

## Frequently Asked Questions – Oregon Recycling Processors

We are now feeling the full effects of China's National Sword Program. The recycling industry has not experienced such an abrupt and dramatic increase in operational costs dating back to the start of curbside collection of recyclables in Oregon. The increased operational costs coupled with the dramatic drop in the value of the various commodities that are collected at the curb has led us to record low values for curbside commingled materials.

Investments in new sort equipment may help curb some of the added costs for processing, however, the added costs to achieve the new quality specifications demanded by China will likely have a significant and long-lasting impact on the value of the commingled recyclable materials.

### **What are the current market options for the commingled recyclables collected in Oregon?**

#### Paper

A significant majority of the commingled material collected at the curb and from businesses is various grades of paper. The majority of the cardboard collected from commercial customers is marketed to domestic mills. The larger cardboard boxes removed from residential curbside tend to go to domestic mills as well. Nearly all of the remaining paper is exported to Asian markets. China is by far the largest market for this paper. China has established a tolerance of 0.5% contamination for all imported paper. China is also enforcing additional quality specs for each individual grade of paper. Although alternative export markets have and continue to develop for sorted mixed paper, these other markets do not have nearly enough capacity to absorb the recyclable paper no longer accepted by China. Further, due to excess volumes of paper on the market, other countries are raising their quality specs to similar levels as China. Currently there are few, if any, domestic market options for these other grades of papers collected on the West Coast; however with the higher quality specs demanded by China and to a lesser degree, other export markets, domestic options may develop for a limited amount of the other sorted mixed papers.

#### Metals

The value of metals collected through the curbside program have been negatively affected by the National Sword program, however, there are markets for the material.

#### Glass

Glass is sold domestically and is not affected by export markets. It is not included in the commingled programs in Oregon.

#### Plastics

Plastic Bottles – PET, HDPE Natural and HDPE Colored – there continues to be domestic and export options for these materials – the average value is lower, however the material is moving. Other plastics on the list – plastic bottles that are not HDPE, dairy tubs, plant pots, referred to by commingle facilities as #3 through #7 mix, are difficult to market with deep negative charges to move. There are several types of bottles and tubs (containers) in the mix today that did not exist when programs added the additional containers to the list.

**1. *If local government programs need to spend more to get materials processed, where is that money going? To extra sorting staff, slowing the belts, poorer market prices, etc...?***

The issue can be broken into three primary areas:

1. **Markets.** Commodity values used to more than cover the cost of processing, which is no longer the case. The change in the market value of the recyclables is by far the largest driver of the current charge for the commingle material. The dramatic decrease in the aggregate value of the commingle material compared to the average value of the first 8 months of 2017 is greater than \$100.00 per ton. The primary drivers are the reduced market values of cardboard and other paper which are the largest portion of the commingle mix. The value of the mixed plastics (#3 through #7) has decreased by more than \$150.00 per ton and the options for marketing this material, as currently sorted are disappearing. There is a potential market for this material in Canada however, the cost may be excessive. In addition, there are materials that are not on the list, such as film plastics and rigid plastics that commingle facilities have been able to market over the past several years. The markets for these materials are gone and this material is now disposed of in the landfill.
2. **Costs to Process.** The quality requirements for processed recyclables have become quite stringent. Given the limited market options recycling facilities have had to make the following adjustments to maintain the ability to market the curbside material:
  1. significantly reduce belt speeds;
  2. add additional sorters;
  3. add quality control staff to each shift;
  4. add additional shifts;
  5. reduce the volume of material flowing through the facility due to slower belt speeds, and;
  6. material is more thoroughly processed in order to produce quality products that can be sold to end markets. This has had a significant impact on the ability to spread fixed facility costs across tons. In total these operational changes have increased production costs anywhere from 60% to 100%.
3. **Supporting costs.** There are increases in supporting costs with the market disruptions caused by the implementation of the new quality standards. The costs include:
  1. holding material for inspection (inventory);
  2. reprocessing material if standards are not met;
  3. additional freight costs incurred for shipping materials to alternative markets;
  4. Claims and potential for Claims related to rejected material - disposal fees, fines, shipping costs, demurrage... if material is shipped to China, inspected and then rejected by the Chinese government or the end market, the entire order is rejected, not just the container inspected; the time it takes for material to travel from a recycling facility in Portland to the point of inspection in China can be as much as 60 days. If the quality is not acceptable, an entire order will be rejected. The cost for this can be well in excess of \$100,000.00 depending on the size of the order. In some cases the facility may be barred from sending additional material to China for an extended period of time. Depending on circumstances, the broker that is responsible for the purchase of the rejected material could have their license to buy material suspended or revoked, and;
  5. increased spoilage due to extending the sales cycle of finished bales.

**2. *Is any extra money socked away for technological improvements that will help get better quality?***

All recycling facilities include capital investment as a portion of a business plan. There are no additional funds being set aside at this time other than what is normally retained for future investment. In fact, current market conditions and risk are causing some of the reserved capital funds to be temporarily redirected to offsetting potential claims against contaminated material (noted above).

