



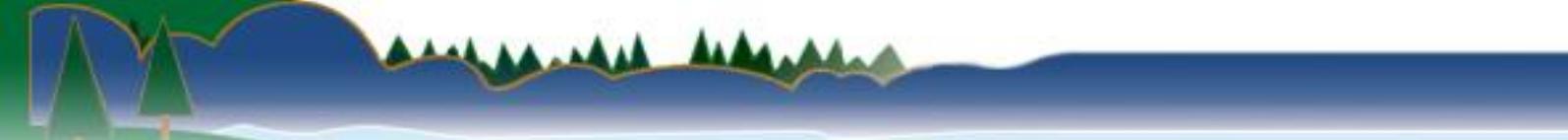
Update on International & Domestic Recycling Markets

Council on Recycling Meeting
December 3, 2019

(As delivered at the Material Recovery Facility [MRF]
Stakeholder Meeting, October 7th, 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



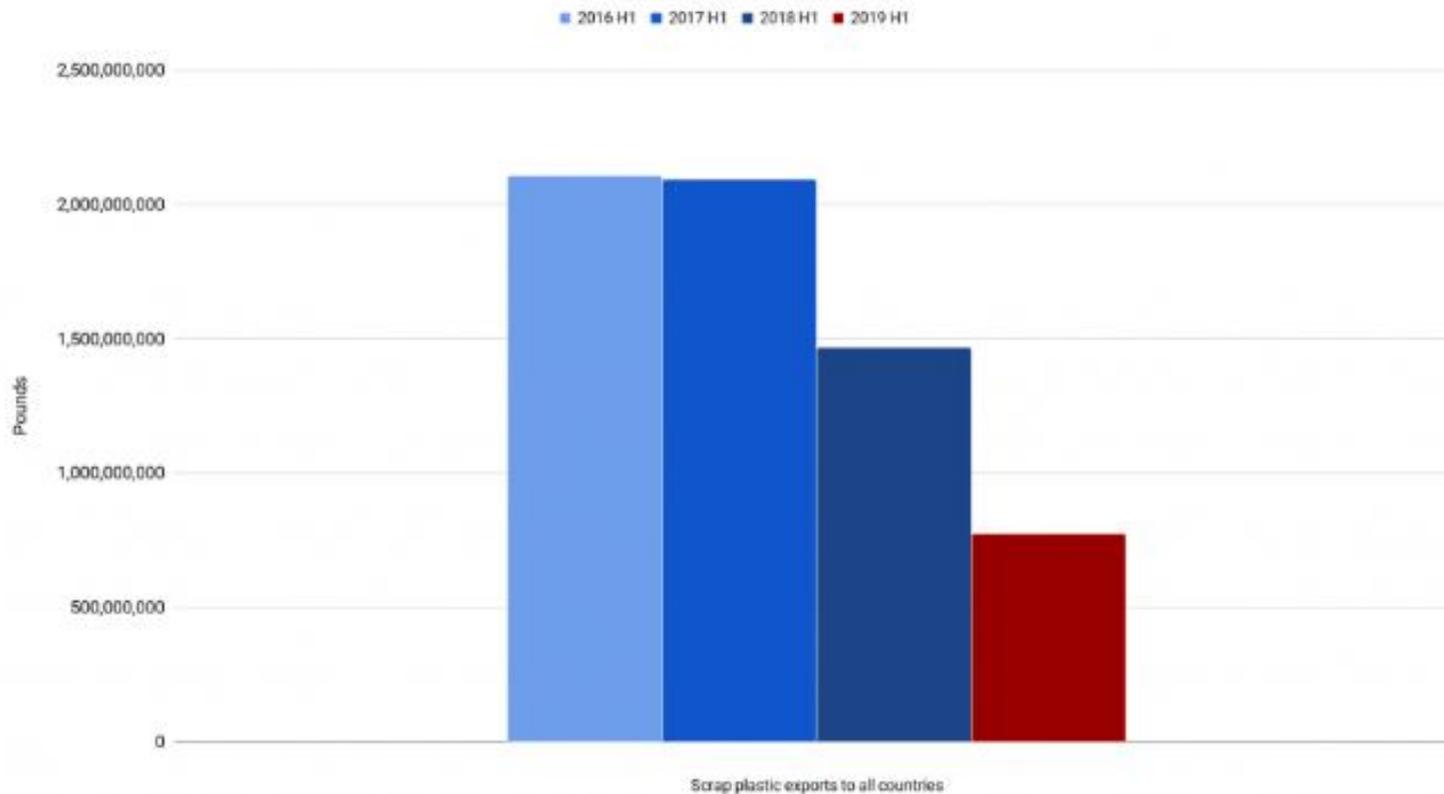
2019-Present

- 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)



