



*Recycling Trends in
the U.S. and WM
Resources in NH*

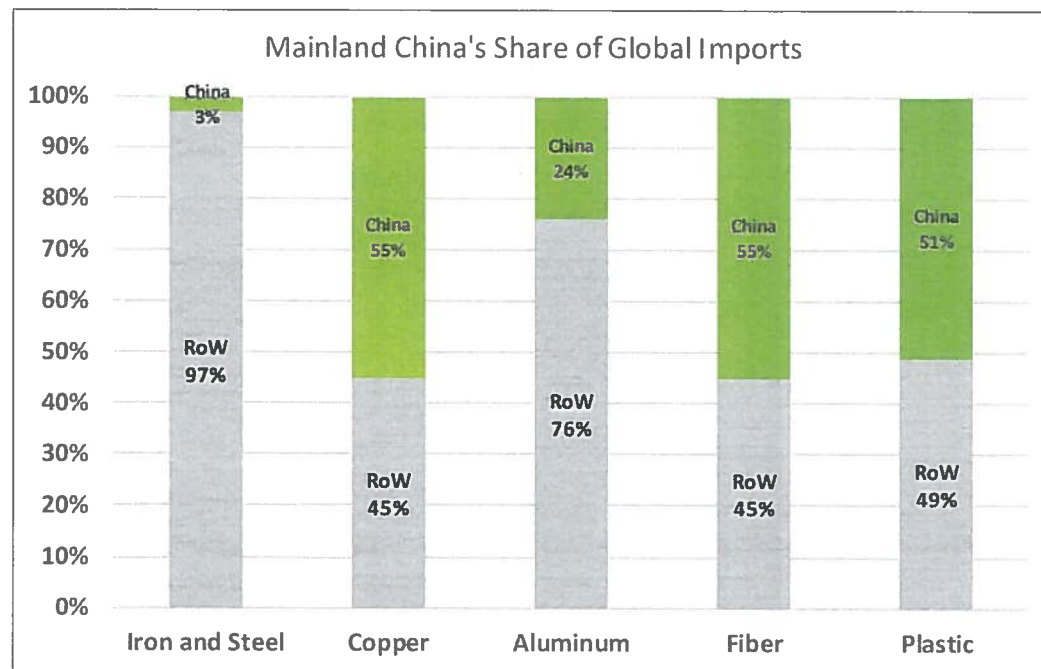
Presentation before HB 617 Study
Committee - September 20, 2019



China

One country's impact on an industry

- **Global economy.** Over the past 20 years, China has become the primary market for recyclables from across the globe.
- By 2017 China consumed 50% of the world's recyclables. Over 30% of U.S. recyclables were exported to China.
- Mixed Paper and Mixed Plastics are banned from import into China.
- A 0.5% contamination limit on all other recyclables makes it difficult to sell into China.
- 13.2 million tons per year of recyclables are now competing for alternative markets.
- China will ban all imports by 2020.



Reduced overall demand, supply surplus,
increased quality requirements =
increased processing cost and low commodity
values for paper

Top Ten U.S. Exports

- Recyclables are the largest U.S export item by volume
- The U.S. is impacted by trade interruptions with its investment in the recycling industry and other products
- We continue to export large volumes, but the end markets are changing

