

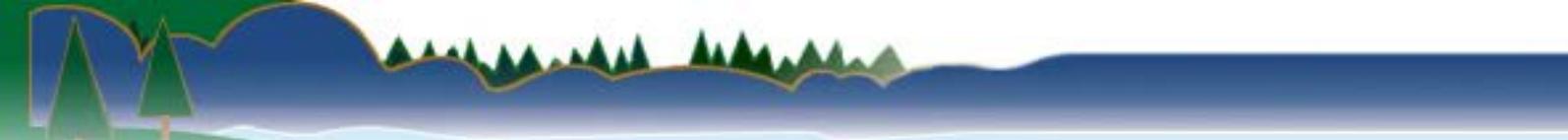


# Update on International & Domestic Recycling Markets

Material Recovery Facility (MRF)  
Stakeholder Meeting  
October 7<sup>th</sup>, 2019

Jennifer Semrau, Waste Reduction & Diversion Coordinator  
Bureau of Waste & Materials Management





## Recap 2013-2018



2

- 2013- China implemented “Green Fence,” an import restriction program
- US exports to China fell by 40%
- July 2017- China announced “National Sword”
- 2017- China begins country-wide inspections; revokes permits
- Jan. 1, 2018- Bans on 24 categories of recyclables, including post-consumer plastics and mixed paper
- Mar. 1, 2018 – Carried waste standard (0.5%) goes into effect



## Recap 2013-2018 (cont.)

- 2018- imports to other SE countries increase dramatically, resulting in Indonesia, Malaysia, Thailand & Vietnam implementing their own import restrictions
- 2018- reports from China that mills are taking downtime due to lack of fiber imports
- Aug. 15, 2018- DNR holds first MRF Stakeholder meeting



Source: Resource Recycling



## Since August, 2018

- Sept, 2018- paper giant Nine Dragons announces plans to buy Fairmont, WV paper mill; 2 Chinese plastic companies announce plans to open facilities in GA & SC
- Oct, 2018- Nine Dragons announces it will spend \$300M on recycled pulp lines in US in Rumford, ME & Biron, WI
- Oct, 2018- China's latest round of import permits doubles amount of fiber allowed in country to 2M metric tons from previous rounds
- Year end results: Recycled plastic imports to China fell by 99% in 2018 compared with 2017; paper imports fell by 1/3



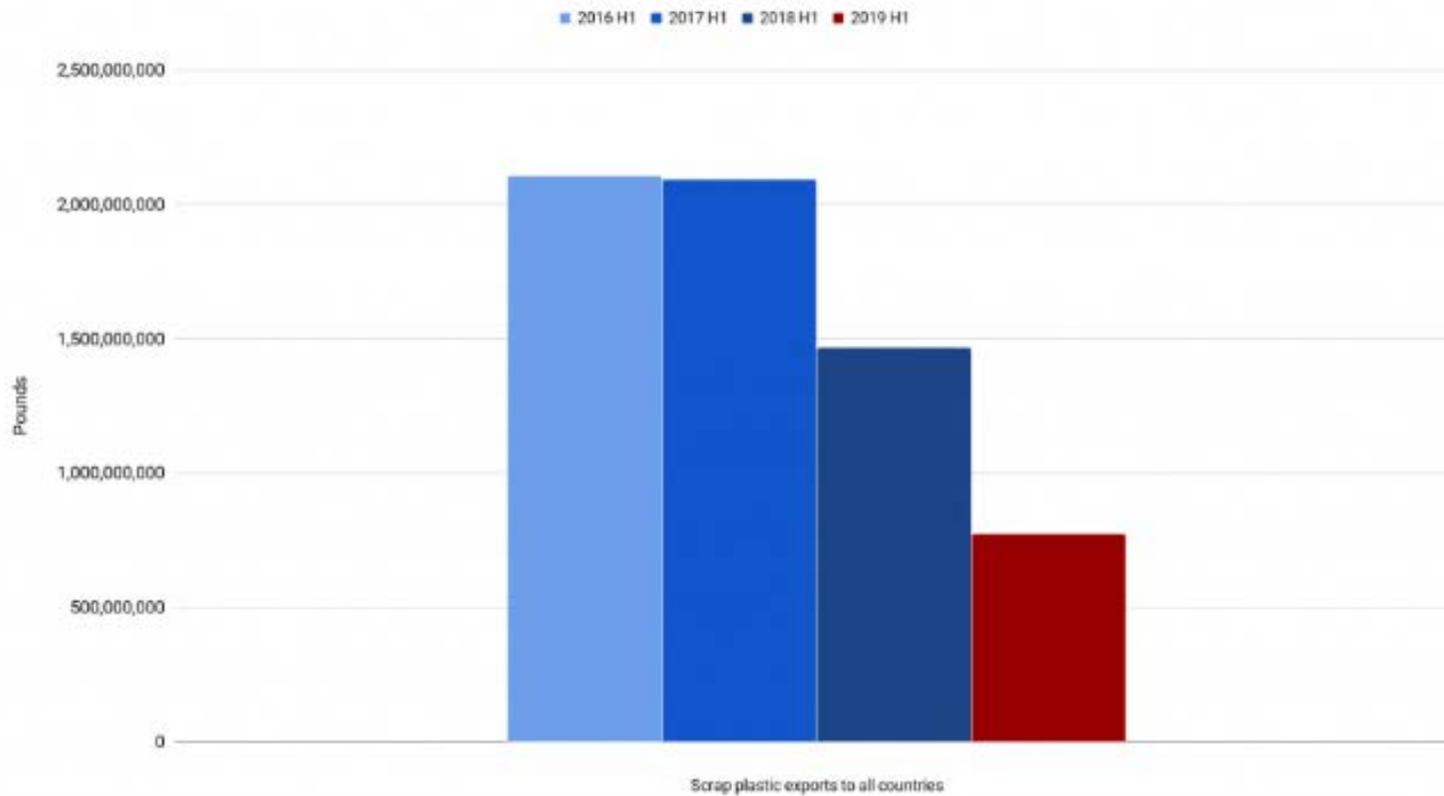
## 2019-Present

- Feb, 2019- Waste Management, Waste Connections and Republic Services all detail financial losses in annual earnings reports, but announce recycling investments
- Mar, 2019- India announces plastic import restrictions (late summer); Vietnam announces end of plastic scrap imports by 2025
- Mar, 2019- US 2018 export figures reveal paper exports increased; plastic exports down 35%
- June, 2019- OCC drops to nationwide average of \$28/ton- a 25 year low
- Aug, 2019- China announces tariff increase on accepted fiber grades