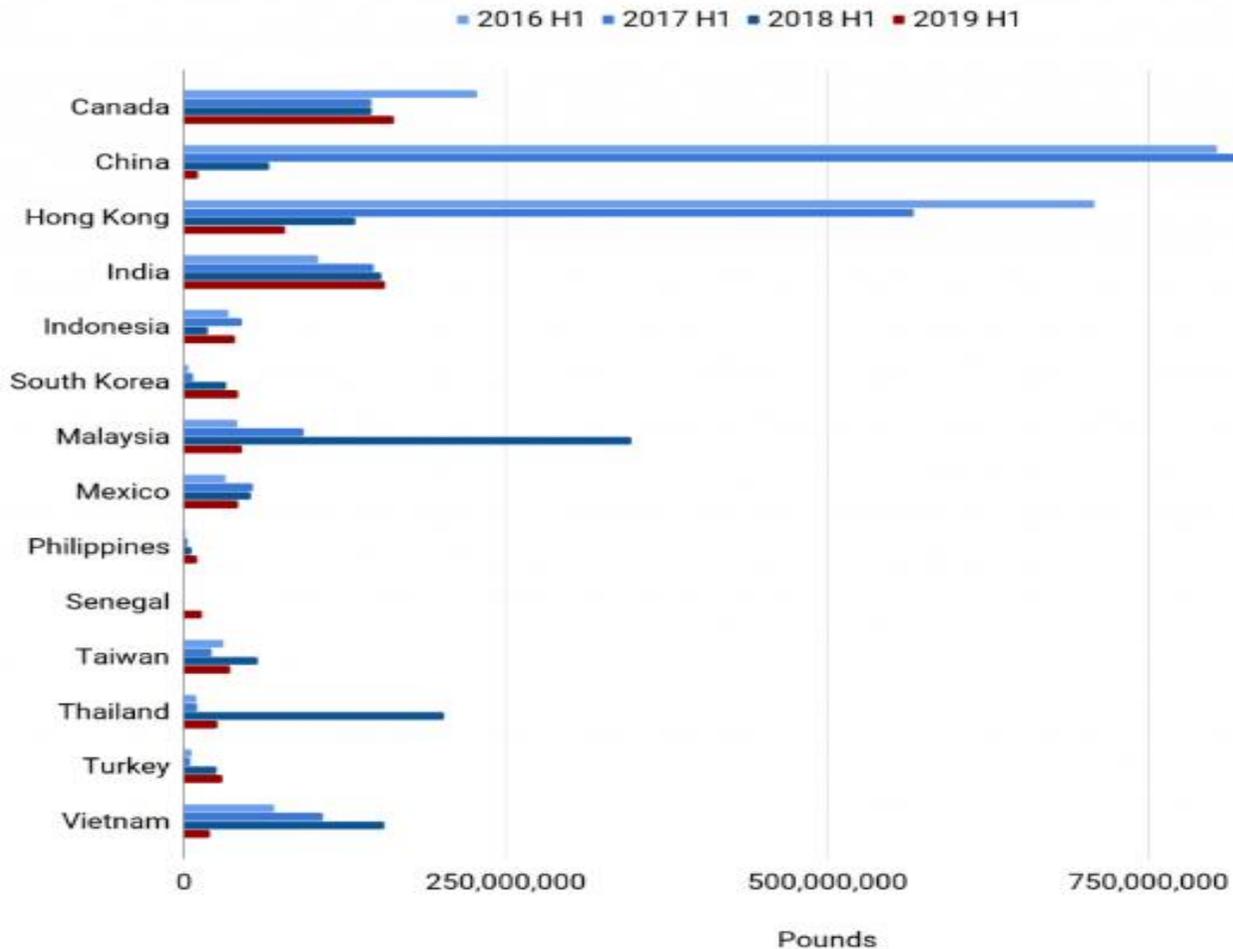
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Source: Resource Recycling

