## RETHINKING RECYCLING CHINA NATIONAL SWORD

## Glass / Trash / Recycling in Crisis March 20, 2019



Mike Durfor - Executive Director

## How to Participate Today



- Audio

Audio Mode:
Use Telephone
$\bigcirc$ Use Mic \& Speakers

* MuTED

41) 000000000

Audio Setup

- Open and close your Panel
- Submit text questions
- Q\&A addressed during today's session


Start Holding your Own Web Events with GoToWebinar

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NRRA


## National Sword - What isittand

## How will it Impact My Program?

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$\qquad$
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 -CTNANMNTHE RECVCLING PARTNERSHIP

Dylan de Thomas, The Recycling Partnership
October 19, 2017


## Green Fence



## Earth Goddess



NRRA

## Where Did It Come From?

- Like Green Fence in 2013,
stemmed from a media scandal
- At core, a political issue for China


PARTNERSHIP

## Where Did It Come From?

- Anti-pollution and anti-corruption measures are Xi's SpeechHad 89Mentions of the 'Environment,' Just 70 of the 'Economy'
connected and popular
- High-profile enforcement

China's Xi Looks to Strengthen His Hand at Upcoming Communist Party Congress

## China televises raids to enforce National Sword

## China's Scrap Ban

- July 18 WTO Notice
- " 4 classes, 24 kinds of scrap"
- All plastics, unsorted mixed paper, textiles, some glass and metals


WORLD TRADE
ORGANIZATION
G/TBT/N/CHN/1211

Committee on Technical Barriers to Trade
Original: English

## NOTIFICATION

The following notification is being circulated in accordance with Article 10.6

1. Notifying Member: CHINA

If applicable, name of local government involved (Article 3.2 and 7.2): Chinese authorities seize 85,000 tons in 'Sword' raid

## What is Happening in China?

## China is facing a Severe Environmental Crisis

Voice of the Recycling Industry ${ }^{\text {™ }}$

- $60 \%$ of groundwater unfit for human consumption ...

19\% of arable land contaminated with heavy metals ..
only 84 out of 338 prefecture-level or higher cities attained the national standard for air quality.

- Rising social pressure: pollution related social incidents leading cause of social instability

Result of many factors, including:

- Decades of putting economic growth above the environment
- Lack of enforcement of existing environmental laws
- Lack of centralized control
- Staggering increase in urbanization
- 100 million new cars on the road in the last decade



## Chinese CRT glass processing



## Why Does It Matter?



- Approximately $30 \%$ of all recyclables collected are exported outside the U.S.
- Hong Kong and China account for 69\% of all U.S. exports for plastics other than No. 1 PET


## Why China is so Important to the Global Recycling Industry?



## China is becoming self-sufficient

Figure 1
Chinese Recovered Paper Collection and Imports
Million Tonnes


## 2017 Paper Scrap Exports from the EU



Europe's paper scrap exports to
China halved between January and November 2017

SOURCE: Eurostat, Resource Recycling and CEPI

## The evolution of packaging



Baby Food \& Formula


Cookies / Crackers Pet Food


Personal Care

## Plastics exports



## World's Largest Plastic Scrap Exporter: U.S.

| Top 20 Plastic Scrap Exporters | 2011 | 2012 | 2013 | 2014 | 2015 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| USA | $2,127,877$ | $2,011,095$ | $1,909,535$ | $2,172,382$ | $2,043,124$ |
| Japan | $1,631,455$ | $1,673,620$ | $1,681,733$ | $1,670,228$ | $1,606,271$ |
| Germany | $1,462,561$ | $1,511,349$ | $1,324,863$ | $1,453,609$ | $1,376,833$ |
| United Kingdom | 880,577 | 811,509 | 648,614 | 764,404 | 791,554 |
| Netherlands | 381,131 | 428,666 | 464,294 | 431,322 | 505,903 |
| France | 502,826 | 508,034 | 454,119 | 483,026 | 468,754 |
| Mexico | 442,197 | 522,143 | 517,067 | 862,744 | 449,974 |
| Belgium | 414,619 | 456,860 | 471,666 | 437,310 | 430,720 |
| Spain | 192,363 | 236,880 | 225,844 | 333,466 | 329,937 |
| Thailand | 232,170 | 263,128 | 317,540 | 346,912 | 265,390 |
| Italy | 269,601 | 228,019 | 191,621 | 175,859 | 223,076 |
| Canada | 197,638 | 203,046 | 170,783 | 193,037 | 208,939 |
| Australia | 151,209 | 193,087 | 155,085 | 185,705 | 206,060 |
| Rep. of Korea | 161,358 | 182,975 | 183,291 | 192,851 | 187,609 |
| Malaysia | 153,865 | 197,598 | 250,809 | 247,007 | 182,271 |
| Poland | 102,736 | 101,301 | 99,431 | 138,834 | 166,378 |
| Austria | 133,556 | 170,389 | 172,440 | 182,299 | 149,306 |
| Indonesia | 166,430 | 204,750 | 231,747 | 193,842 | 148,735 |
| Other Asia, nes | 164,825 | 157,914 | 120,210 | 146,153 | 145,125 |
| Czechia | 102,361 | 115,307 | 128,813 | 120,879 | 123,793 |
| Hong Kong* | 863,754 | 308,016 | 190,491 | 82,698 | 90,808 |
| Rest of World | $1,755,980$ | $1,660,216$ | $1,934,263$ | $1,946,799$ | $1,740,598$ |
| Grand Total | $12,491,089$ | $12,145,903$ | $11,844,060$ | $12,760,676$ | $11,841,157$ |