# Impact on Plastics Exports

U.S. scrap plastic exports to all countries, January-June, 2016-2019 (pounds)



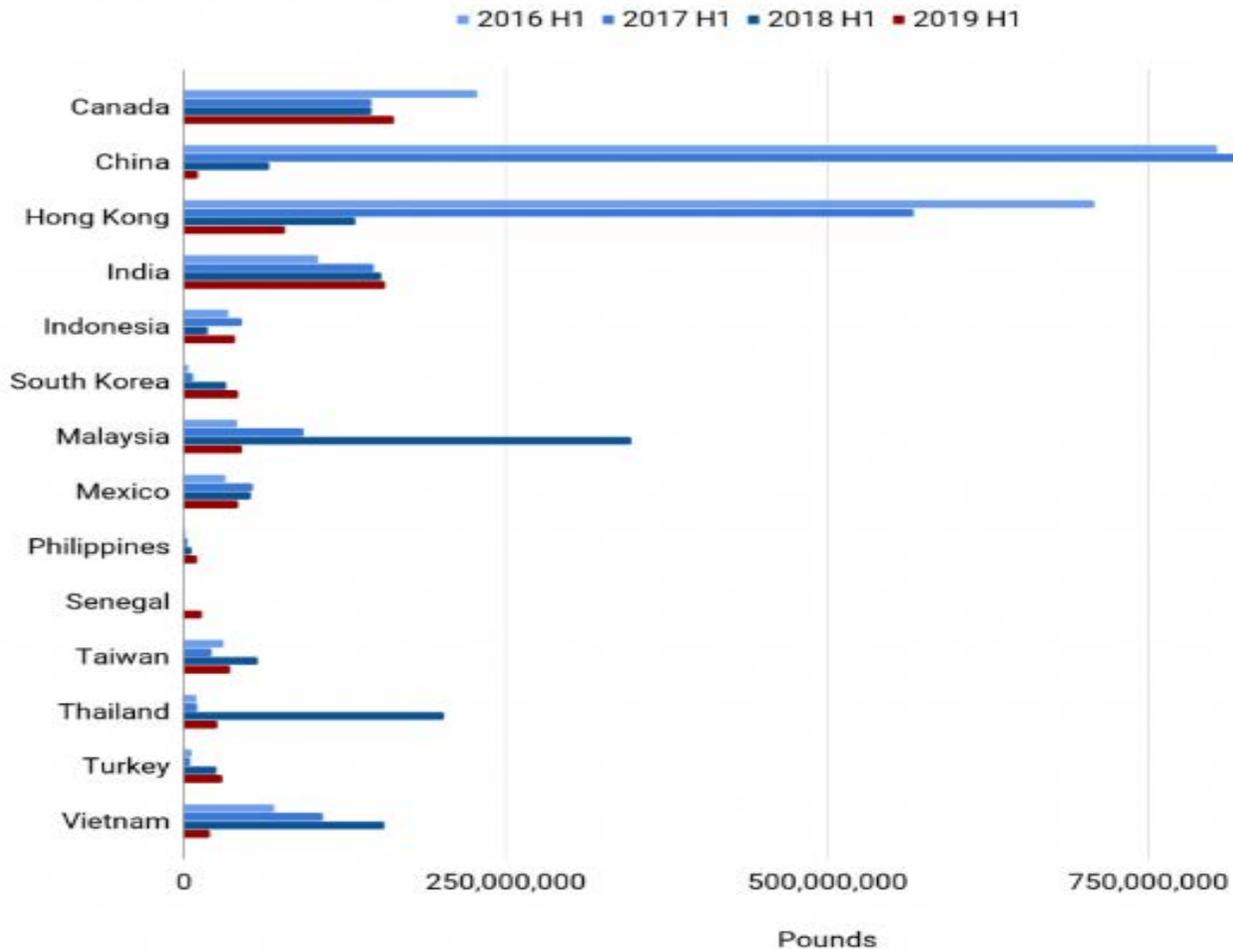
© Resource Recycling, Inc.