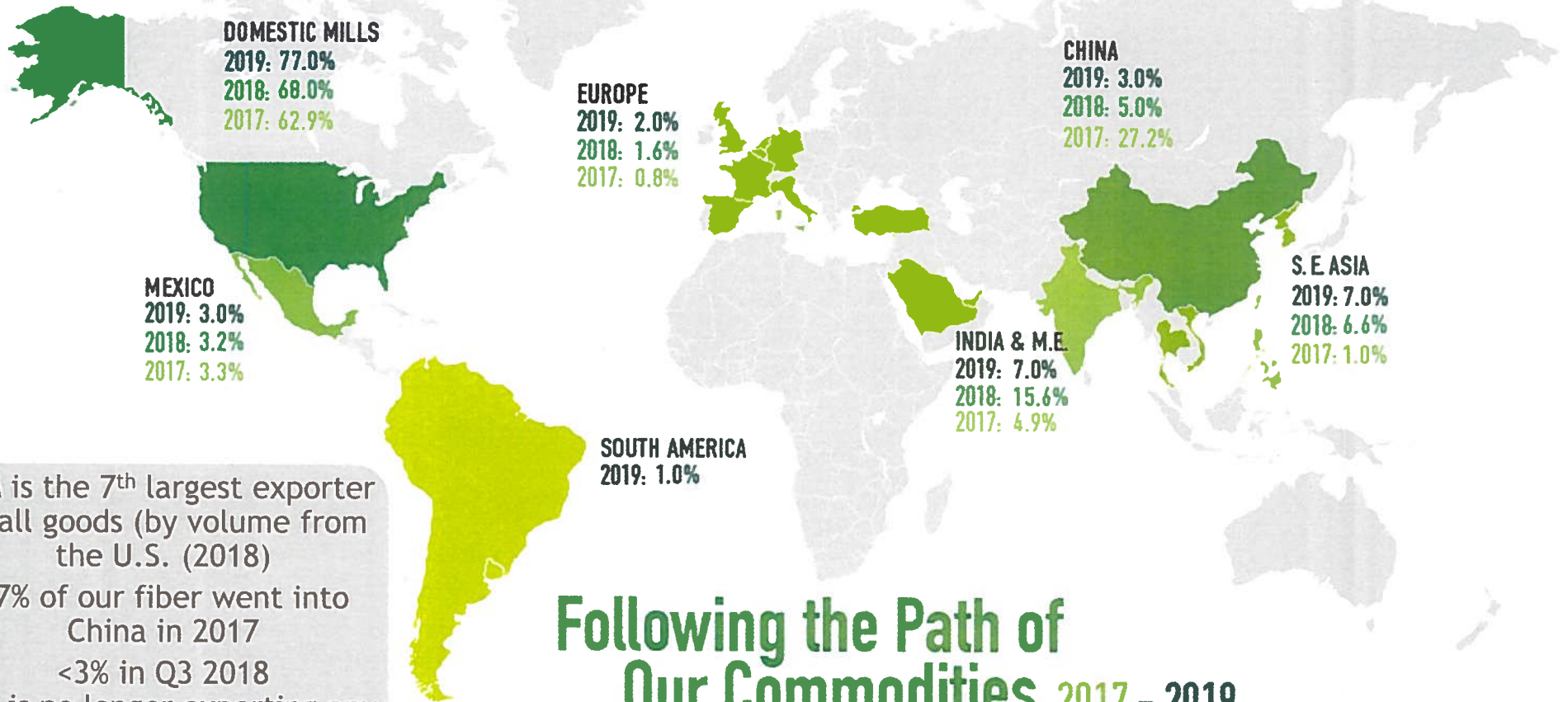
2017 Top 100 Exports

(in TEU)



Source: JOC.com

WM Exports – moving away from China



WM is the 7th largest exporter of all goods (by volume from the U.S. (2018)

27% of our fiber went into China in 2017

<3% in Q3 2018

WM is no longer exporting any residential plastics

Following the Path of Our Commodities 2017 - 2019

Why do we recycle?

- Recycling conserves resources by **creating secondary feedstocks** for industry
- Conserving virgin resources by substituting recycled feedstocks for raw materials is an recycling environmentally good thing to do
- Recycling makes business sense when done correctly