*Domestic exports, does not include re-exports

## And It’s All Single-Stream's Fault



SINGLE STREAM RECYCLING



SIMBLE STREMM Recyclables


RESOURCE
RECYCLING

## Increasing contamination

Contamination Percent


- According to WM figures, contamination of loads is an average of $16 \%$ of inbound tons.
- Contamination can be up to $50 \%$ of incoming loads
- Processing costs continue to increase as markets demand reduced contamination. This drives up cost to customers.

Source: Waste Management, 2015

## And It's All Glass' Fault

Glass 'recycled' in curbside bins actually goes to landfill
Orange Grove Center not yet ready to sort it; raising \$1.6 million for new recycling equipment

## Houston City Council Approves New Recycling Contract, Excludes Glass

Residents now have four months until a ban on glass in green bins goes into effect.

## BUSINESS

## High Costs Put Cracks in Glass-Recycling Programs

Some cities pull back as processors begin to charge for accepting trash-heavy shipments

## RESOURCE RECYCLING

## American recycling is stalling, and the big blue bin is one reason why

# Recycling Industry Facing 'Nationwide Crisis,' Waste Management CEO Says 



IF you live in the United States, you probably do some form of recycling. It's likely that you separate paper from plastic and glass and metal. You rinse the bottles and cans, and you might put food scraps in a container destined

## 'Heavy Hitters' in waste management call recycling 'broken model'

ing industry in the US is flin or lationwide crisis" as
acilities increasingly lose money and demand for recyclables, Waste Management CEO David Id the Washington Post.
any's recycling division posted a loss of nearly \$16 the first quarter of the year, the newspaper reports. It uuttered almost 1 in 10 of its largest recycling facilities

## Newsprint: a serious problem

North American shipments in million metric tons:
2000: 15.8
2005: 12.7
2010: 7.8
2011: 7.3
2012: 6.7
2013: 6.4
2014: 5.4

This is a loss of 50 percent over eight years.


## Larger is better

More and more large, regional, hub-andspoke MRFs will come on-line. Thus, you'll see smaller and smaller communities moving to single-stream recycling collection and a number of smaller, old MRFs will close.

## We have seen growth in processing



## Growth of Single-Stream Processing in No. Am.



Source: Government Advisory Associates, Inc., 2013 \& Resource Recycling, 2016

## Value of a Commingled Ton



Source: Scott Mouw, NC DNER, 2016

## Recycling Commodity Prices At Historical Lows



## What Happens Next?



## New ways to assign risk

The three-year market slump has led governmental agencies and their recycling service providers to reconsider contractual agreements. New ways of risk sharing are being discussed and many MRFs are now charging suppliers for the first time.

## Monthly U.S. Plastic Scrap Exports to Mainland China During 2017 (metric tons)



## What's Happening?

- Large regional differences
- Some buying Nos. 3-7 bales
- Some having trouble moving material
- Some paying to move material
- Some producing No. 5 PP bales (Tubs and Lids)
- Some talk of landfilling



