

COMMODITY: Mixed Paper (MP, ISRI Grade #54)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM HIGH VOLATILITY</p> <p>COVID-19 Response</p> <ul style="list-style-type: none"> Supply of recovered paper constricted from lack of commercial activity. MP can be substituted for OCC. Demand for containerboard had a sharp increase in March, continuing through April, due to surge in online consumption. Movement is good but oversupply means price remains poor (\$0 to -\$7). Persistent oversupply of MP has superseded any demand increases. Reports that virus can live on hard surfaces have closed down hand sorting MRFs and drop off centers. This has now been refuted. Pricing begins to fall in mid-July 2020 on this grade. <p>SHORT TERM FORECAST: MP may see some modest increases in coming months if OCC continues to climb.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> Prior to COVID-19, long-term oversupply from loss of China consumption of over 4 MM. Asia (outside China) is developing New mills making pulp for China will consume 1-2 MMT but other 1.5 MMT will be oversupply without more market base. <p>LONG TERM FORECAST: Market will recover in 3 to 4-years from increasing demand with dwindling supply and domestic mill capacity increase. Biggest concern is that lack of commercial paper consumption (disposable towels, etc.) is causing long-planned projects to be delayed.</p>	<ul style="list-style-type: none"> MP has always historically flirted with oversupply National sword eliminated the most significant market for this grade resulting in extreme oversupply. Exports fell precipitously since announcement in 2017 (from 5 MMT to 1 MMT/year) and high oversupply ensued, leading market to bottom out. This remains the current condition. Many programs have removed mixed paper from their programs or are landfilling bales of mixed paper (1 MMT/year). Most U.S. mills were not geared to clean and utilize this grade. Contamination is the primary concern for mills and requires specific mill upgrades to manage. High yield loss and tipping fees of residual affect economics as well. Current sub-zero market conditions have led many mills to develop strategies to incorporate mixed furnish. Increasing OCC content in MP bales makes it more attractive. 	<ul style="list-style-type: none"> Bale pricing jumped due to paper panic in April and May. Loss of domestic recyclable feedstock from commercial sources have led to best demand since China ban, approx. \$15 per ton. Very Short term, prior below \$0 since 2018. Exports lower in 2019 from 2018 Alternative export destinations—Indonesia, India, Vietnam, Thailand, Malaysia - have begun limiting or banning import of mixed paper bales due to contamination concerns. Growing export markets include Laos and Cambodia. Domestic use up 1 MMT because of mill furnish economics (low/negative price). 2.5 MMT oversupply remains Domestic mill investment projects are starting to come online to utilized MP and OCC. Some collection programs have dropped mixed paper. Containerboard and recycled pulp strong going into fall 2019 but was flat through the holiday season in 2019 despite growing online sales. This appears to be linked to the growing use of substitutes (flexible shipping pouches). 	<p>Fiber Mills using MP</p> <ul style="list-style-type: none"> Pratt is largest consumer of MP by far – uses >50% MP in containerboard: <ul style="list-style-type: none"> Conyers, GA Shreveport, LA Small pulp sub mills Others using lower amounts of MP <ul style="list-style-type: none"> Greif, Austell, GA Sonoco, Hartsville, SC Sonoco, Newport, TN Essity, Cherokee, AL <p>Export Ports</p> <ul style="list-style-type: none"> Tampa Ft. Lauderdale Jacksonville <p>Note: Exports are limited to India and Mexico. India is not shut down due to virus.</p>

