



Discussion Paper: Coping with Depressed Recycling Markets

The purpose of this paper is to provide information on why prices for recyclables are depressed and to identify strategies for coping with down markets. First, let's look at why recovered commodity prices are depressed.

- There is insufficient capacity within the U.S. to utilize all of the material recovered through recycling in the U.S.
- For more than 20 years, a significant amount of recyclables have been exported to other countries because it was cheaper to ship and process them overseas.
- China banned mixed paper imports at the start of 2018 and followed with a 0.5% contaminant restriction on all imports.
- China's 30% tariff on recovered materials from the U.S. into China have made the purchase of finished pulp and plastic resins from other countries more attractive for China.
- Countries are opting to purchase recyclables outside of the U.S. due to the strong U.S. dollar.
- Slow economies in Europe, China, Mexico and other countries have reduced demand for recovered materials.
- Paper mills have reported high inventories of recovered paper on hand which has reduced their demand for material.
- The virgin pulp prices are low and many U.S. mills are opting to use virgin pulp vs. recycled content pulp.
- Industry wide, U.S. cardboard production is down 20% in 2019 from the previous year. One reason for this is that the e-Commerce business is moving towards more flexible packaging options.

As with all commodities, experts believe that market prices will rebound at some point. This might occur when domestic capacity for processing recovered materials improves. For example, according to the Pulp and Paper Index, six new containerboard recycling paper mills will add 2 million tons of capacity over the next 2 years. The first is expected to open in October in Wisconsin with a capacity of recycling 250,000 tons per year.¹ It has also been announced that four new or upgraded paper mills in Ohio, Wisconsin, and Minnesota will open in the next two years which will benefit recyclers in Nebraska.²

Until market prices bounce back, recyclers and communities must develop strategies to survive the down markets and continue to conserve resources through recycling and resource recovery programs. With continuing low prices for recycling there will be pressure to shutter recycling programs and simply landfill recyclables instead. Appendix A provides talking points that recycling advocates can use when talking with elected officials and decision makers about maintaining or expanding recycling programs in their community.

Strategies for Coping with Low Recovered Commodity Prices

Each stakeholder in the recycling process has a role to play in surviving down markets. This includes individuals, businesses, and institutions that generate recyclables; collectors and processors, as well as local and state government.

Business and residential generators of recyclables must learn to “recycle right” and properly separate recyclables from waste. When contamination of recyclables occurs, the cost to sort and process them at material recovery facilities (MRFs) increases. Cost increases are eventually passed on to the generators.

Collectors of recyclables must take a lead role in educating residents on what is acceptable and not acceptable in the recycling bins. This may require them to leave non-recyclable items in the recycling containers along with a note that informs the generator that the materials are not recyclable.

Recycling processors and material recovery facilities need to maintain loyalty to their primary end-markets, even if they can get a slightly better price somewhere else. These markets will reciprocate by taking materials when markets get tight. It is also important to consistently provide the highest quality, uncontaminated material possible to ensure its value is maintained.

Unfortunately, the recent drop in recyclable materials pricing requires recycling processors and MRFs to change their acceptance policies and standards. This may require greater quality standards from collectors and municipalities. MRFs may stop accepting certain materials for which they cannot recover the cost of handling and processing.

Most recycling processors and MRFs in Nebraska have imposed tipping fees for cardboard and single stream recyclables to help offset the cost of sorting the materials and low market prices. Some facilities have encouraged collectors and generators to separate their recyclables into two or three main categories, i.e. mixed fiber, mixed containers (plastic and metal), and cardboard, instead of a single stream system. This reduces the cost of sorting material, and may also allow the processor to share revenue with the generator for the clean, separated materials. A processor could also require generators to sort each recyclable material into separate streams.

Recycling processors might seek additional space to store recyclables until market prices increase. If storage space is not available, the processor might be forced to move material at a loss or store it outside. In some cases, the processor may resort to landfilling recyclables that have a negative value, as some mixed paper grades currently have. This is the last resort, because the landfill will charge a tipping fee. As such, the processor should investigate every option to utilize their product prior to landfilling. For example, mixed paper could be ground up and used in a spray-on hydro seeder or densified into fireplace logs.

Local governments must play an active role in providing recycling services, similar to the service they provide in waste removal and disposal as residents overwhelmingly desire access to recycling services. If a community spends \$50 per ton in landfill disposal fees to bury materials, it follows that they should be willing to pay to recycle materials.

Support for recycling programs can be provided through staff and/or financial resources. Some communities provide staff to sort and/or transport recyclables to a materials recovery facility. Local jurisdictions can also use tax funds, solid waste user fees, or a landfill disposal fee surcharge to fund local recycling efforts.