A number of facilities in the market either have plans for system upgrades in 2018 or already made significant facility investments in the last two years. Some processors note exploring optical sorting systems to enhance the quality of material. Additional equipment, upgrades and replacement of equipment is not expected to greatly reduce the current processing costs. Rather, it is anticipated that these equipment changes will get us closer to meeting the quality specs of 0.5% prohibitives established by China.

**3. *If there is a lot of contamination, what signals are processors giving customers about that?***

In this case the customers are the hauling companies that collect the curbside material and their local governments. Recycling processors do not typically conduct outreach to households. They report back to the other entities so that they in turn can communicate with the customers. This process is constant and has been on-going since the implementation of recycling programs.

Processors take the following steps to communicate with haulers and local governments:

- Inbound loads are sampled for contamination;
- Pictures are taken of any load contamination;
- Communication with driver delivering material to increase awareness;
- Communication with management of collection companies including pictures and details of contamination;
- On-going monitoring of load quality for improvement, and;
- High levels or consistent contamination can lead to hauler to be charged increased processing fees or rejected altogether (rare).

**4. *If we deliver cleaner material, will our cost be reduced?***

The most significant driver of pricing is market demand. This cannot be controlled/guaranteed by cleanliness of material. However, if a supplier does consistently deliver higher quality (cleaner) material then some incremental improvement in price paid, or fees charged, may be achieved. The processors operate in an open market and have flexibility to pay different rates, or charge different fees, to different suppliers. If a market had a more stringent acceptable list and the list was enforced, then improved pricing would likely occur.

The largest contributor to the challenge of sorting commingled materials to market specifications is the labor costs of removing the 9% to 14% materials (garbage and non-program materials) that are not on the list. Removing a significant amount of this material through education at the curb and other methods of

educating the public would likely improve the value and reduce the cost to process the commingled recyclables.

Removing certain hard-to-market materials such as plastics #3-#7 would have a similar incremental effect on pricing. This would lead to some improved efficiencies, decreased disposal costs and potentially lower cost of production. However, the predominant material in carts is paper and the material will still need to be cleaned to 0.5% so the process will still be expensive.

**5. *You advocate for changing the commingled recycling list, will that guarantee that the material will be recycled and not disposed?***

At this time, we can only guarantee that the better the quality of the material, the closer we will be to having consistent end-markets for our product. Paper is particularly challenging to guarantee at this time, but the other materials on the list have maintained steady marketability for an extended period of time.

The materials that ORRA is recommending be removed from commingled recycling programs are materials that processors cannot recover in quantities, or of a quality, to recycle. There is concern that if these materials are left on the list, we are unintentionally misleading the public when we know this material will end up in the landfill. It would also help curb the “wishful” recycling. **ORRA’s Suggested Commingled Recycling List is attached, for your information.**

**6. *What guarantees are there that if the program changes, there will be less trash or contaminants?***

It will take a while for the consumer to change, and it will take education to begin. However, without enforcement – all the way up the line to the consumer - and without consistent monitoring, we will never see the long-term changes that need to occur and continue. Most Oregonians want to do the right thing, and with appropriate education, they will make positive changes. Unfortunately, it is also true that for some, without some sort of penalty for NOT doing the right thing, the bad habits will continue.

**7. *I’m still confused. All of these materials that we are taking out of the cart are recyclable, why don’t the processors want them if they are recyclable?***

Recycling facilities are set up to process certain types of material. Trying to sort out ALL potentially recyclable materials that are currently in the cart is nearly impossible – it would be cost-prohibitive to set up to recycle every possible item. There are several new plastic containers at the curb that simply did not exist when we agreed to move to accepting dairy tubs and all bottles. Additionally, unless there are truck load quantities of materials, the product will not have a viable market. The expense to try to get a partial load delivered, especially at a distance, does not make economic sense and it is practically impossible to find someone to haul it. For these reasons, marginal materials with unstable markets are not appropriate for the curbside commingled stream.

**8. *Additional Comments:***

- The current situation is not unique to Oregon. California and Washington and any other state that was previously shipping a large portion of their sorted recyclables to China are experiencing the

same difficulties. Up until January 1, 2018, China was the market for 60% of the world's recycling, so these restrictions are being felt world-wide.

- It is important to understand that these pricing conditions are temporary. The world needs packaging materials and sorted recyclables are the primary feedstock for making packaging of all types. Over the next couple of years, new consuming mills will open in countries other than China, and maybe even domestically, to meet this unmet demand for paper and plastic packaging materials. When this occurs, orders and pricing for recyclables will increase. However, it should also be expected that the quality restrictions will continue.
- Education and enforcement has to be integral to system changes and contamination reduction.
- The following link from Resource Recycling Posted on February 13, 2018, lays out the time line of China's initial effort to improve the quality of imported recyclables with the Green Fence and the progression to the National Sword program that has led to our current situation: [From Green Fence to Red Alert: A China Timeline.](#)