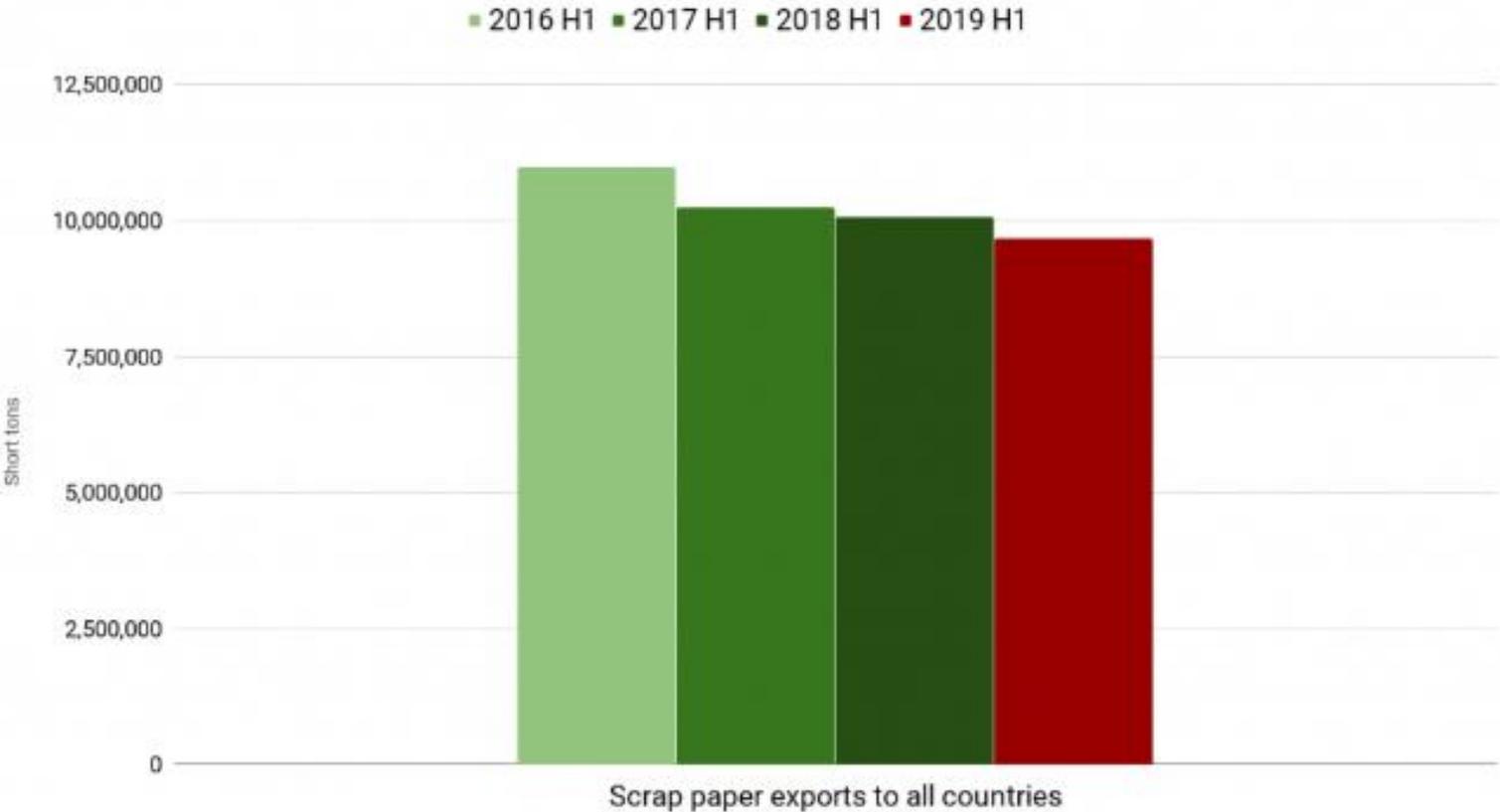
Impact on Plastics Exports

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)