COMMODITY: Sorted Residential Papers and News (SRPN ISRI Grade #56)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM COVID-19 Response: Many mills consuming SRPN shut down.</p> <ul style="list-style-type: none"> • Non-essential enterprise. • GDP down ~ 35%, recovery estimates late Q4. • Daily newspapers are slowing or shut down. <p>• SHORT TERM FORECAST: All sorted grades, including SRPN, if it can be sorted to 2% contamination or less, see increases in coming months due to supply shortages both domestic and export.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> • Prior to COVID-19, SRPN was in balance for supply and demand because most MRFs were converting to just sorting MP. However, SRPN pricing has separated from mixed with good market balance. <p>LONG TERM FORECAST: True ONP (SRPN, #8) will have a differential of \$20 or more compared to mixed paper because of lower contaminants from more sorting and because it can be used in groundwood applications. <i>All sorted MRF materials will have a much stronger market than mixed MRF materials, including SRPN.</i></p>	<ul style="list-style-type: none"> • Market shrinking for SRPN/ONP. Several Newspaper mills have closed in the last 6-months. • Loss of newsprint demand limits SRPN towards that application. • Treated as “mixed paper” by export countries but is valued due to more intense sort. • Contamination is an issue coming from MRFs. • National Sword eliminated the most significant market for this grade resulting in domestic oversupply. • Now being used as a sorted substitute into all groundwood printing and disposable applications. • Most U.S. mills were not geared to clean and utilize this grade or have converted away from SRPN. • Over the long term, supply declining due to e-commerce, commercial demand (COVID), and communication. 	<ul style="list-style-type: none"> • Paper Panic of April/May has improved price of this grade to near \$30. Any sorted grade fetching short term premiums due to loss of commercial market in March/April. • Bale pricing dropped 46% since start of 2019 (32.50 in Jan 2019 down to \$17.50 in August 2019). Has been steady until April. • Exports for all fiber, including SRPN lower in 2019 from 2018. • Alternative export destinations—Indonesia, India, Vietnam, Thailand, Malaysia - have begun limiting or banning import of mixed paper bales due to contamination concerns. • Growing export markets include Laos and Cambodia. • Domestic mill investment projects are starting to come online to utilize MP, SRPN and OCC. • Some collection programs have dropped mixed paper. • After initial oversupply due to National Sword, demand has returned for SRPN and price is significantly more than mixed paper. 	<p>Fiber Mills using MP Furnish</p> <p>Florida SRPN goes to remaining ONP mills on east coast or is exported, Palm Beach is a good example.</p> <ul style="list-style-type: none"> • Others using lower amounts of MP <ul style="list-style-type: none"> • Greif, Austell, GA • Sonoco, Hartsville, SC • Sonoco, Newport, TN • Essity, Cherokee, AL <p>Export Ports</p> <ul style="list-style-type: none"> • Tampa • Ft. Lauderdale • Jacksonville



COVID-19 July 2020 Update on Mixed Paper (MP, ISRI Grade #54) Sorted Residential Papers and News (SRPN ISRI Grade #56)

- July 1 MOODY's WARNING- pulp and paper (P&P) grades oversupply will either limit price recovery or drive prices lower over the next 12 months
- Mid-March to mid-May: Best two months for SRPN and Mixed Paper in two years masked weaknesses and rapid evolution away from graphic/PW papers. Panic buying now over
- SOP drops over \$30 in June, similar price drop in July
- Exports down 80% down from 2017 (14% in 2020)
- Lack of quality grade supply = virgin paper increases worldwide
- June 2020- Mills are taking downtime, closing (Verso) & or signing longer-term contracts One reason- spot was too high for sorted grades and subs

COMMODITY: Old Corrugated Cardboard (OCC, ISRI Grade #11)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM COVID-19 Response: Sharp increase in demand and loss of supply for containerboard in March causes panic buying. Some orders \$65 over high side Southeast in March and April, this peaked in late May at over \$100 per ton on the spot market. This is due to surge in online grocery delivery, and medical, sanitary and PPE Supplies coupled with loss of commercial OCC. E-commerce orders up 62% in March. Pricing began falling (over \$60 per ton) in June/July, 2020.</p> <p>SHORT-TERM FORECAST: Supply side losses will hamper any price improvement for the next six months.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> E-commerce demand drove new mill projects using 50-85% OCC. Panic buying will likely weaken but not disappear as the outbreak comes under control. Q4 2019 saw decoupling of online sales and OCC demand due to increase in flexible shipping pouches. Not a likely substitute for online grocery sales. <p>LONG TERM FORECAST: OCC will have increased demand for containerboard but much less than predicted. Markets will decline or remain at low levels due to lack of commercial OCC applications in retail.</p>	<ul style="list-style-type: none"> OCC tracks consistently higher in the SE than the national average. Downturn in export following National Sword has eroded the market for OCC, especially from MRFs. Source separated #12 OCC is a premium grade with higher demand. Import to China will continue decline leading towards a planned ban on all fiber by 2021. Import restrictions by alternative markets, such as Indonesia and India will further challenge export, but China's need for high quality N.A. OCC will make MRF-sourced attractive. OCC functions in relation to GDP, but since 2017 has been more affected by trade restrictions and substitution (plastic on the supply side and mixed paper on the mill side). Sustained economic downturn and reduced consumption is another challenge facing this grade. The market share of online commerce is increasing. Historically this has had a positive effect on demand. Domestic expansion of mills designed for recycled furnish have are now starting to come online with new demand. 	<ul style="list-style-type: none"> Since December 2019, OCC began a run-up to over \$125 per ton currently. Shipping to households doubled and better, and a loss of commercial OCC has made residential OCC very important to the supply chain. Fiber export to China was down 39% in 2019 compared to 2018. It is expected to lower again in 2020 leading towards an intended ban of all fiber imports in 2021. 2019 consumption of OCC declined shifting down 3% from December 2018. In part due to shift in Amazon packaging towards flexibles. OCC supply down in 2nd half of 2019 from less consumption plus MRF closures / program suspension. Pricing trends followed decline dropping 60% of value from January to December 2019. February 2020 showed bale price rising for the first time since June 2018 40% hike in March due to surge in demand stemming from COVID-19. 3.2 MMT of new pulp and recycled fiber capacity announced since end of 2018, some now put on hold. China's need for highly sorted #12 grows demand for this grade. 	<p>Top Fiber Mills using OCC Furnish</p> <ul style="list-style-type: none"> WestRock, Jacksonville, FL Georgia Pacific, Monticello, MS PCA, DeRidder, LA International Paper, Mansfield, LA Pratt, Conyers, GA <p>Export Ports</p> <ul style="list-style-type: none"> Tampa Ft. Lauderdale Jacksonville