Source: Resource Recycling

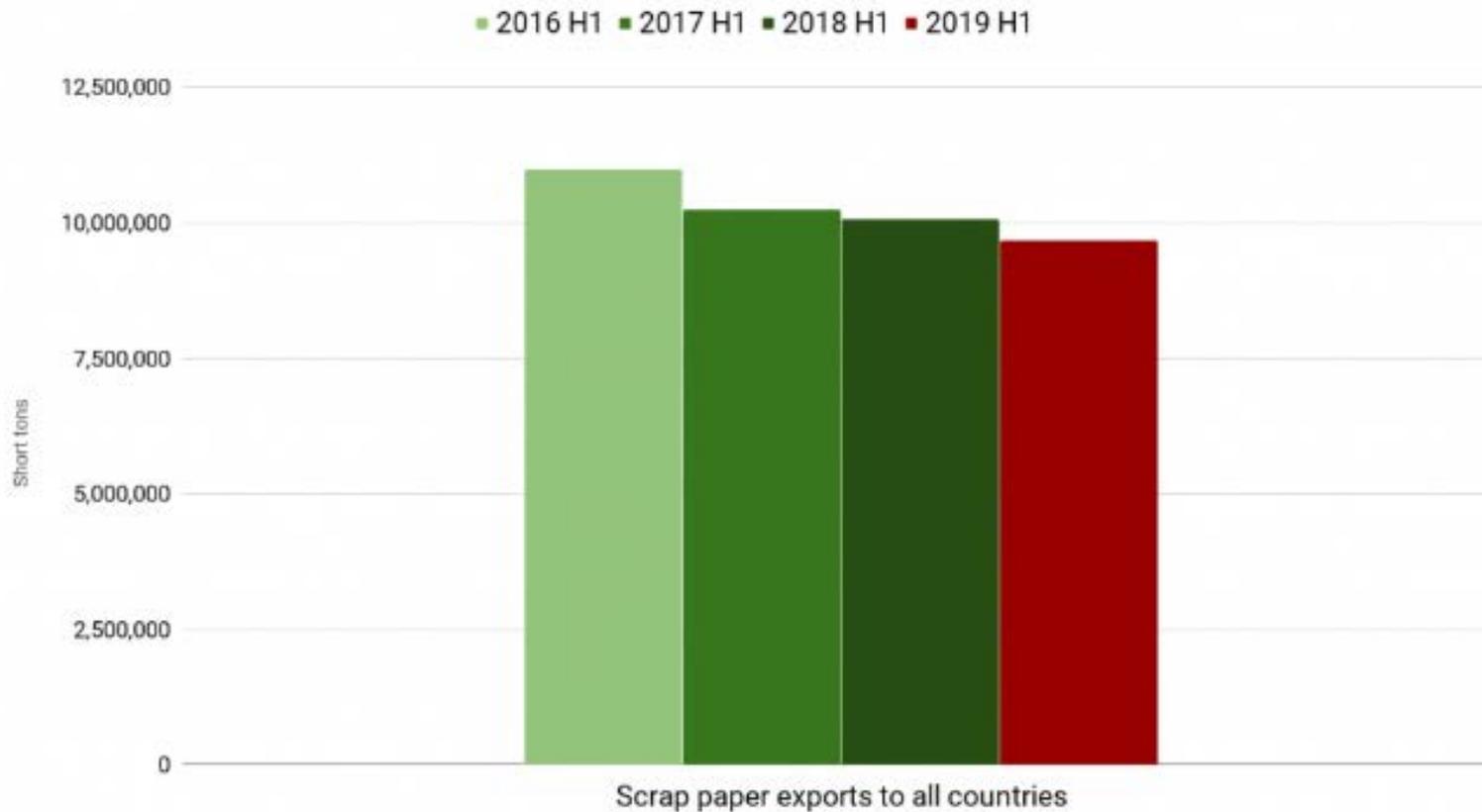
# Impact on Plastics Exports

U.S. scrap plastic exports by country, January-June, 2016-2019 (pounds)



# Impact on Paper Exports

U.S. scrap paper exports to all countries, January-June, 2016-2019 (pounds)



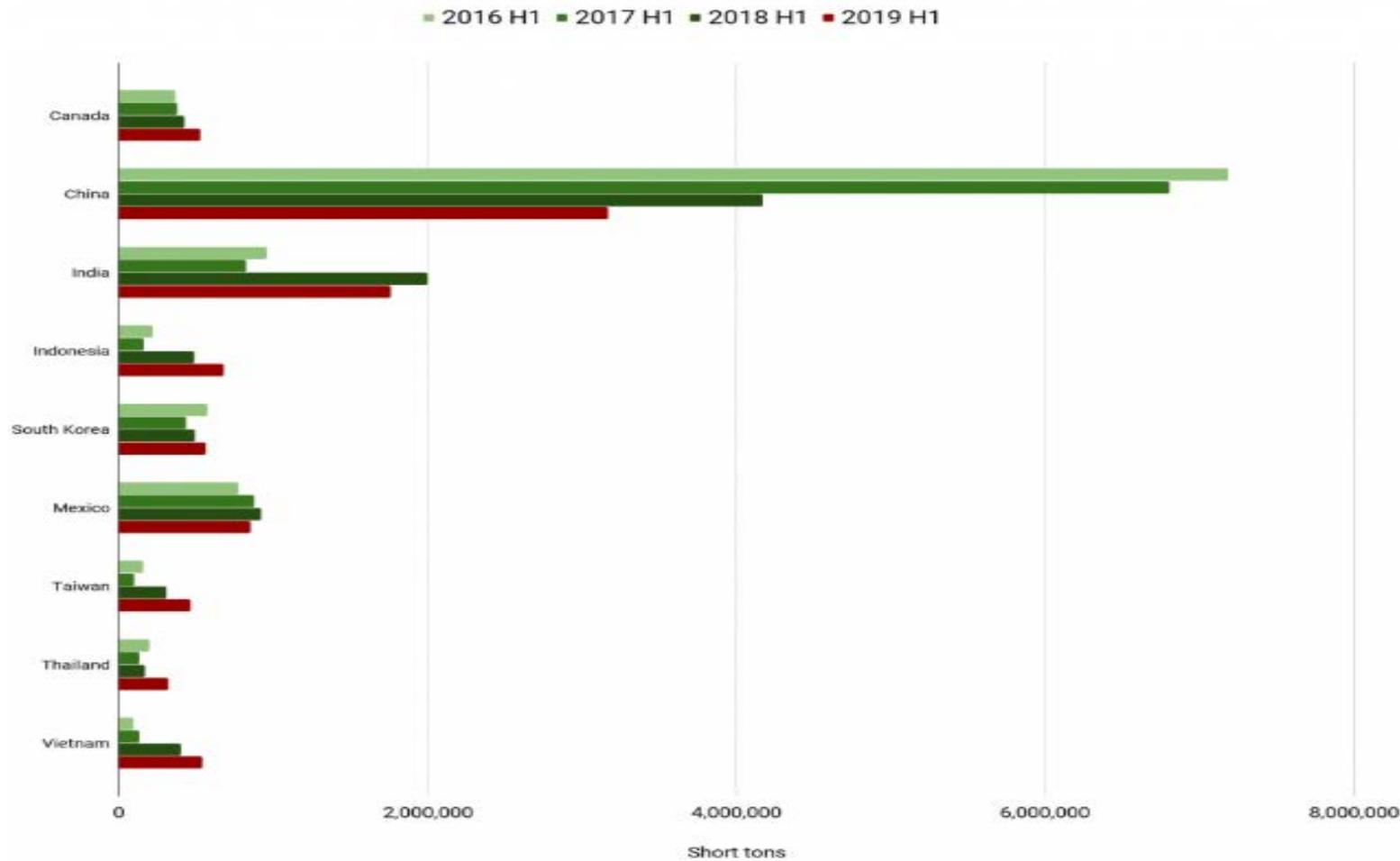
© Resource Recycling, Inc.