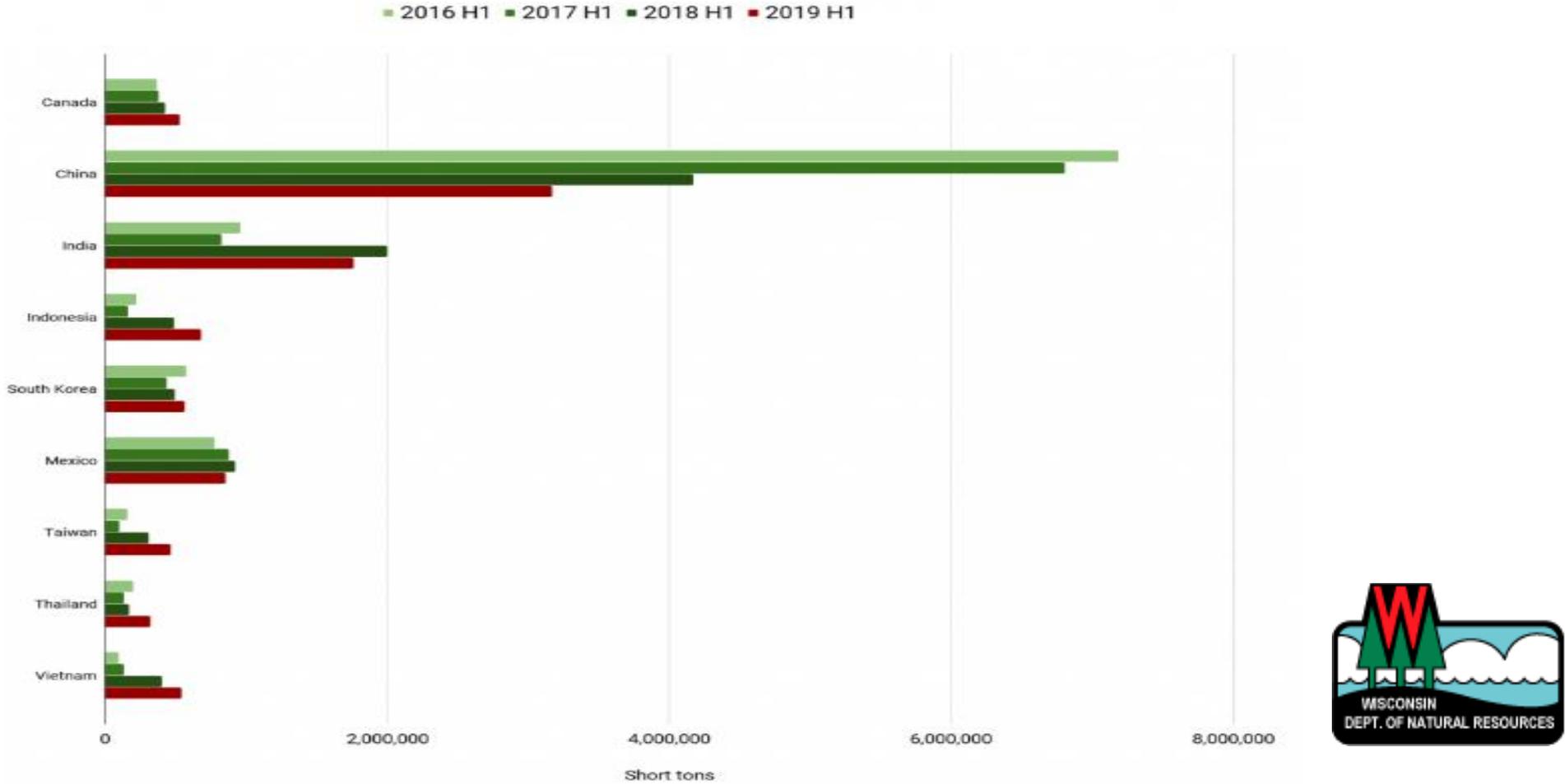
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Source: Resource Recycling

