



Recycling is Broken

Overcoming Today's Challenges...

James Castro

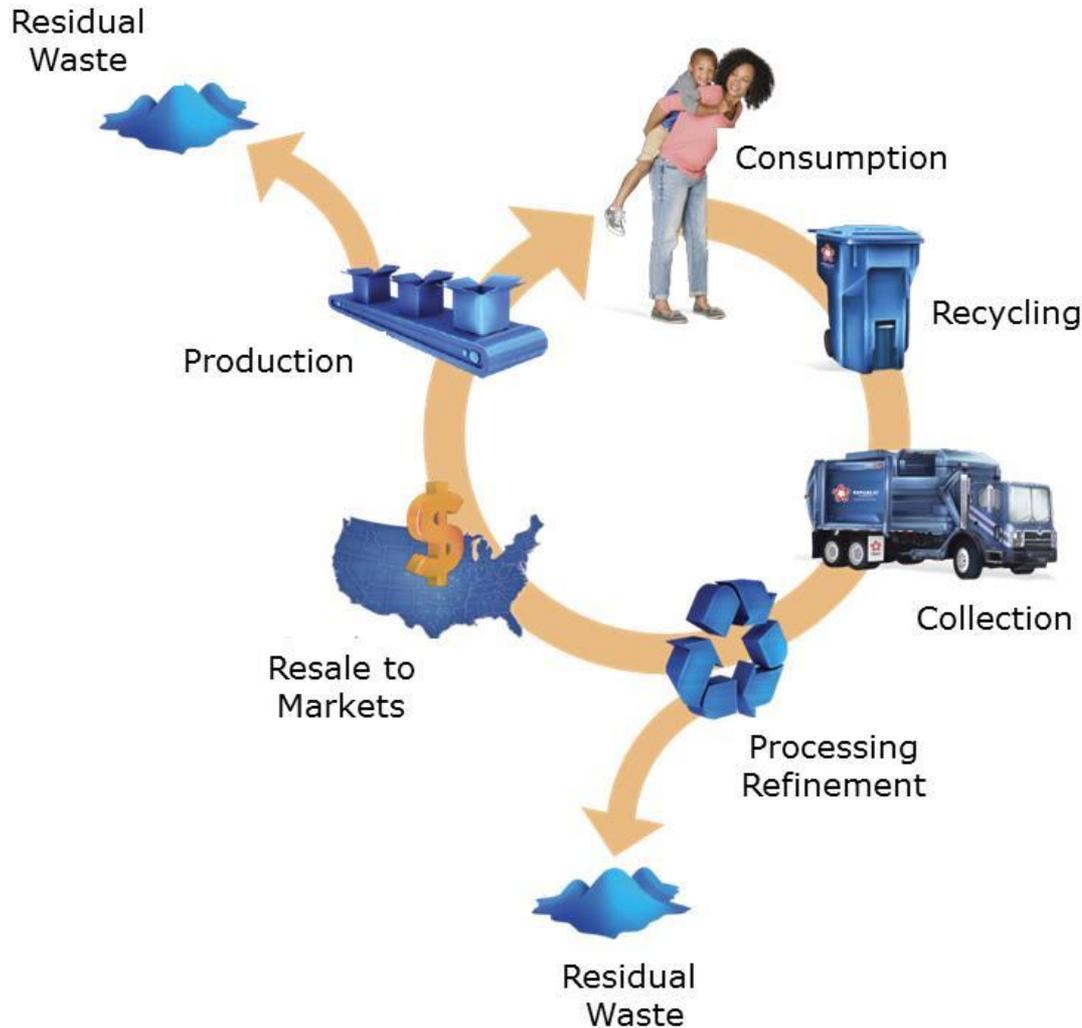
General Manager

Elizabeth Martinez

Municipal Manager



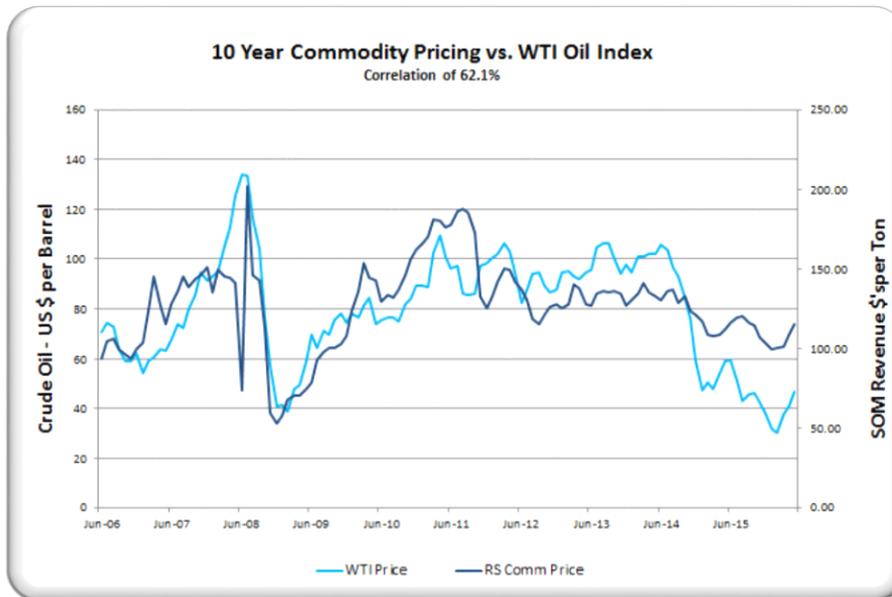
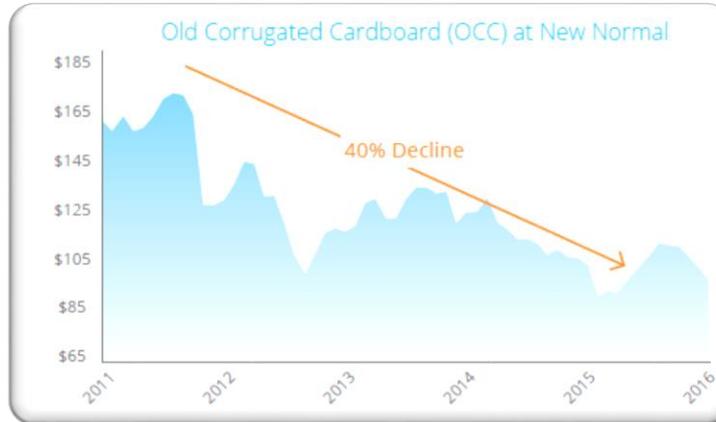
The Recycling Life Cycle



Factors Driving Costs

- Participation rates – Higher participation, while the goal, drives more costs
- Pounds per set-out – plays a significant role in service cost per household
- Commodity mix – changes in the stream can impact processing costs
- Residual/contamination – drives additional direct costs
- Commodity value – direct impact on any returns

Trends in Markets



- Glass has negative value in most markets, unless supported by subsidies
- Corrugated Cardboard has decreased in price per ton for last 5 years
- End markets impacted by global slow-downs

Trends in Material

Trends



Implications

Material no longer in circulation
18M tons in 2000 → ~2M in 2015

Lighter-weight and limited end markets
HDPE → off-spec PET

Lighter-weight and flexible packaging
not recyclable
Tin can → copolymer pouch

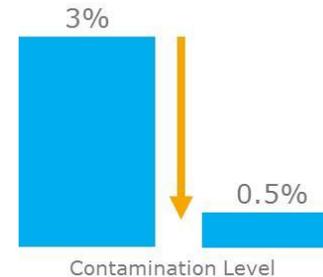
Waste minimization increasing pressure on total waste and recycling tons

China Sword Explained

For decades, China has been the largest importer of the world's recycled commodity, and the U.S. was 40% of the inbound stream.

In 2017, China announced efforts to clean up the country, which included dramatic changes for acceptance criteria of imported recyclables.

- A significant reduction in acceptable contamination levels (From ~3% to 0.5%) in any recovered paper and plastic grades.



- Additionally, China banned all mixed paper from import, regardless of contamination levels. (20% of historical stream).