Other supportive options include organized hauling and volume-based pricing. A majority of local jurisdictions in Nebraska have open-competitive collection systems. Under this model, there may be multiple haulers serving one community. This can have the effect of two or more haulers driving down the same street to reach their customers. When a hauler only collects from a few households on any given street, the inherent inefficiency adds to collection costs, generates more greenhouse gas emissions, and hastens the need for street repairs. Taxpayers are the ultimate losers in this common scenario.

Some municipalities adopt an *organized collection system* where a city puts out an RFP for waste and recycling collection services. The hauling contract can be for the entire city or partitioned into sections where bids on waste and recycling collection services cover a particular area. This approach generally leads to more efficient collection, more services, and reduced costs for households. More information on organized collection is on the NRC website at: https://nrcne.org/wp-content/uploads/2019/01/Nebraska_Organized-collection_NRCNE.pdf

Another recycling-supportive option is the volume-based pricing system. Volume-based pricing, or pay-as-you-throw (PAYT), is a method of charging households for trash service based on the volume of waste they throw away. Currently, most Nebraska residents pay a flat fee for trash service, regardless of whether a household puts out five cans of trash per week or only one.

PAYT creates a fairer, more equitable pricing system that provides a financial incentive for residents to recycle more and spend less on trash collection services. It's the same way residents are charged for other utilities, such as electricity, gas and water—based on how much they use. More information on volume based pricing is available at the NRC website at: https://nrcne.org/wp-content/uploads/2019/02/Nebraska_PAYT_NRCNE.pdf

State government has an important role in helping recycling processors, material recovery facilities, and local communities cope with down markets. Landfill tipping fees can be raised in proportion to the cost of recycling to provide a better incentive to recycle. The revenue generated from higher fees could be used to support recycling. The State of Nebraska has excellent grant programs to assist in educating the public on proper separation of recyclables and for buying equipment to make the separation of recyclables more cost-efficient. Maintaining funding for these grant programs is essential, particularly for rural areas, where recycling is inherently challenging even under healthy market conditions.

Local and Regional Coping Strategies in Action

Materials Recovery Facilities (MRFs) and Local Processors

Firstar Fiber, a large MRF in Omaha, began assessing a tipping fee in 2018 for single stream recyclables and corrugated cardboard received at their facility. They have also encouraged communities that deliver recyclables to their facility to consider instituting “dual stream” recycling. This entails co-mingling cans, bottles, and plastic containers in one stream, and paper fiber (newspaper, office paper, magazines, bulk mail, etc. in another. A third stream of cardboard is beneficial if a significant quantity is generated.

In an effort to expand the amount of material diverted from landfill disposal Firstar Fiber has started the Hefty® EnergyBag® program. It collects hard to recycle plastics – like the candy wrappers, juice pouches, and potato chip bags. The material is converted through pyrolysis into diesel fuel. For more information on these programs, contact Danielle Easdale, d.easdale@firstarfiber.com; 402-894-0403.

Green Quest Recycling, a large MRF in Lincoln, has instituted tipping fees for single stream recyclables and corrugated cardboard. They are capable of processing materials from all types of collection models. For more information contact Kelley McReynolds, kelleym@greenquestrecycling.com; 402-476-8502.

Recycling Enterprises of Nebraska, a MRF in Lincoln, provides recycling collection services in select communities in Southeast Nebraska for single stream and source-separated recyclables. They provide containers and empty them on a regular basis. They assess a per-trip fee to the community for servicing the containers and transporting the material for sorting at their facility in Lincoln. For more information contact Chris Zegar, recycle_lincoln@msn.com; 402-421-6655.

Western Resources Group (WRG) in Ogallala is an example of a recycling hub and spoke arrangement with surrounding communities. They provide recycling trailers for spoke communities, service the containers for a mileage fee, then bale the source-separated materials. Their market for bales allows them to combine #1 - #7 plastics under the Hefty® EnergyBag® collection program. This has cut down on their labor costs and enhanced their level of service to communities.

WRG also ships recyclables in a “combo-load” in a semi-trailer. A typical load contains a few bales of cardboard, a few bales of cans, plastic bales, office paper, newspaper, and mixed paper bales. Some bales generate revenue, while others are cost centers. By mixing the types of recyclables on a semi-load they generally receive some revenue and are able to cover the cost of transportation. For more information contact Aaron Withington at newrglogistics@gmail.com; 308-289-0140.

The **Laurel Regional Recycling Center (LRRC)** provides secure document shredding services and traditional recycling collection services to 7 communities in northeast Nebraska. They provide recycling trailers in 3 communities and custom-made, 7 cubic-yard indoor containers to the communities of Verdigre, Plainview, Laurel and Crieghton for source-separated recyclables. These communities provide buildings for the carts. LRRC sends a semi-trailer to pick-up full carts of recyclables and replaces them with empty carts at the same time for efficiency. The three remaining communities have recycling trailers which is services by LRRC on a regular basis.