Collection is not recycling

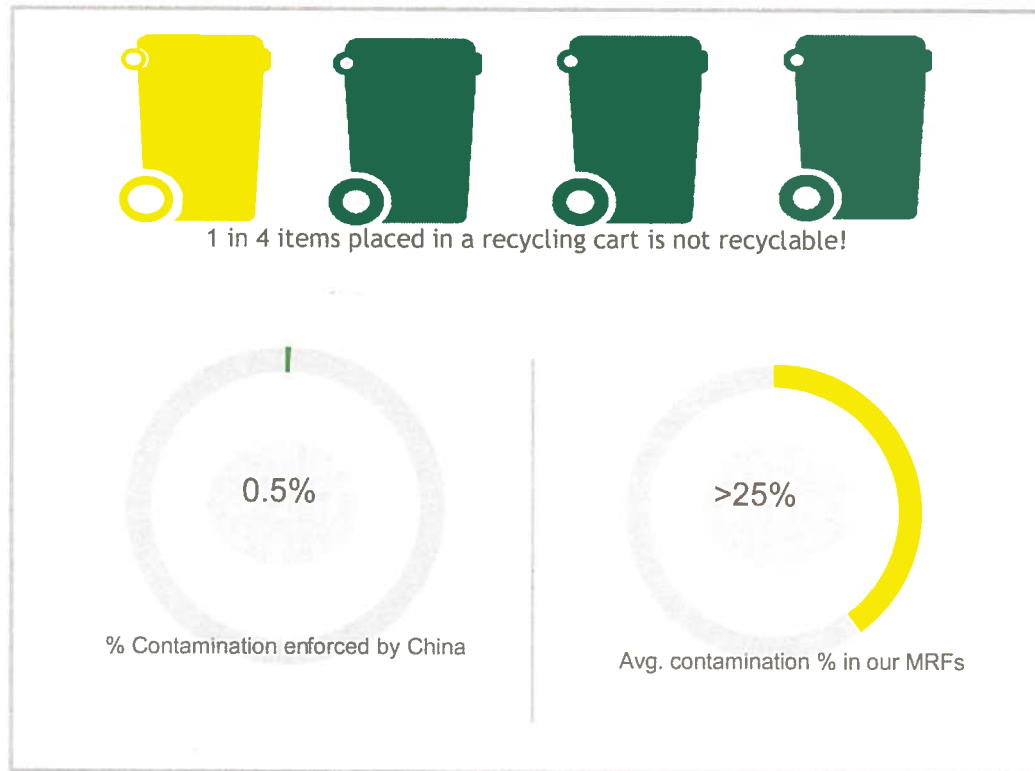


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- Recycling doesn't happen until a material displaces virgin resources
- Unless materials becomes a feedstock for a new product, it increases cost and environmental burden.

Recycling in 2019



450 pounds of every ton collected is contamination when markets demand <10 pounds.

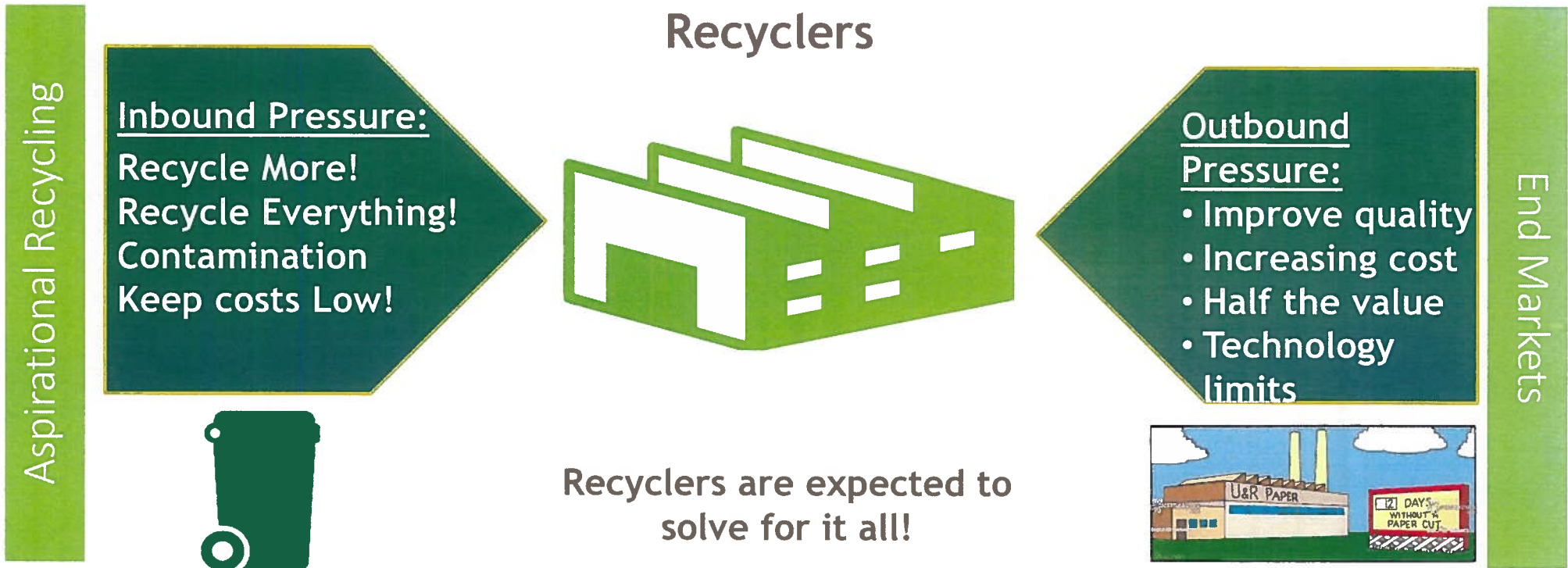
**The “Right Thing” must be reframed.
We must recycle those materials that can be made into new products.**

This is not recycling



- We spend 140K hours each year cleaning plastic bags, hoses, and Christmas tree lights out of screens
- Our recycling plants received over 28,000 lbs of batteries last year. They are the largest source of fires

Recycling in the Crossfire



Why Single Stream (SS)?

