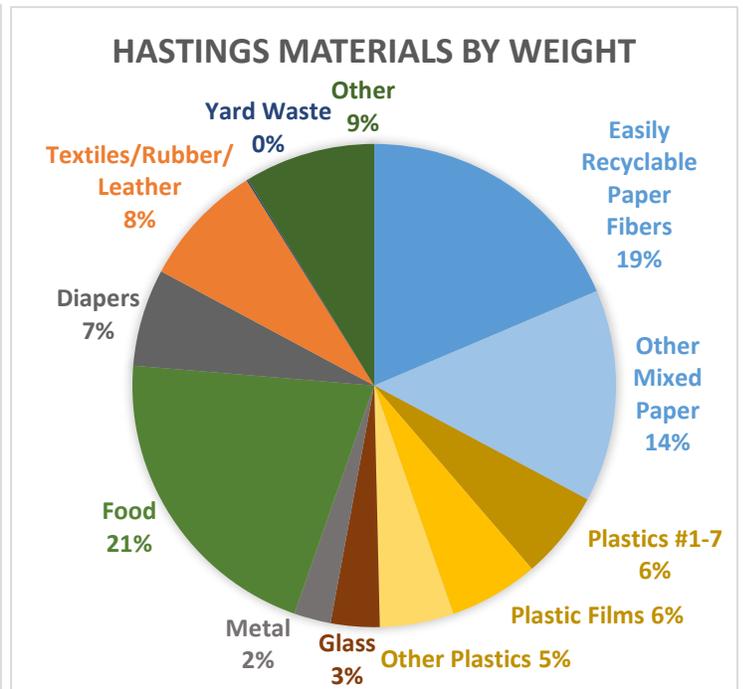
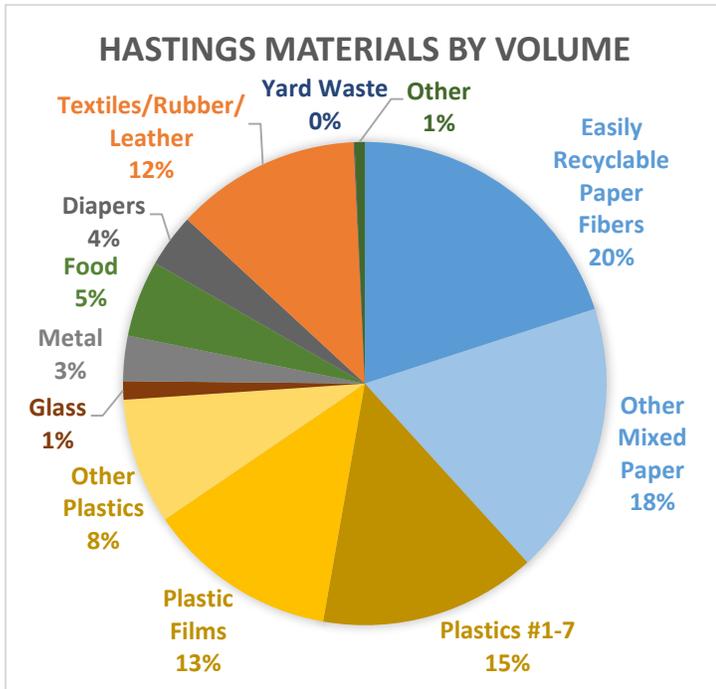
Ready to Recycle: Cardboard, newsprint, mail, office paper, paperboard, plastic containers, metals, yard waste.

Need Infrastructure: Other mixed paper, plastic films (bags), glass, textiles/rubber/leather, food.

Not Currently Feasible: Diapers and other plastics [1]

Plastics comprise 17% of the landfill tonnage from the City of Hastings but they comprise nearly 36% of its volume. **If landfill space is a primary concern then ensuring good paper and plastics recovery should be a priority.** Numbered Plastic containers are recyclable today. Plastic films (bags and shrink wrap) could be collected from retail producers through new programs.

If landfill space is a primary concern, ensuring good plastics and paper recovery should be a priority due to their large volume.



Hastings Landfill Materials by Weight and Volume. Fractions have been rounded to the nearest whole number. Weight data from 2015 Solid Waste Stream Study for Hastings [1]. Volume was calculated using weight and volume data from the 2009 State of Nebraska Waste Characterization Study. The “Other” category includes wood, construction and demolition waste, and non-distinct waste. Since there was no volume in the 2009 study for the “other” category, we estimated it using EPA weight to volume comparison for similar materials.