## Looking Forward

Voice of the Recycling Industry

- Market growth opportunities in Southeast Asia (Vietnam, Malaysia, Thailand, Indonesia), India, Mexico, Canada and the Netherlands

| Plastic Scrap Export Growth Markets - PE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Country | $\begin{aligned} & 2016 \\ & (\mathrm{mt}) \end{aligned}$ | 2016 YTD (mt) | $\begin{gathered} 2017 \text { (mt) } \end{gathered}$ | YTD Vol Growth (mt) | YTD Growth <br> (\%) |
| India | 61,255 | 47,884 | 74,679 | 26,795 | 56.00\% |
| Vietnam | 18,290 | 13,516 | 29,518 | 16,002 | 118.40\% |
| Malaysia | 17,221 | 12,809 | 28,015 | 15,206 | 118.70\% |
| Thailand | 1,223 | 810 | 6,214 | 5,404 | 667.00\% |
| Ecuador | 192 | 12 | 2,297 | 2,285 | 19051.10\% |
| Korea | 224 | 101 | 1,972 | 1,871 | 1851.20\% |
| Singapore | 1,861 | 849 | 1,843 | 994 | 117.00\% |

- Demand growth in the United States


## Looking Ahead - What's nexł

More environmental compliance inspections on Chinese enterprises

Low numbers of approved imports
Potential ban on additional paper, plastics and nonferrous metals


## We are sending money to the landfill

| Material | Recycling Rate | Value of <br> Unrecovered <br> Materials |
| :---: | :---: | :---: |
| Paper | $61 \%$ | \$3.1 Billion |
| Aluminum Cans | $65 \%$ | \$1.3 Billion |
| Plastic Bottles | $31 \%$ HDPE, 30\% PET | \$1.6 Billion |
| Steel Cans | $65 \%$ | \$0.4 Billion |
| Glass Bottles | $28 \%$ | \$0.1 Billion |
| Total |  | \$6.5 Billion |

## Disposal Projections in Massachusetts (MSW) 0\% per Year Disposal Reduction Scenario

| Yeer | 2010 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total Disposal Tons (baseline) | 5,610,000 | 5,610,00 | 5,610,000 | 5,610,000 | 5,610,000 | 5,610,000 | 5,610,000 | 5,610,000 | 5,610,000 | 5,610,000 |
| Total Disposal Tons (No reduction) | 5,61,000 | 5,610,00 | 5,610,000 | 5,61,000 | 5,610,000 | 5,610,000 | 5,610,000 | 5,610,000 | 5,610,000 | 5,610,000 |
| Average WTE Availability (Tons)" | 3,190,000 | 3,227,00 | 3,27,000 | 3,22,000 | 3,227,000 | 3,227,000 | 3,227,000 | 3,227,000 | 3,27,000 | 3,227,000 |
| Landfill Capacty (Tons) | 1,33,000 | 1,487,845 | 1,602,970 | 842,245 | 842,245 | 621,000 | 621,000 | 621,000 | 621,000 | 201,000 |
| Total Capacity (Tons) | 4,52,000 | 4,714,445 | 4,829,970 | 4,06, 245 | 4,069,24 | 3,488,000 | 3,848,000 | 3,488,000 | 3,48,000 | 3,428,000 |
| Deita (Tons) | (1,090,000) | (895,155) | [780,030] | (1,540,755) | (1,540,755) | $(1,762,000)$ | (1,762,000) | (1,762,000) | (1,762,000) | (2,182,000) |
| Istimstediotal Ast Disposal (Tons) | 638,000 | 645,400 | (45,400 | (45,400 | 645,400 | 645,400 | 645,400 | 645,400 | 645,400 | 645,400 |
| Assumed OX reduction in disposal |  |  |  |  |  |  |  |  |  |  |
| HOR asumes MADCP Expansions and that Boune's current contract with Scamass to be extended and allows approximatey 300000 tons of MSW disposal |  |  |  |  |  |  |  |  |  |  |
| -HDR Calculationed Average Combustion Rate 2010-2016 |  |  |  |  |  |  |  |  |  |  |
| Source - MassDEP, SWAC, 2216 Solid Waste 8 | Waste Reduct |  |  |  |  |  |  |  |  |  |

Landfill Tipping Fees for MSW by Year (1992-2016)

"WHEN WRITTEN IN CHINESE, THE WORD ‘CRISIS’ IS COMPOSED OF TWO
CHARACTERS. ONE REPRESENTS DANGER
AND THE OTHER REPRESENTS
OPPORTUNITY"
John F. Kennedy

ARecycling Non-Profit
Working Together to Make Recycling Strong!

## Where have we Come From?

## 1916 To 1918

Due to massive shortages of raw materials during World War I, the Federal government creates the Waste Reclamation Service with the motto "Don't Waste Waste - Save It."
1930's
Many people survive the Great Depression by peddling scraps of metal, rags and other items.
1940
Goods such as nylon, rubber and many metals are rationed and recycled to help support the war effort.