Source: Resource Recycling

# Impact on Paper Exports

U.S. scrap paper exports by country, January-June, 2016-2019 (short tons)

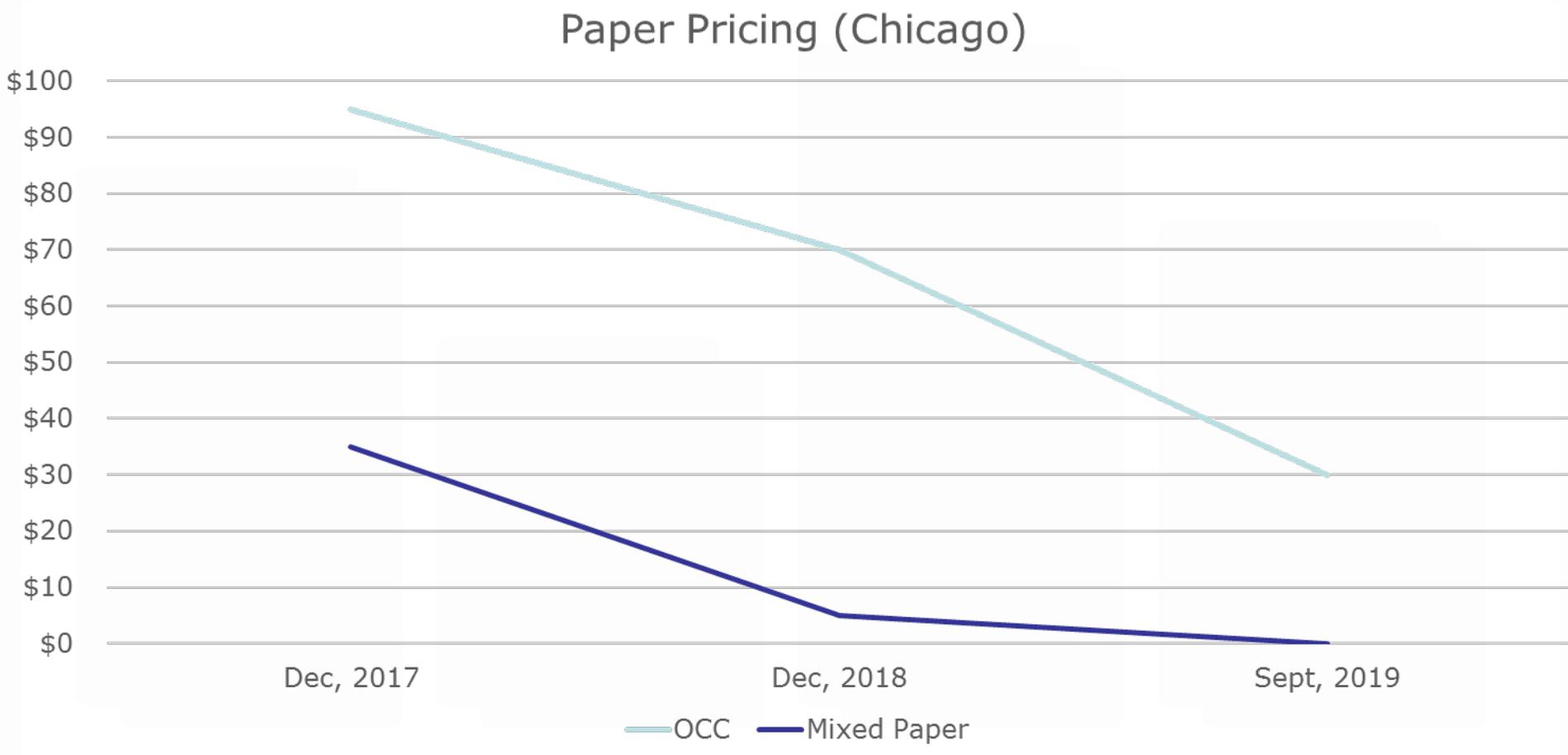


# Domestic Pricing/Value of a Ton

- Fiber grades are facing historic low prices
- During 2019:
  - OCC decreased from \$70 to \$30/ton
  - Mixed paper decreased from \$5 to \$0/ton (may go negative)
  - UBC/Aluminum \$1,100-\$1,300/ton
  - Steel/tin \$35-\$40/ton
  - PET decreased from \$330 to \$245/ton
  - HDPE natural from \$840 to \$430 to \$520/ton
  - HDPE color decreased from \$400 to \$220/ton
- Composite value of a ton of recycling has fallen from \$70-90 in 2017 to \$30-50 in 2019
- Present mixed commodity value \$25-\$35/ton
- 2x-3x value in processing costs