- Safety - A major driver in moving to cart based collection programs - automated collection led to a 36% reduction in on-the-job injuries
- Increased Participation - Recyclables collected from conversion to Single Stream from Dual Stream averages 40%, due to customer convenience
- GHG Emissions - Total GHG benefit of -0.091 metric tons per day of CO₂ due to Single Stream recycling over Multi-stream for every ton collected.
- Cost Savings - Over half (~60%) of the full cost of curbside recycling is the collection cost and SS programs reduces collection costs and the cost to the customer

Frequent Questions

1. Does Single Stream Recycling result in Greater Contamination Levels than Traditional Dual Stream Recycling?

Answer: Without Education and Enforcement it can

Education is key. Experts indicate that dual stream recycling programs today are just as contaminated as single stream programs, so while we remember “cleaner” programs 15 years ago - today’s quality standards are much higher than ever before for all programs.

Frequent Questions (cont.)

2. Did Industry's Commitment to Single Stream Cause the Restrictions Imposed by China on Recycling Imports?

Answer: No

China's ban has to do more with their "green" goals. They have announced an intention to ban all recyclables regardless of quality. This means even the super clean material we generate will no longer be accepted.

Recycling has been impacted across the globe by China's import policies. This is not a "U.S. issue - it is a global issue."

Frequent Questions (cont.)

3. What is WM doing to respond to these restrictions in China?

Answer: A lot.

The majority of recyclables collected for recycling in the U.S. have always been recycled in the U.S. In 2019, over 75% of all WM recyclables are by domestic mills, up from 63% in 2017.

WM is no longer exporting any residential plastic - it is all recycled domestically. The U.S. has had robust markets for PET and HDPE plastics, and a growing market for #5 polypropylene (PP - such as cold drink cups).



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Frequent Questions (cont.)

4. Is WM Committed to Recycling?

Answer: Yes

WM is investing in the future of recycling with a foundation of 140 existing recycling related facilities in North America

WM has announced 3 new facilities in 2019 while upgrading existing facilities to handle more material, more efficiently. We have over 100 installations of new technologies in process this year - from optical sorting to robotics

WM has developed a comprehensive free web site for use by businesses, homeowners, apartments and condominiums, schools and municipalities which provides as an educational and training resource. The link is

<https://recycleoftenrecycleright.com/>



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Frequent Questions (cont.)

5. What is WM doing for recycling in NH?

Answer: WM of New Hampshire built one of the first Material Recovery Facilities (MRFs) in NH in 1990 at the Turnkey Recycling and Environmental Enterprise (TREE) Facility in Rochester.

The TREE MRF is part of an integrated solid waste management system that includes regional WM recycling facilities with advanced sorting equipment in Avon and Billerica, MA.

The TREE MRF receives 20,000 to 25,000 TPY of recyclables with about 75% transferred to Billerica, MA for further processing.

WM Billerica MRF receives 95,000 to over 100,000 TPY of recyclables with over 35% from NH. Dozens of NH communities and hundreds of NH businesses rely on the processing capabilities of the Billerica, MA MRF.



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Solid Waste Disposal Capacity

- Recycling does not eliminate the need for waste disposal capacity
- A good municipal recycling program recovers about 30%
- Difficult to manage waste must also be considered
- Waste disposal capacity in the Northeast is shrinking
- While recycling markets are global, waste disposal needs are provided on a regional basis
- WMNH TREE Facility important component of waste disposal facilities in New England

WM of New Hampshire Operations Summary

- 282 Employees working in NH
- Hauling Districts in Londonderry, Rochester, New Hampton and Keene
 - Waste collection services in 180 of 234 NH communities
 - Recycling services in 125 of 234 NH communities
- Transfer Station operations in Auburn, Laconia, Salem and Keene
 - Recyclables from transfer stations hauled directly to MRF in Billerica, MA
- TREE Facility in Rochester has recycling services through MRF and landfill disposal



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TREE Facility Highlights

- Lined landfill serving NH and region since 1979
- Public benefit recognized in NHDES permitting process
- New permit provides waste disposal capacity through at least 2034
- Landfill Gas to Energy
 - ❑ On site power generation and export, permits for 9 MW or 9,000 homes
 - ❑ UNH Eco-line Project
 - Provides Approx. 75% of all heating, cooling and power at Durham campus
 - Currently in 10th year with at least another 10 years planned