## 1955

The August 1st issue of Life magazine offers a two-page article on "Throwaway Living." Consumers are progressively sold on the idea that single-use items are a necessity of the modern lifestyle.
Ease and convenience become the two most desirable qualities in product marketing, inevitably leading to parks, forests and highways becoming littered with garbage.

## 1964

The all-aluminum can is introduced. Recognizing the value of used aluminum cans as a raw material for making new cans, the aluminum industry will soon begin creating a massive system for recycling and redeeming used beverage containers.




## 1965 To 1970

Reduce, Reuse, Recycle. In the form of a Mobius strip, the symbol was designed by Gary Anderson after a Chicago-based recycled-container company sponsored an art contest to raise environmental awareness.



## Shielding Your Program from National Sword

National Sword ('naSH(a)n(ə)l sôrd): I China's new quality rules on
importation of recyclable material, focused on mixed paper and 3-7 plastics.
Is this a problem? It is. But it is also an opportunity. An opportunity to diversity market options. To refocus on quality. To support jobs in U.S. recycling. To grow U.S. manufacturing.

What can you do? Keep calm, stay informed, and focus on clean material.

What else? Well, since you asked:

1. Listen to market experts. Register now for our October 19 webinar. Have your questions ready.
2. Clean up your recycling stream. High quality bales are the best shield for National Sword. Use these 6 steps to keep contamination in check.
3. Talk to Your MRF. What are they seeing? Is it going to get bumpy? What does this mean for costs? How can you work together?
4. Don't take any recyclables off your YES list. Markets ebb and flow. Rapid change is confusing for residents. Stay steady.
5. Don't freak out your residents. So long as there's no interruption in service - and there shouldn't be - you don't need to dive into the complexties of international markets. Keep it simple and keep them recycling. Focus on quality. Again, stay steady.
6. Don't teed the trolls. If negative messaging comes up, pivot to the good. Ignore the bad and the ugly. Truly, stay steady.

## National Sword Partnership Messaging

1. Webinar
2. Clean up your recycling

## stream

3. Talk to Your MRF
4. Don't change your programs
5. Don't freak out your residents
6. Don't feed the trolls

## What should MRF operators be doing? It's All About Quality!

## Clean up your bales:

- Communicate with customers
- Slow down the line

- Hire more workers
- Some MRFs having trouble finding workers
- Add new technology
- Optical sorters/robotics



## Time to Change

- We need to change our thinking
- China isn't going back to pre-Green Fence
- Other Asian markets may be a temporary band-aid
- We need to change our messaging
- Recycling isn't free
- Contamination costs cities/processors lots of \$
- Recycling creates U.S. jobs
- Re-focus on waste diversion/Zero Waste - Boston
- We need to consider changing the metrics
- Weight-based v GHG reduction v participation rates



## MARKET PREDICTIONS

The future markets are more likely than not to be volatile for some time.

Beyond that, major unforeseen events could occur totally undermining the stability of the recycling industry.


MOM - Members/Operations/Marketingmeetings are held monthly.
In addition. NRRA conducts workshops and facility tours several times a year that can be used for continuingeducationcredits toward transfer facility operator certifications and renewals.

NRRA

Wo raing I oge ther to Make Recyding Strong:

Market Pricing for September 2018 NRRA PRICE GUIDE for Members Only
**Please Note: THIS IS ONLY A GUIDE-does not reflect pricing for specific locations. Some items may be subject to rental/haul fees. NRRA uses multiple vendors; prices vary \& subject to change

## ALWA YS CALL FOR QUOTE

MARKET DIRECTION

## ALERT: ALL FIBERS CONTAMINATED

OR NOT MEETING SPEC SUBJECT TO CHARGE UP TO \$150/TON PLUS


## The NTRRA School CLUB



The NRRA SChool CLUB
builds community action by directing youth,teachers, schools, and Communities to a Clear understanding of pertinent solid and hazardous
waste issues and supporting sustainable
waste rediuction programs.



Mike Durfor, NRRA Executive Director, Presents a Special Recognition award to Scott Hazelton of Sunapee, NH Sunapee, N.H. had similar success due to the dedication of the staff and cooperation of residents. Pictured are NRRA Exec. Director Mike Durfor and Sunapee Public Works Director Scott Hazelton. For the first 9 months Sunapee has net revenues of $\$ 31,000$ and cost avoidance of another $\$ 10,000$.
Both of these outstanding programs deserve special recognition as they demonstrate the value of recycling, saving their two communities over \$100,000 so far! With municipal budgets stretched to the max every year, these savings are a welcome benefit. The challenges being presented by "China Sword" (the recyclable import ban in China) are being met daily by programs like Rye, Sunapee and so many more whose efforts need to be recognized. In spite of the turmoil within the marketplace, "Recycling Rules."