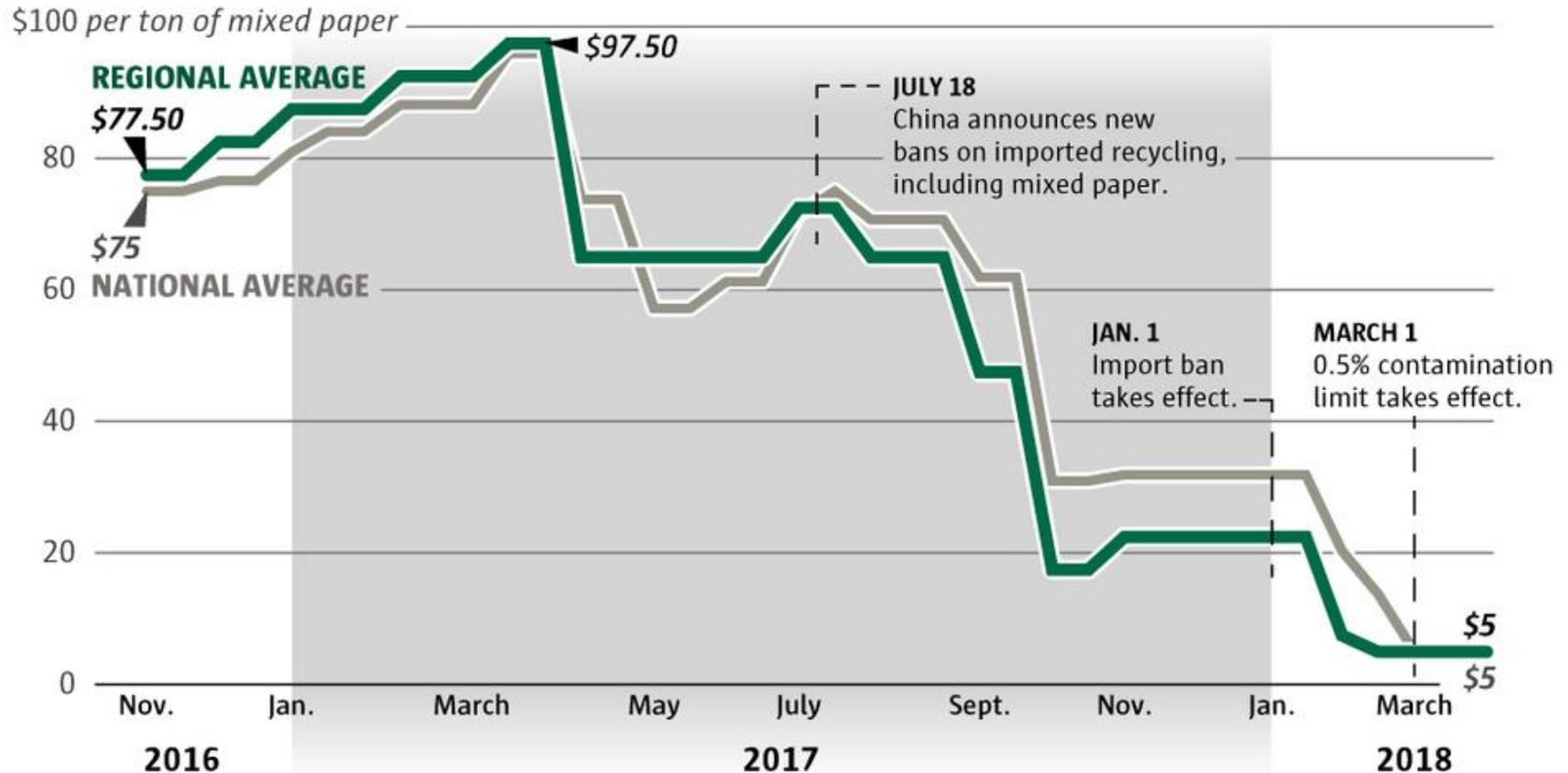


Reductions took effect in March 2018, and drive costs and changes at most recycling facilities in the country to meet new standards

Market Impacts of China Sword

China closes the door, prices crash

The average price paid to recyclers for a ton of mixed paper in the Pacific Northwest and across North America has plummeted in the last year.

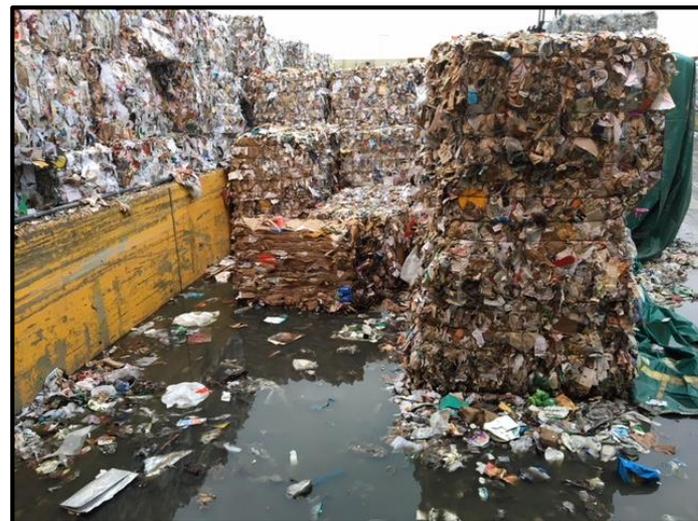


Source: RecyclingMarkets.net

EMILY M. ENG / THE SEATTLE TIMES

China Sword Immediate Impacts

- Adjusted processing speeds to improve quality of sorted material
 - As a result, some facilities are unable to handle daily material volume
- Adding human resources to our sort lines, and increasing self-inspections to further reduce contamination
- Exploring investments in newer, more accurate sorting technology (in select markets)
- Actively exploring other domestic and international markets
 - Many are flooded by the global industry shifting away from China