Food waste makes up 21% of tonnage at the landfill and there are many reasons to reduce this waste. Decomposing food in dry tomb landfills creates methane, a very potent greenhouse gas and air pollutant, whereas composting food creates a product that is good for the soil and helps conserve water. Priority should be given first to redistributing food to those in need or repurposing food for animal feed.

Hastings has **yard waste composting** through Woodward’s and wood chipping facilities at the landfill. With additional investments in training, equipment, collection systems, and education, food waste could also be composted. Many cities around the country are expanding waste collection to include food waste for composting. Central Community College’s Grand Island campus has started a food waste composting pilot.

The study found a substantial number of **large and bulky items** that cannot be included in a waste sort because they would skew the percentages of other materials. Although we can’t quantify the space these items are taking in the landfill, we’ve been informed that they do not compact well, take up a lot of landfill space, and are difficult for landfill workers to manage. We believe that with some planning, many of these materials could be resold or recycled through thrifts and charities, scrapyards or other statewide or national programs. The items include automobile body parts, mattresses, furniture, plastic bins, wooden pallets, electronics, books, toys and small appliances; as well as lumber, carpet, drywall and other construction materials.



Policies & Programs That Work

Hastings should prioritize the following actions to improve waste reduction. These recommendations are based on proven strategies working well in communities throughout Nebraska and the Midwest.

You Can't Manage What You Don't

Measure. There are currently no requirements of haulers or recyclers to report on Hastings' trash and recycling. There is no baseline to measure the success of existing or new programs. A city ordinance can require that all haulers and recyclers operating in the city report this data.

Pay-As-You-Throw (PAYT). Unit based pricing, or PAYT, for garbage service is an incentive to reduce and recycle. PAYT is the most cost effective strategy to increase diversion rates in Hastings and can be implemented in the short term. Just like other utilities, the idea is that the more you put into the landfill, the more you pay. More than 7000 communities in the U.S. have PAYT and these communities typically generate 49% less waste than communities without unit-based pricing [3]. Imperial, Nebraska has had a PAYT system for 20 years and has one of the lowest disposal rates in the state, sending **only 2 pounds per person of trash to the landfill daily**, compared to 4.77 pounds at Hastings landfill. UNL's Bureau of Sociological Research 2013 Nebraska Annual Social Indicators Survey found that, **68% of respondents agree or strongly agree that the amount of money residents pay for waste collection should be based on the amount of waste they produce** [4].

Universal and Curbside Recycling. The most important factor in increasing recycling is convenience. Universal recycling means that everywhere there is a trash can, there is also a recycling bin. Recycling is available downtown, at parks, in commercial and government buildings and at home. It's important that curbside recycling bins are large and not small open bins. There are funding programs that help cities move from bins to carts.

Landfill Bans. Banning materials saves space at the landfill and also stimulates new recycling and composting businesses and markets, which can create new local industries and jobs, strengthening the local economy. Currently there are bans for yard waste, wood, paint, household hazardous waste and appliances. Bans that other communities have enacted include: electronics, fluorescent tubes, cardboard, mattresses, recyclable materials, and food, among others.

Business Recycling. Business waste comprises nearly half the garbage going to landfills, so finding ways to support their efforts is important. Providing waste assessments, technical assistance and financial incentives for businesses can be effective first steps. The city can evaluate its options to contract for business recycling services to provide every business with convenient, cost-effective recycling pickup. Some communities have recently started to require businesses to recycle to maximize their existing landfill capacity.

Keep the Community Engaged. National studies show people overwhelmingly support recycling but are often confused by what and how to recycle. There is consensus among recycling advocates that it takes \$1 per person annually to ensure that people know what and how to recycle within an ongoing program and \$3-4 annually when making changes.

Committing to Zero Waste. Adopting a resolution that sets Zero Waste as a planning principle will provide a framework for planning and funding. Dedicated staff are also needed to manage waste and sustainability efforts. They initiate, deliver and monitor new programs, measure progress and educate the community.

References

- [1] Engineering Solutions & Design Inc., "Solid Waste Stream Study for Hastings, Nebraska," 2015.
- [2] City of Hastings Engineering and Inspection Department, "City of Hastings/Adams County Integrated Solid Waste Management Plan", 1994.
- [3] US. EPA, "Pay-As-You-Throw 2010 Summer Bulletin," Summer 2010. [Online]. Available: <http://www.epa.gov/osw/conserve/tools/payt/tools/bulletin/summer10.pdf>.
- [4] Nebraska Annual Social Indicators Survey (NASIS) Recycling and Product Stewardship Question Response Analysis