Impact on Paper Exports

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

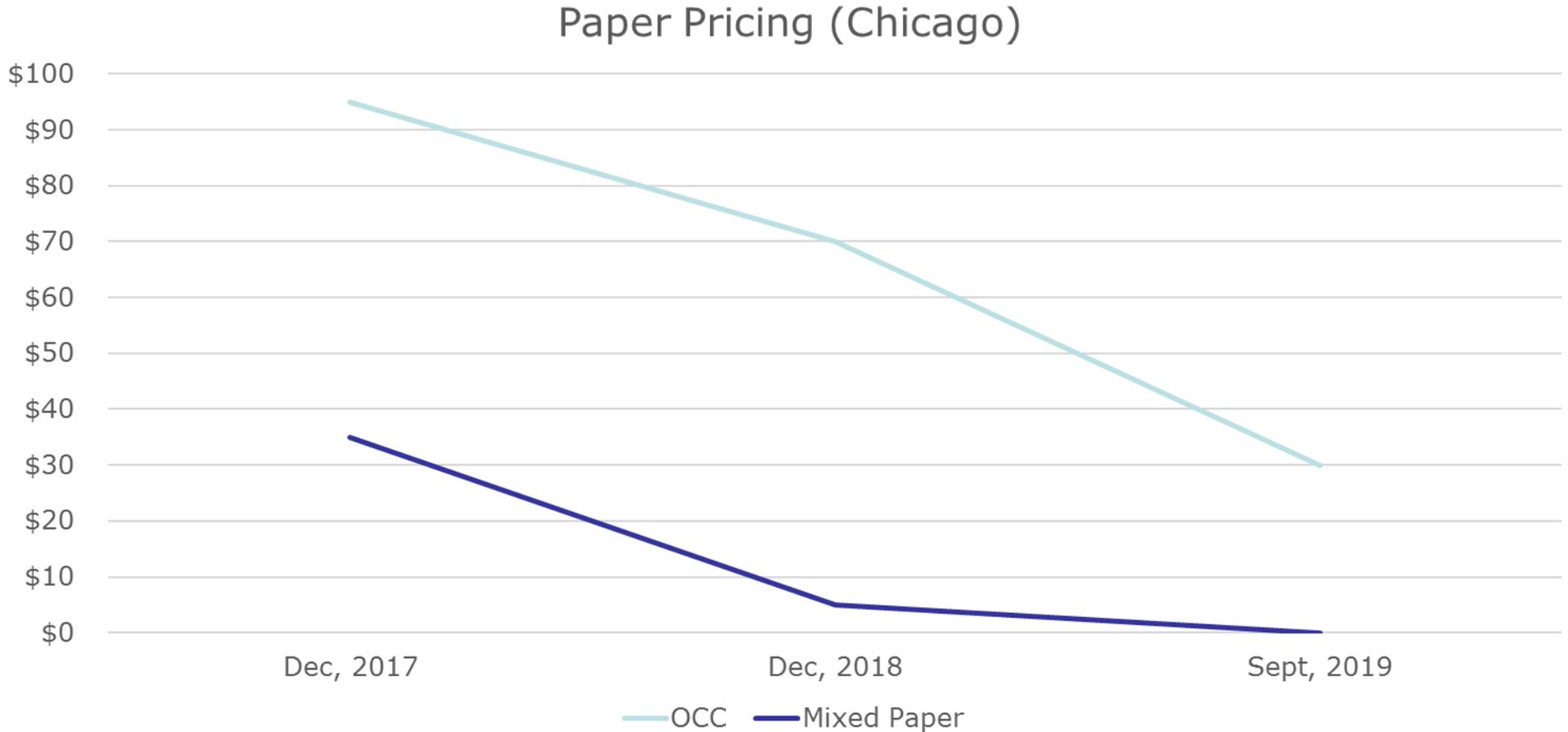


Domestic Pricing/Value of a Ton (Sept)