COVID-19 July 2020 Update on Old Corrugated Cardboard (OCC, ISRI Grade #11)

- July 1 pricing was down as much as 50% depending upon region
- In March 2020 production of containerboard was up 10-20% to meet increased demand
- April and May saw supply struggles (no commercial OCC, supply chain disruptions) causing paper panic and recovered OCC values increase
- In June export demand for OCC decreased; Mills had high inventory and increased downtime and exercised summer outages following a strong spring

Value Chain Explanation

- Containerboard supply side stops sooner than expected (August) due to loss of commercial business- Over 5M tons- long-term losses in ICI (i.e. schools)
- Despite April/May demand surge, containerboard pricing remained unchanged, down 4-6% YOY, but feedstock price skyrocketed
- Decline is worse than 2008- Significant manufacturing losses will require a long recovery
- Long Term Trend- 18-mo. weakening containerboard growth (from 4% to 1.4% CAGR (now at zero) in N. America
- New RISI Global 15-Year Outlooks show board demand growth 1.4% in North America, 5.6% in Asia

COMMODITY: Glass 3 Mix Glass (Bottles and Jars)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM</p> <p>COVID-19 Response: Reports virus can live on hard surfaces has closed down some MRFs, but this has now been refuted.</p> <p>SHORT AND LONG-TERM FORECAST: 3-mix glass has been disrupted by the COVID bottle deposit state loss, which accounts for 1/3 to 1/2 of all cullet. At the same time, despite talk of recycled content, price will continue to trend lower, as construction slows (fiberglass usage) with the economy.</p> <p>Glass is popular to recycle. Its value as a pure medium for liquids is growing with reports of plastic contamination and impact to litter. Residents expect convenient glass recycling in large municipalities.</p> <p>Industry commitment to use cullet is aspirational rather than universal.</p>	<ul style="list-style-type: none"> • MRF glass quality is a significant issue, including non-glass residue and “fines” and value is directly proportional to the amount of each. • There is a growing issue within residue due to the presence of lithium ion batteries that flow into that stream and are a fire hazard. • Yield is low (~70%). • Glass manufacturers losing container market share to other materials that are more cost efficient to produce. • Glass bottle furnace facilities are limited and declining. • There is limited competition for the material. • Fiber glass markets move with the construction economy. • Mixed glass cullet has limited attractiveness due to yield and quality, compared to cheap virgin alternatives. 	<ul style="list-style-type: none"> • Florida glass end markets expected to improve with the addition of Arglass later this year in Valdosta, GA. • Pozzolon testing and adoption still a big opportunity in Florida. • Persistent negative value since 2013. • Flat movement in cost to recycle at - \$22.50/ton over 2019 through March 2020 with sharp drop to - \$30/ton. • Sharp drop due to revision on pricing in March 2020 to include an environmental fee/battery surcharge due to contamination, including lithium batteries typically found in MRF 3-mix glass. • Recycling program recovery rates would fall up to 25% with loss of glass. 	<p>Glass Processor</p> <ul style="list-style-type: none"> • Strategic Materials <ul style="list-style-type: none"> ○ Sarasota, FL ○ College Park GA <p>Container Manufacturers</p> <ul style="list-style-type: none"> • Anchor Glass, <ul style="list-style-type: none"> ○ Jacksonville, FL ○ Warner Robins, GA ○ Verescence, Covington, GA <p>Fiberglass Plants</p> <ul style="list-style-type: none"> • Owens Corning, <ul style="list-style-type: none"> ○ Lakeland FL ○ Fairburn, GA • Knauf Insulation, Lanett, AL • Industrial Insulation Group, Phenix City, AL <p>Export Ports</p> <ul style="list-style-type: none"> • Tampa • Ft. Lauderdale • Jacksonville