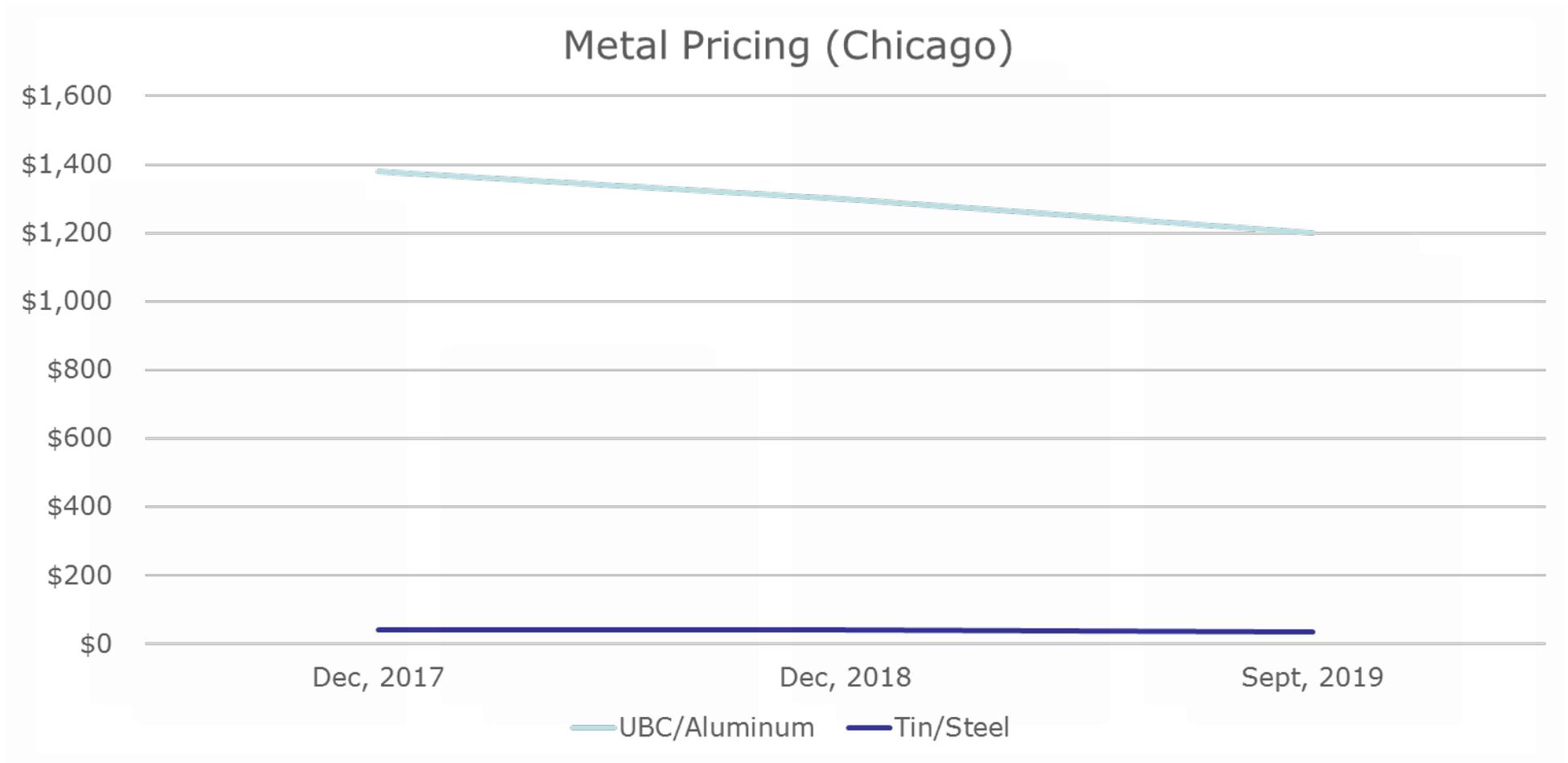


# Paper Pricing Trends



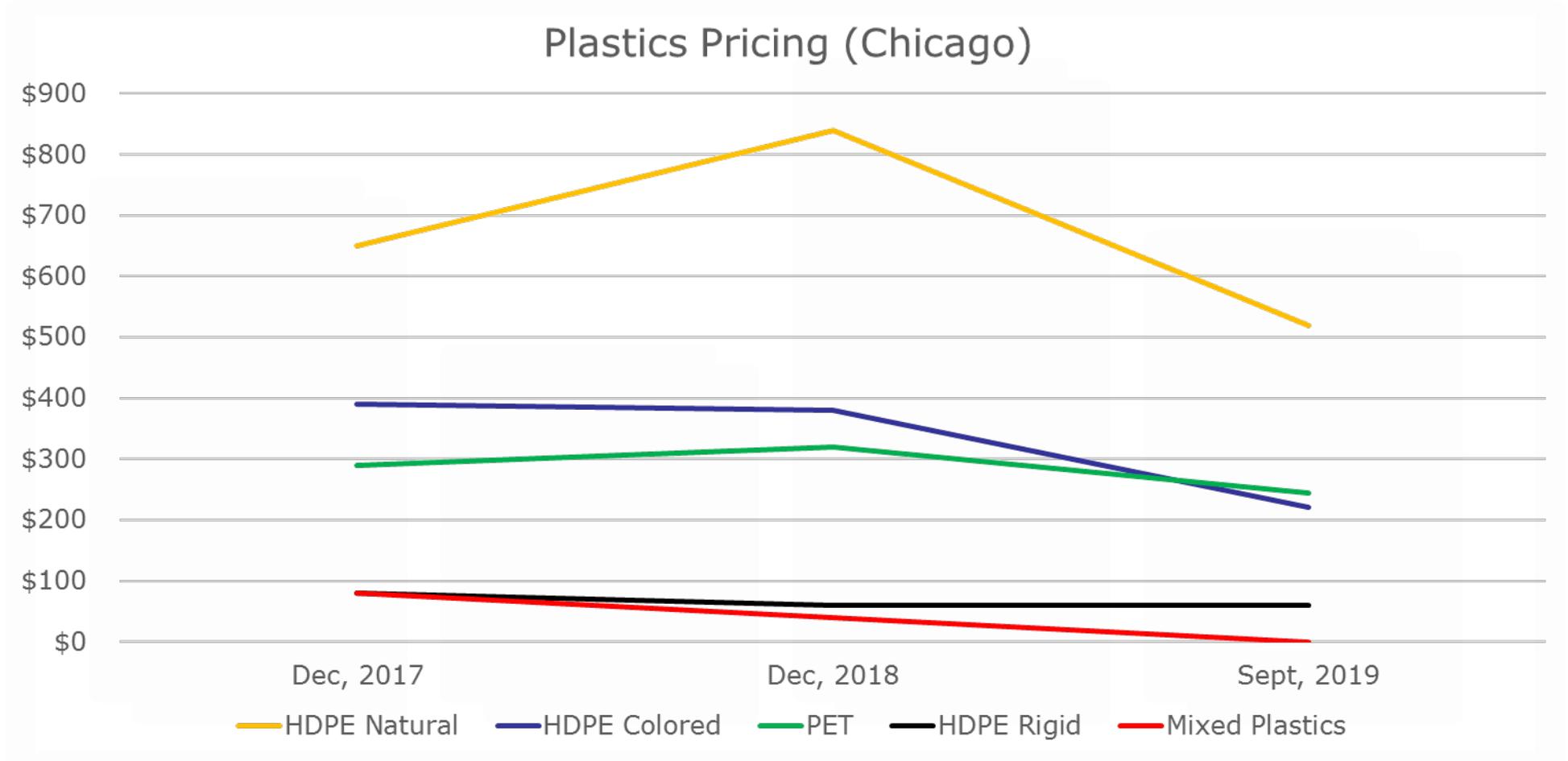
Source: PPI Pulp & Paper

# Metals Pricing Trends



Source: Secondary Materials

# Plastics Pricing Trends



Source: Secondary Materials

# Bigger impact than China? Basal Convention

- Basal Convention went into effect in 1992
- Agreement between nearly 200 countries
- US has signed, but not ratified agreement (non-voting)
- Goal to limit trade in hazardous wastes, especially between developed and developing countries
- Last year, Norway proposed to add plastic scrap to the Basal Convention, citing marine litter concerns



Source: Resource Recycling



## Basal Convention (cont.)

- Impact is not entirely clear, but expected to significantly decrease plastic exports
- Plastics to non-developed countries expected to stop
- Plastics to developed (OECD) countries may be able to continue
- Also unclear if single resins could be exported, and in what form (bottle, flake, pellet) and what “almost free from contamination and other types of wastes” means