- 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



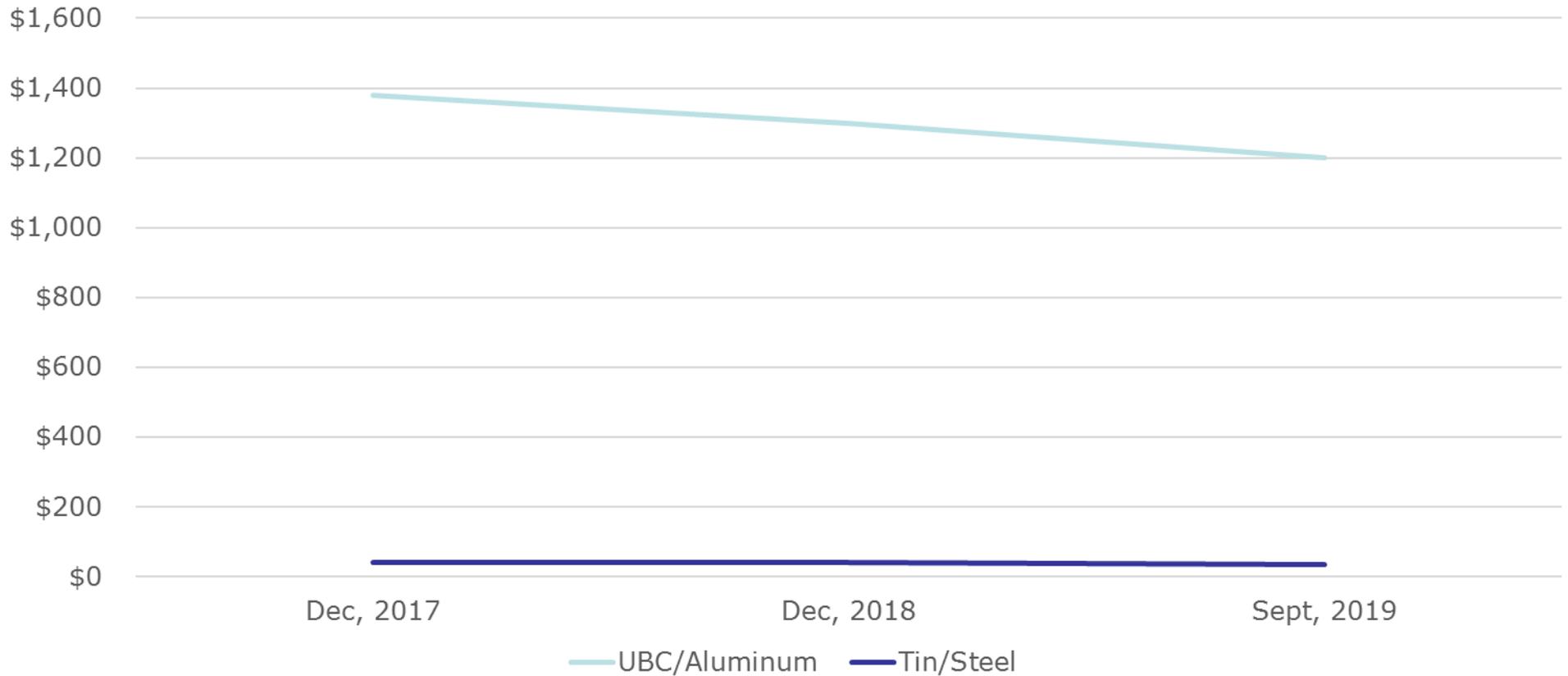
Paper Pricing Trends



Source: PPI Pulp & Paper

Metals Pricing Trends

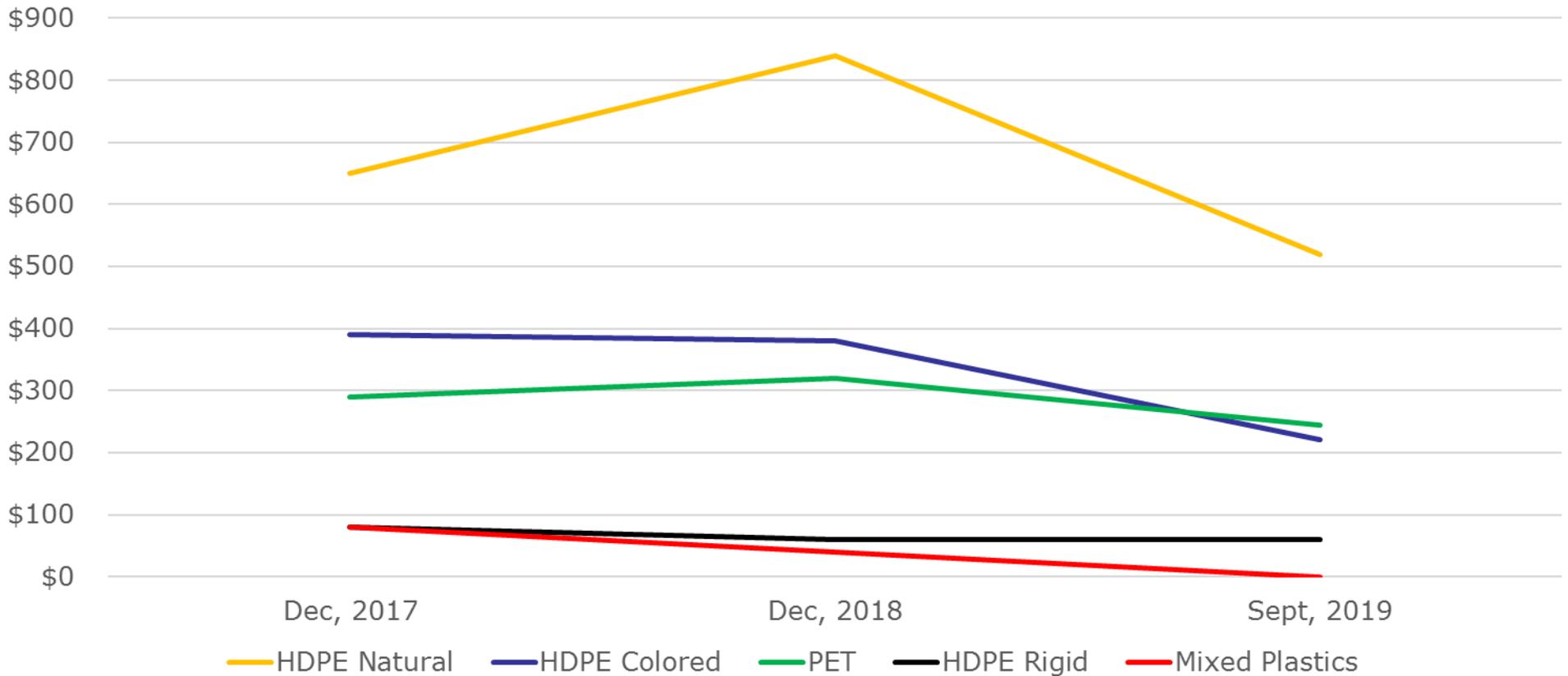
Metal Pricing (Chicago)



Source: Secondary Materials

Plastics Pricing Trends

Plastics Pricing (Chicago)