##  <br> 


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 at the Radisson hodel Eppo Centerin INarcheseste, HH Presented by -
Notheast Resurce Reowery Asscidition




Last week was the culmination of months of negative recycling news in short order:
Wednesday 8/8 - while I was delivering a presentation on China National Sword, China slapped a $25 \%$ tariff on cardboard imports from the US.

Thursday 8/9 - 10:OOam -Breaking news - Aluminum markets won't be moving for 4-6 weeks!
Thursday 8/9-1:3OPM -E-Waste pricing suffers major cost increase due to plastics markets collapse.

Friday 8/10- Scrap Metal Prices expecting large decrease

Saturday 8/11-Sunday 8/12 -Didn't answer the phone
Monday 8/13- NRRA Firefighters answer the call - NRRA moves three loads of OCC, 2 Plastics 2 stops, and 1 aluminum load. Tires picked up, scrap metal booked, and Freon removal scheduled. Press Release issued that glass has now found a new market to add to the historic PGA (Processed Glass Aggregate) usage thereby increasing the amount that can be pulled out of single stream and MSW. Town and Gown communication work continues with Indoor Air Quality programs.



THE OCEAN CLEANUP
PREPARING FOR THE PACIFIC OPERATIONS

We serve the entire NORTHEAST and are the RESOURCE for all your municipal recycling and waste stream needs.

Our mission is the RECOVERY of all materials. We are an ASSOCIATION of members helping members.


## BECOME AN

NRRA MENBER TODAY!
LET US HELP YOU MANAGE YOUR ENTRE WASTE STREAM TO HELP YOU SAVE MONEY

## Thandi OYau FOR RECYCLING

NEW HAMPSHIRE The Beauliful



## Upcoming Webinars \& Workshops



## Upcoming Webinars \& Workshops



## Upcoming Webinars \& Workshops

| NHMA 6 Regional Right-to-Know Workshops |  |
| :---: | :---: |
| The Right-to-Know Law and Governmental Meetings <br> Join Enecutive Derever Margame Bymes and Legol Ser- vice Counsel Stephen Buckey who will discius fe mquirements for holling a proper pellic metting so wel the exceptions to the meeting mquimement (the so-called poses for which putiec booles my hold a monpublic session, as well as the proctulusal requerments for a proper norpublic session. This worlahop vill adso adlrns diffi- cult "meeting" ispues, such as commanications ontide a meeting and electronic means of commanicating <br> For registration information, visit www-nhmunicipal.org under Calendar of Events. <br> Questions? Call 8oo.852.3358 or email <br> NHMAregistrations@nhmunicipal.org |  |
| $1430 \mathrm{pm}-4 \% 00 \mathrm{pm}$ <br> Fritay, May 3, 2019 <br> Dover Police Department 46 Chestant Street Dover NHI og8so <br> $1330 \mathrm{pm}-4000 \mathrm{pm}$ Tuesday, Angust 6, 2019 <br> Moultonboroush Safcty Complex 1035 Whitier Highwny <br> Moultonborough, NH ogas4 <br> TBA-Hanower/Lelbasen Region in Oetober <br> $\$ 35$ without emment, Ne | he Right-to-Know Law Governmental Records <br> s Executive Dinector Margaret Bymes and LeCounsel Stephen Buckley who will share stratemunicipalities in handing, govemmental record sing under the Right-to-Know Lsw. <br> vemmental recoeds requests requires an underill sepects of request processing including the foe swailability, storage, electronic records, reestimates, mandated access for certsin recoeds fintments review of recoeds. <br> be provided oa determining what is a govemand when and how access and copies of pubust be provided. This workshop will also adecoeds are exempt from disclosure, along, with cood request that would require a search for iments must be fulfilled or whether a request seeks to create a record that does not exist. In lance will be provided on the retention of govords and bow chims under the Right-to-Know roed. <br> 55 with publication, A Guide to Open Gov's Right -to-Know Law. |

nhmainfo@nhmunicipal.org / 800.852.3358 / www.nhmunicipal.org

## For joining us today!



The New Hampshire Municipal Association is a nonprofit, non-partisan association working to strengthen New Hampshire cities and towns and their ability to serve the public as a memberfunded, member-governed and member-driven association since 1941. We serve as a resource for information, education and legal services. NHMA is a strong, clear voice advocating for New Hampshire municipal interests.