- Effective date: Jan. 1, 2021



# Enough Discouraging News...



While export markets are decreasing, there IS significant domestic infrastructure development... Especially in fiber



# WI Mill Infrastructure Development

← ND Paper (Nine Dragons), Biron ↗

name  
ND Paper (Nine Dragons), Biron

description  
Location: Biron, Wis.

Investment type: New line and paper machine conversion to containerboard

Announced: October 2018

Completion date: Coming on-line through October 2020

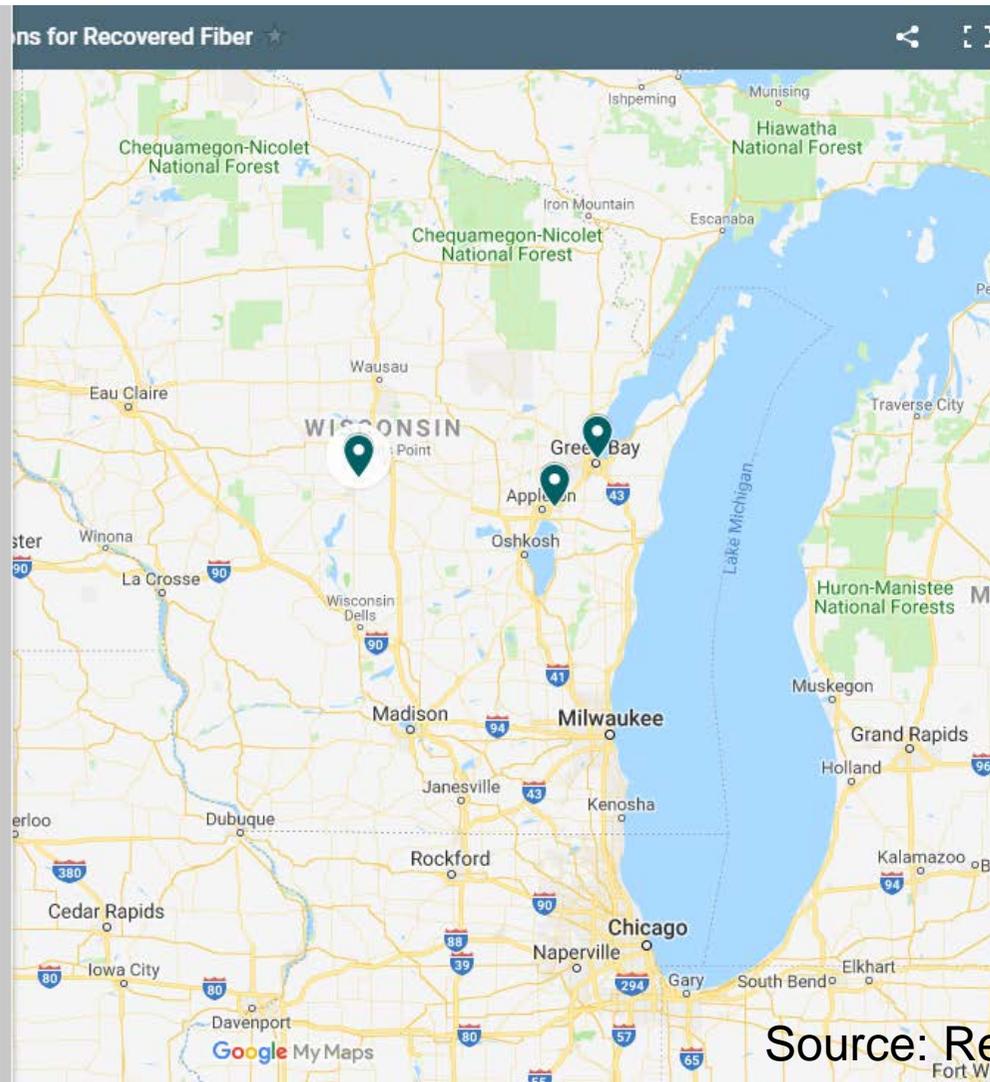
Production details: 2 new recycled pulp production lines, 1 paper machine producing corrugating medium and linerboard

Feedstock: OCC/mixed paper

Output tonnage: 2,100 tons per day recycled pulp ( ~760,000 tons per year, estimated)

Investment figure: \$189 million (includes conversion)

More information: <https://resource-recycling.com/recycling/2018/10/16/nine-dragons-to-produce-recycled-pulp-at-us-mills/>



Source: Resource Recycling

# WI Mill Infrastructure Development

← Midwest Paper

Midwest Paper

description  
Location: Combined Locks, Wis.