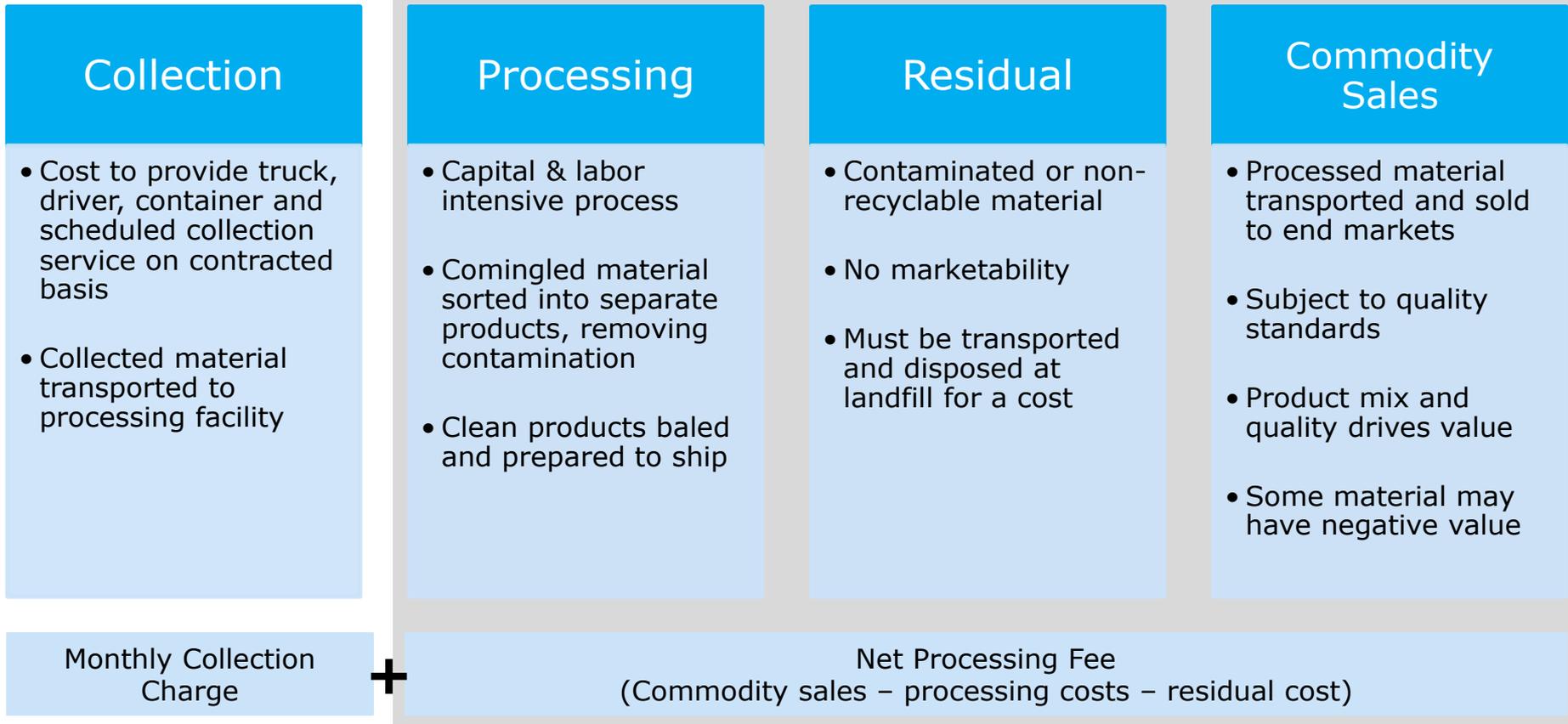


Jan 2018 – Processed bales in Northwest, without market buyers, deteriorated by weather

While we continue to process mixed paper and old newsprint, we are proactively evaluating the need to dispose of excess material that deteriorates beyond the point of commercial value, or poses safety risks

New Recycling Business Model

The Cost of Recycling



The cost of a recycling collection program is the sum of the **Collection Charge** and the **Net Processing Fee**

Long Term - Public Education

1. Public Education – *WHAT* to Recycle

ALWAYS Recyclable	NEVER Recyclable	SOMETIMES Recyclable (Select Markets)
<p>Paper</p>  <p>Plastic</p>  <p>Metal</p>  <p>Cardboard</p> 	<p>Diapers</p>  <p>Garden Hoses</p>  <p>Shoes/Clothing</p>  <p>Food Waste</p>  <p>Yard Waste</p> 	<p>Plastic Bags</p>  <p>Glass</p> 

2. Public Education – *HOW* to Recycle

Empty. Remove any remaining food or liquid contents from your recyclable item before placing it in a recycling container;

Clean. Lightly rinse the recyclable item to remove any remaining residue; and

Dry. Gently shake out excess water or let the recyclable item air dry before placing it in a recycling container.



Empty.



Clean.



Dry.