There has been no collection fee assessed to the spoke communities because LRRC has been able to cover their operational costs through the sale of high-quality recyclables. They ship recyclables directly to mills and mix different materials per load. For example, lower grades of paper are shipped with high grade office paper to the same mill. Plastics loads contain baled #1 and #2 plastics as well as mixed #3 thru #7 plastics. Long-term relationships with end markets and high-quality, baled materials are what makes it possible to move all the material they collect and process. The Hub and Spoke collection system developed in Laurel has provided a stable market for recyclables in northeast Nebraska. For more information, contact Lathan Asbra at lk_asbra@yahoo.com; 402-375-9111.

NK Waste and Recycling in Valentine is a private firm that collects solid waste and operates a recycling drop-off center. They charge a flat monthly fee for solid waste collection. Households that bring recyclables to the recycling drop-off center receive a \$10 credit on their monthly solid waste collection bill. By offering the recycling drop-off center, the company avoids paying a landfill disposal fee of \$59/ton at the regional landfill. Material collected at the center must be source-separated so they can provide high-quality bales to their end-markets.

NK is currently storing recyclables and may consider reducing or eliminating the monthly recycling credit should the depressed markets continue for an extended period of time. They also collect glass bottles that are shipped directly to Ripple Glass in Kansas City, MO. For more information, contact Karen Phillips, nkwaste@gmail.com; 402-376-2296.

Local Jurisdictions

The **City of Kearney** provides curbside recycling to households as well as cardboard collection for business. Each household is charged for residential waste and recycling collection services that covers the City’s cost to collect, sort and market recyclables. An additional fee is charged for commercial collection of cardboard that covers the cost of collecting and processing. They are able to move the recyclables to markets because they have nurtured long-term relationships with paper mills and end-markets and have kept contamination

to a minimum. They also receive a floor price for their materials from their markets. For more information contact Steve Hart, Sanitation Division, City of Kearney at shart@kearneygov.org; 308-233-3206.

Custer County Commissioners recognize the value of providing recycling services to residents and provide funding for the **Custer County Recycling Center** (CCRC) from general revenues. Last year, the County's program budget was \$174,890, supporting recycling of 519 tons of material. Drop-off trailers are serviced by CCRC in nine communities in the County. Another eight communities in six nearby counties deliver material to the Recycling Center and pay a tipping fee for this service. Kelly Flynn operates the Custer County Recycling Center and can be contacted at flynnclanbb@hotmail.com; 308-870-0313.

The **City of Neligh** has a Pay As You Throw (PAYT) waste collection program. The City provides curbside waste and recycling services as well as a transfer station/drop-off recycling center. The fees levied for waste and recycling collection, coupled with the tipping fee at the transfer station, cover the cost of their solid waste collection system. Due to the small size of their recycling center, they are unable to bale recyclables. Instead, they store loose recyclables, sorted by type, in semi-trailers until sufficient quantities are collected for shipping. The city started a glass recycling program to divert more tons and reduce landfill costs. The City installed collection bunkers to collect and store glass bottles and jars. This material is shipped to Ripple Glass in Kansas City, Missouri. For more information, contact Dana Klabenes at dana@neligh.org; 402-887-4066.

For more information, see "The State of Recycling in Nebraska 2019" at nrcne.org/resources/publications/

References

¹Fastmarkets RIS, www.risiinfo.com "First starts of 2 million tons of recycled containerboard capacity set to go in 6 months, may challenge KLB, OCC". April 5, 2019

²Northeast Recycling Council. "Domestic Recycled Paper Capacity Increases - Updated." August 20, 2019.

<https://nerc.org/documents/Summary%20of%20Announced%20Increased%20Capacity%20to%20Use%20Recycled%20Paper%20%E2%80%93%20Updated%20August%202019.pdf>

Additional Resources

- **Waste Reduction Model (WARM)** New and updated information requires updates to the energy and emission factors used in the Waste Reduction Model (WARM) and the inclusion of economic factors. The purpose of this webpage is to explain the changes incorporated into each version. <https://www.epa.gov/warm/versions-waste-reduction-model-warm>
- **Municipal Measurement Program** This program assessment and planning tool delivers insights and actionable recommendations to municipal waste management agencies. <https://recyclesearch.com/profile/mmp>

Articles

- This blog post from the Northeast Recycling Council (NERC) pulls together a number of resources and provides information about numerous initiatives aimed at making recycling work. <https://nerc.org/news-and-updates/blog/nerc-blog/2019/07/16/from-bin-to-market-fixing-the-recycling-system>
- [From Bin to Market: Fixing the Recycling System](#) July 2019
- [Upgrading Your MRF](#) July 2019 In this Waste Advantage Magazine article, Jeff Eriks outlines factors to consider when determining if your MRF requires an upgrade. Eriks is a Vice President of Business Development and Marketing at Cambridge Companies (Griffith, IN), a design-build firm, working with the waste industry.
- [Putting it All in Perspective](#) June 2019 Resource Recycling takes a look at the state of recycling markets and the role programs and business can play in a new recycling model.