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

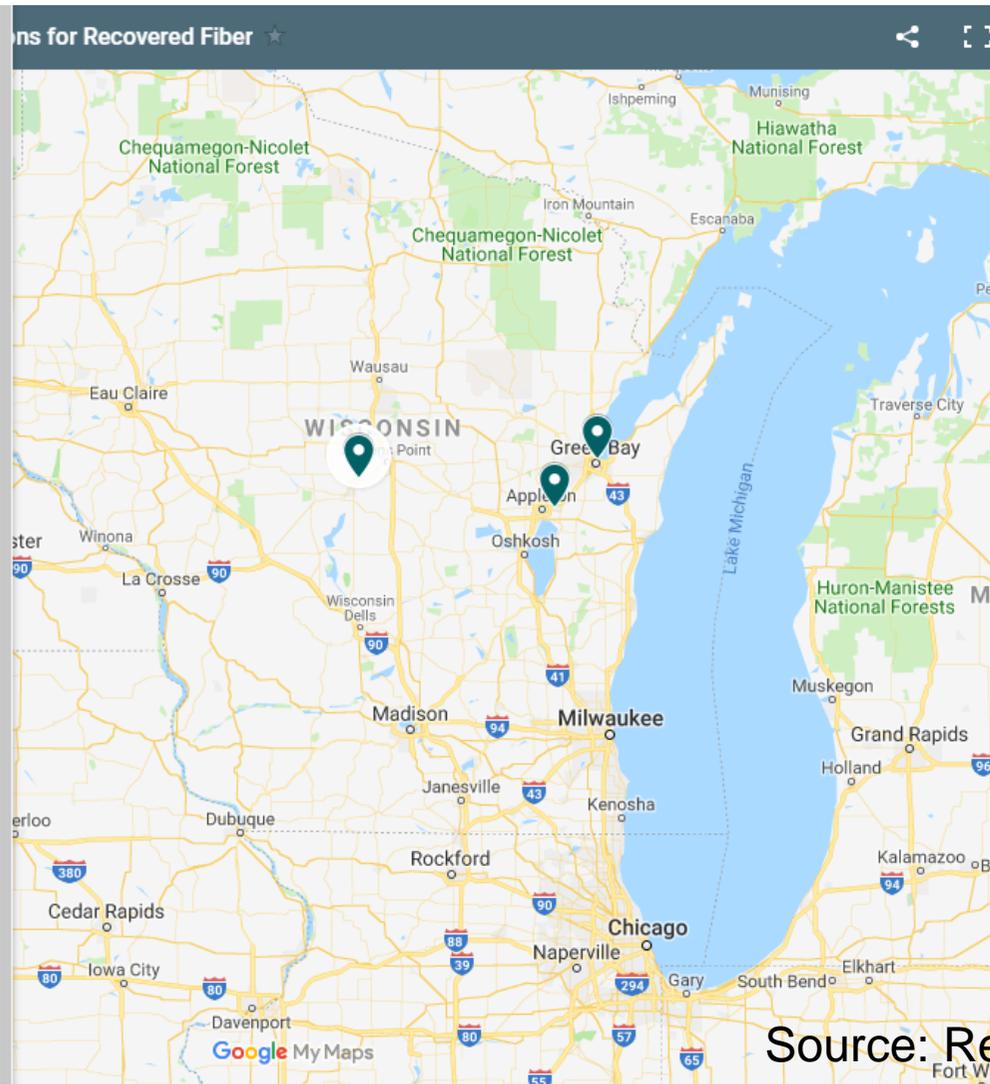
Production details: 2 new recycled pulp production lines, 1 paper machine producing corrugating medium and linerboard