Investment type: Conversion from all printing/writing grade production, to mostly containerboard production

Announced: Mid-2018

Completion date: Up and fully running as of July 2018

Production details: 2 corrugated paper machines, 1 printing/writing grades paper machine

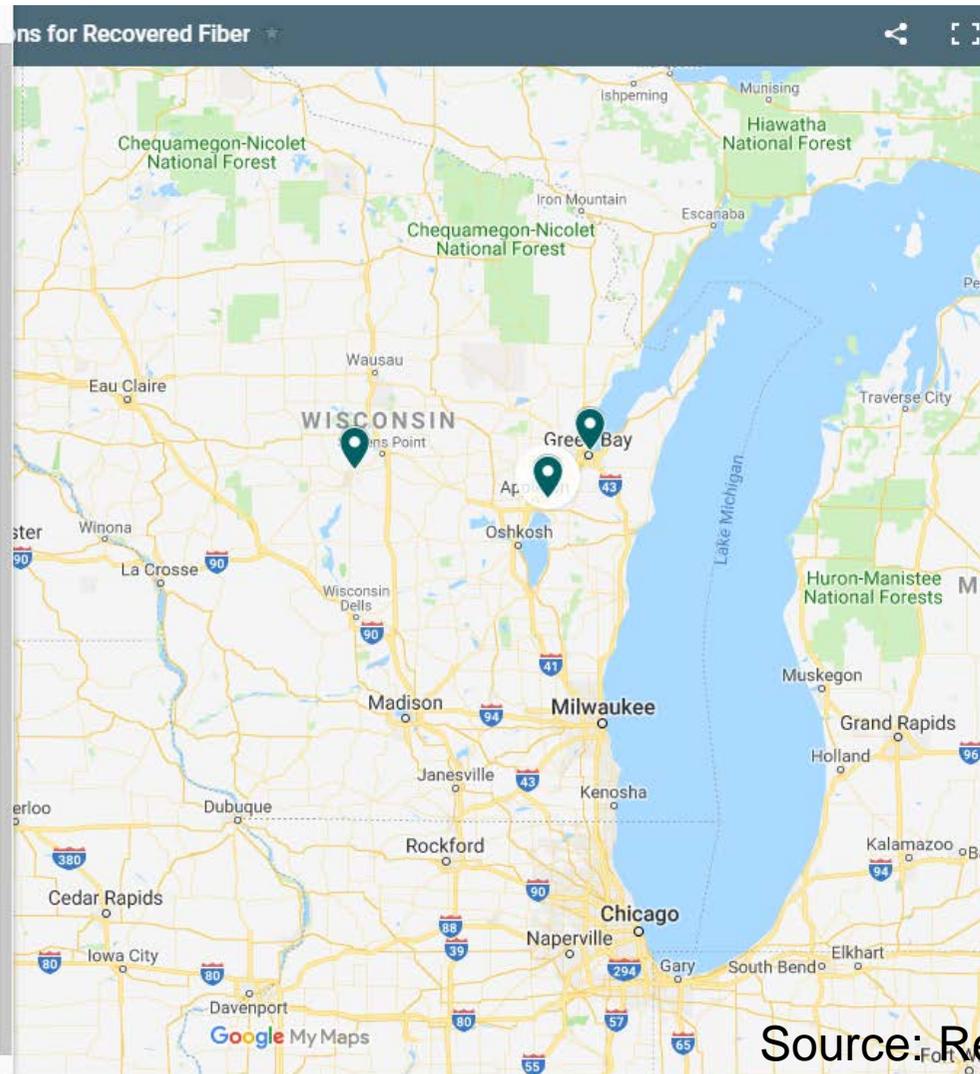
Feedstock: Primarily OCC

Output tonnage: 400,000 tons-per-year capacity

Investment figure: at least \$42 million

More information:  
<https://www.postcrescent.com/story/news/2018/07/18/midwest-paper-group-formerly-appleton-coated-producing-brown-paper/789722002/>

Notes: Includes recycled fiber pulping system



Source: Resource Recycling

# WI Mill Infrastructure Development

← Green Bay Packaging

name  
Green Bay Packaging

description  
Location: Green Bay, Wis.