Appendix A - Talking Points for Continuation of Recycling Programs

Talking points for community recycling advocates:

- There is a cost to disposing of society's waste. You either pay to have it landfilled and lose forever or pay to have it recycled and made into new recycled-content products. This conserves resources, creates jobs, reduces greenhouse gas emissions and generates revenue for the community.
- Processing recyclables into new products supports ten or more jobs for every one needed to dispose of waste in the landfill. Cutting recycling programs eliminates more than just collection jobs. The repercussions of scaling back or discontinuing recycling programs will have a lasting effect on the local economy.
- The recycling industry is the first link in the manufacturing supply chain and plays a prominent role as a job creator, economic leader and environmental steward. According to the Institute for Scrap Recycling Industries (ISRI) the recycling industry in Nebraska contributed over \$600 million in economic impact in 2017. In the same year, 2,972 full-time jobs were supported, and nearly \$53 million in federal, state and local taxes were collected. Many people think of recycling as a "green" activity but these economic facts and figures illustrate how recycling is a business like any other.
- Once a recyclable item leaves your curbside bin or drop-off site, it becomes a commodity. Just like soybeans and wheat, it has a tradeable market value. If the value of wheat drops, no one suggests never buying a loaf of bread again. Why should we do that with recycling? Like many other commodities, recycling is a cyclical industry; markets rise, fall and rise again.
- Unlike sewer, road maintenance or other municipal services, recycling collections only function properly with the active participation of the people it serves. Changes to what or how to recycle can lead to long term confusion that results in greater contamination or people making less of an effort. Be careful that program cut-backs in response to near-term markets don't lead to lower participation when prices rebound.
- Landfill tipping fees may be low in Nebraska, but they're not free. Canceling recycling does not eliminate costs, and it may actually increase them.
- The current recycling market conditions have created opportunities for innovation and investment. Use the current market situation to leverage support for policies to improve recycling programs. For example:
 - Expand education efforts to address contamination and improve the quality of your recycling materials so they can command a better price.
 - Make a greater effort to coordinate uniform messaging, color standards, etc. with neighboring recycling programs to avoid inconsistency that leads to confusion.
- Give decision makers viable, proactive steps to take. If action needs to be taken, help guide the strategy rather than leave a vacuum for others to suggest more radical, non-recycling-friendly alternatives.
- Elected officials and other leaders can support recycling by visibly letting people know through op-eds, interviews, etc. that recycling is here to stay. Their voices can counter negative stories by sharing a long-term vision that encourages people to keep faith in recycling.
- Recyclable markets are always evolving. Recycling is a dynamic process that changes as products evolve and markets fluctuate. Although the current market is very challenging, it will remain an

important element of our solid waste management system. Here are some reasons that stability to the market for recyclables will return.

- China is still accepting recyclable material if it contains less than 0.5% contamination. China has only banned mixed plastics and mixed paper. In addition, the Chinese government has indicated that they would accept pulp made from recycled paper along with pellets and resin made from recycled plastics.
- Opportunities to export recyclables to other countries such as Mexico, Brazil, India and Vietnam will likely increase, off-setting some of the loss with materials ban by China.
- A majority of the recyclables collected in Nebraska are shipped to domestic manufacturers.
- Domestically, increased capacity to recycling paper fibers will be added over the next few years. According to the Pulp and Paper six new containerboard recycling paper mills will add 2 million tons of capacity over the next two years.

Talking points for communicating with the general public:

- Recycling makes a difference. Despite some negative stories that have been circulating, most recyclables are, in fact, recycled. Research has shown that a prime motivator of recycling behavior is understanding that it leads to a tangible result. Whether or not they care about the environmental benefits, it's important that people know the bottle they put in a recycling bin actually gets turned into something new. To the extent possible, research where local scrap materials are going and tell people what they're being turned into with as much specificity as you can. This helps counteract the corrosive belief that "it all gets thrown out anyway".
- You can help recycling by sorting correctly. Acknowledge that the problems with China and contamination are real, but then give people a call to action that allows them to personally help solve the problem.
- Recycling is great, but reducing and reusing are golden. Pivot the narrative to how people can have an even greater impact on environmental concerns by reducing what they consume and reusing more. Education programs tend to focus on recycling, but now is a good time to reinforce the other "Rs".
- Above all, keep it positive. Recycling is going through a rough patch, but it is a well-established, multi-billion-dollar, international industry that generates hundreds of thousands of jobs and has a direct, measurable impact on our lives. Be transparent about the challenges, but also provide a positive reason to have faith in recycling and waste prevention.