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

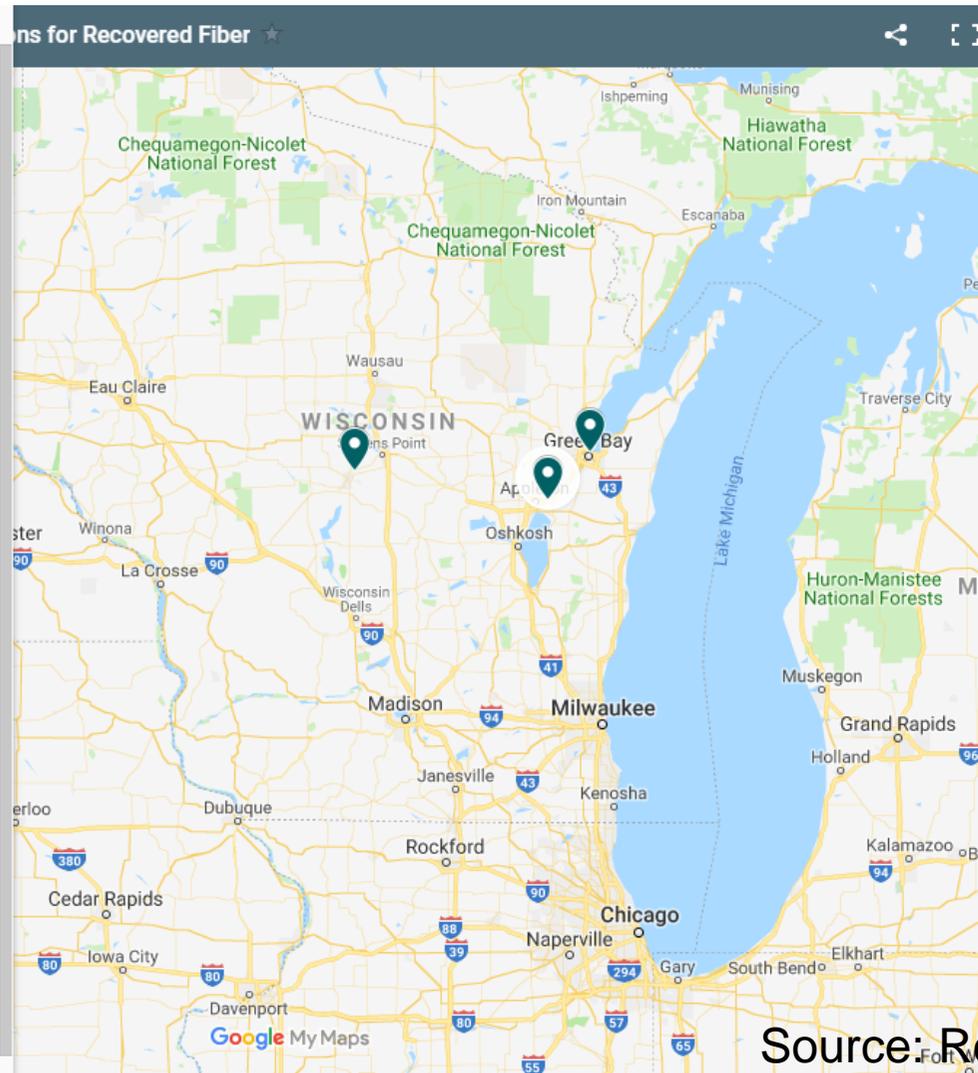
Feedstock: Primarily OCC

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

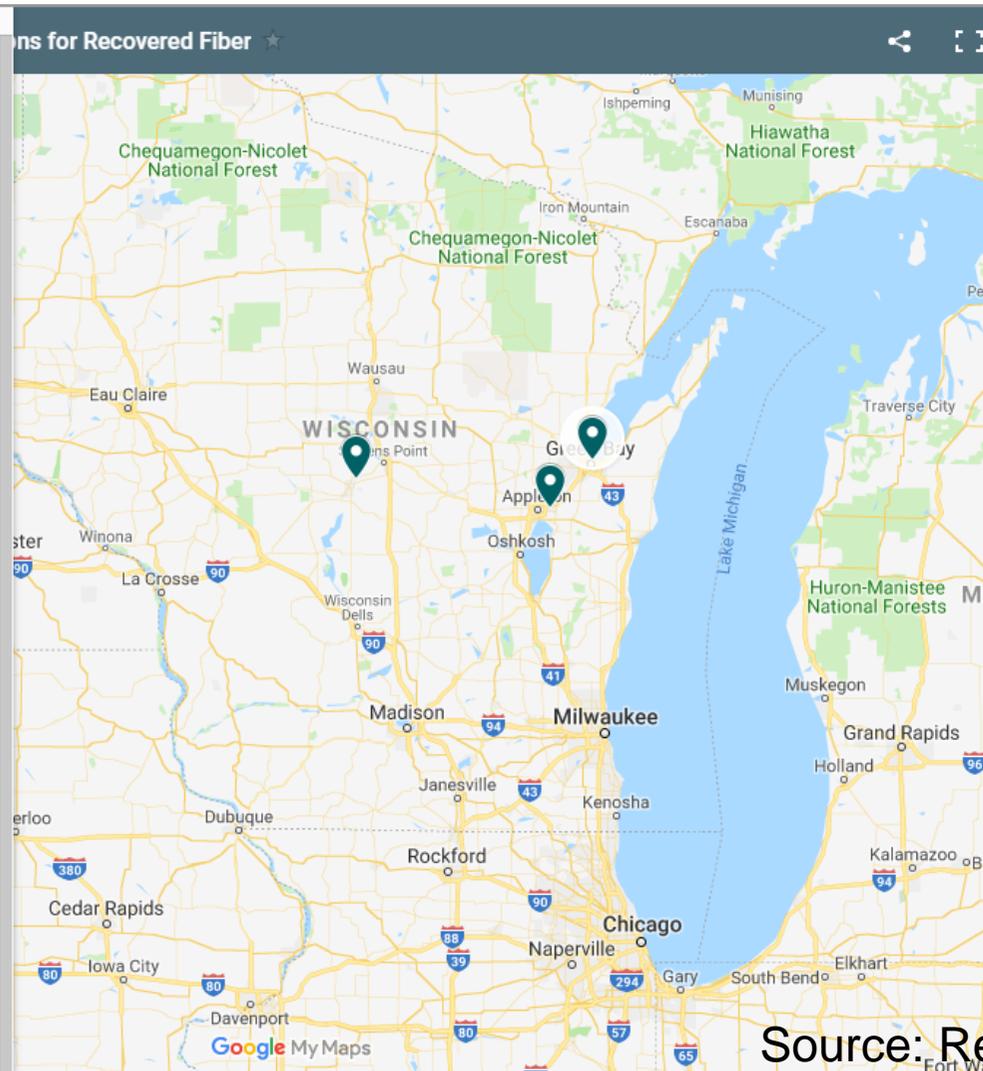
Feedstock: OCC/mixed paper

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: 1st 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; OCC; 2020; 450K
- Crossroads Paper, UT; OCC/mixed; 2022; 350K
- North Pacific Paper, WA; OCC/mixed; ?; 400K
- Port Townsend, WA; 2020; OCC; 285K
- Bio Pappel, WA; 2020; OCC/mixed; 240K
- And... 2 additional mills in Mexico





Questions?

Jennifer Semrau

Waste Reduction & Diversion Coordinator

(608) 267-7550

Jennifer.Semrau@wisconsin.gov