Investment type: New mill to replace existing mill

Announced: June 2018

Completion date: Planned for Spring 2021

Production details: 1 paper machine producing linerboard and corrugated medium

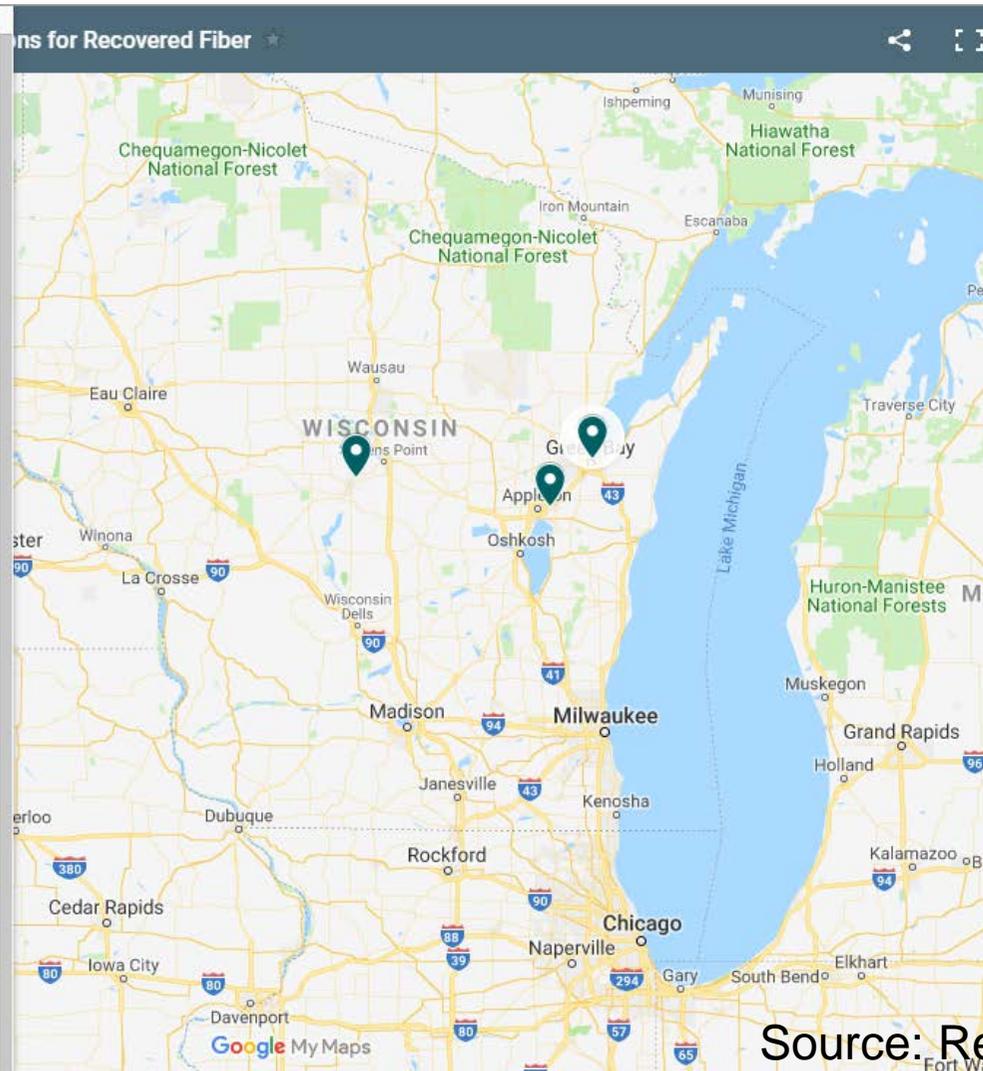
Feedstock: OCC/mixed paper

Output tonnage: 685,000 tons (445,000-ton increase over existing mill)

Investment figure: \$500 million

More information: <https://resource-recycling.com/recycling/2018/06/26/major-midwest-mill-to-use-mixed-paper-and-occ/>

Notes: Includes recycled fiber pulping system; Voith paper machine, stock prep system



Source: Resource Recycling

# Other Midwest Infrastructure Development

- Pratt Industries, Wapakoneta, OH
  - Completion date: By end of 2019
  - Feedstock: OCC/mixed paper
  - Output tonnage: 396,000
  - Investment: \$210-310M
- Verso Corporation, Duluth, MN
  - Completion date: 1<sup>st</sup> quarter 2020
  - Feedstock: OCC
  - Output tonnage: 48,000
  - Investment: undisclosed



# Other Domestic Infrastructure Development

- Phoenix Paper, KY; OCC/mixed; 2020; 700K
- ND Paper, WV; SOP/news; 2020; 240K
- Cascades, VA; OCC/mixed; 2021; 440K
- CorrVentures, NY; OCC; 2021; 300K
- ND Paper, ME; OCC/mixed; 2020; 480K
- International Paper, AL; 2020; 450K
- Crossroads Paper, UT; 2022; 350K
- North Pacific Paper, WA; ?; 400K
- Port Townsend, WA; 2020; 285K
- Bio Pappel, WA; 2020; 240K
- And... 2 additional mills in Mexico



# Questions?

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# WI's Recycling Requirements- MRFs & RUs

Material Recovery Facility (MRF)  
Stakeholder Meeting  
October 7<sup>th</sup>, 2019

Jennifer Semrau, Waste Reduction & Diversion Coordinator  
Bureau of Waste & Materials Management



# MRF General Requirements (s. NR 544.16)

Material Recovery Facilities used as part of an effective recycling program:

- [NR 544.16\(1\)\(a\)](#) (a) Operate and maintain the facility in a nuisance-free and environmentally sound manner.
- [NR 544.16\(1\)\(b\)](#) (b) Maintain records to verify that not less than 75% of the volume of recyclable materials accepted were recycled or transported from the facility within 12 months of receipt at the facility, unless otherwise approved by the department.
- [NR 544.16\(1\)\(c\)](#) (c) Maintain recyclable materials in marketable condition.



# MRF Requirements (s. NR 544.16)

Initial and annual self-certifications (by 3/30)

- Annual self-certification of conformance to operation submitted in initial self-certification
- Inventory of recyclable materials by category in tons of processed material
- Residual tonnage
- Written notification to DNR and RUs of planned disruption of service of more than one week at least 60 days in advance
- As soon as practicable of unplanned disruption of service of more than one week



## Invalidation of Self-Cert (s. NR 544.16)

- Failure to submit on a timely basis or knowingly falsifying the information on self-certification or renewals
- Storage of recyclable materials in wetlands or floodplain
- Storage of recyclable materials outdoors in a manner that renders them unmarketable
- Failure to operate the materials recovery facility in a nuisance-free and environmentally sound manner



# Responsible Unit (RU) Requirements

- Must have a collection and processing system for all "Table 1" materials
  - Aluminum, steel/bi-metal, glass, plastic #1 & #2 containers
  - Cardboard, newsprint, magazines, office paper
- Must use one or more MRFs self-certified under s. NR 544.16 (or seek approval for an "alternative processing system;" none presently approved)
- So while a MRF is not required to accept all Table 1 materials, RUs need to work with processing facilities which do so



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