COVID-19 July 2020 Update on 3-Mix Glass

- Glass from MRFs became essential when state run bottle deposit systems were shut down and decreased clean cullet supply.
- Bottle deposit systems have and are returning, May-June.
- Value has decreased with new pricing on Recyclingmarkets.net

COMMODITY: Polyethylene Terephthalate (PET) (RIC #1, ISRI Grade PET Mixed Bottles)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM: COVID-19 Response: 8 of 10 deposit states temporarily shut down deposit systems; hand sort MRFs closing throughout country. These are mostly returning. Short term effect was to stabilize MRF pricing while virgin resins tumbled.</p> <p>SHORT TERM FORECAST: Volatile soft oil market and virgin PET oversupply is offset by loss of deposit PET bales and rPET demand. Pricing is uncertain given volatility in the energy sector. Resin prices up slightly July 2020.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> • Lower consumer goods consumption due to economic downturn may soften demand for PET in packaging, as in Europe. • Increase in capacity and low oil and natural gas prices will result in a glut of cheap virgin PET • China to build a dozen virgin PE plants in next 12 months. • Emerging recycled content commitments from CPG brands and minimum recycled content policy has potential to boost demand, like NHDPE, but such market dynamics are unclear. <p>LONG TERM FORECAST: Low cost virgin PET oversupply will push market down but demand driven increase in rPET (recycled PET). Should eventually delink market with virgin PET within 3 years, similar to NHDPE, and pricing will trend up.</p>	<ul style="list-style-type: none"> • Container deposit programs in 10 states account for 37% of recovered PET. • Low cost virgin resin historically has capped pricing on recycled PET. This is starting to change. • PET thermoforms present processing and marketing challenges. No separate market or bale spec. Most buyers in SE accept < 10% thermoforms in bales. • Curbside Thermoform grade (PET trays) is emerging, starting in CA, but has yet to develop into an active market. Thermoforms are an increasing issue. • MRF-generated PET bales are discounted because of presence of thermoforms; other resin lookalikes, such as PETG, PLA and PVC; and problem materials, such as full-wrap shrink labels, aluminum closures, and other contamination. • Nationally, PET recycling rate has been flat for the past 10 years at around 30%. • The advance of chemical recycling technologies may provide future opportunities for thermoforms and other lower-value PET, but has yet to impact the market. 	<ul style="list-style-type: none"> • Domestic consumption predominates. Plastic export is at historic lows, down 38% in 2019 compared to previous year and 60% compared to 2017. PET follows this trend. • Demand was trending high through Q3 2018 (\$342.60/lb.) followed by a large sustained drop pricing over the next 18 months. • The losses increased over the last 3 quarters of 2019, as PET bales lost 40% of value (\$180/ton in December 2019). • Q1 2020 has seen PET recover 15% of those losses (\$235/ton in March 2020). July 2020 at \$160/ton. 	<ul style="list-style-type: none"> • EPA Region 4 (Southeast) processes more PET than any other region (37% of national PET reclamation). Large fiber manufacturers (carpet) lead the way. • PET Reclaimers (fiber / resin) <ul style="list-style-type: none"> ○ Mohawk, Summerville GA (largest reclaimer in the U.S. More than double the next largest) ○ Signode, Florence, KY ○ Clear Path Recycling, Fayetteville, NC ○ Indorama Sustainability Solutions, Athens, AL ○ Marglen Industries, Rome, GA ○ Unifi, Reidsville, NC ○ Custom Polymers, Charlotte, NC • Export Ports <ul style="list-style-type: none"> ○ Tampa ○ Ft. Lauderdale ○ Jacksonville ○ May be impacted by bans on plastic due to COVID-19 or perceived contamination. Only open to highly sorted bottles.

COVID-19 July 2020 Update on Plastics

- The Saudi's and Russia increase oil production
- Production of virgin PE and PP expanding rapidly and pricing is cheap
- There is pressure to eliminate # 3-7 plastics in many programs by haulers because of little value or no movement, however southeast has a ready, good market
- There is a reduced N. American post-collection supply, especially U.S. collection rates (#3-7)
- Demand for rplastics has been disrupted but likely to be supported upon economic recovery
- Covid rebound conversations on rPlastics support by plastics value chain
- Rebound in oil pricing will depend on large consumers- China and U.S.- still around \$35-40 barrel.

COMMODITY: Natural High-Density Polyethylene (RIC #2, ISRI Grade HDPE Natural Bottles)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM COVID-19 Response: Reports virus can live on hard surfaces, closes down hand-sorting MRFs in some cases. <i>This has been refuted as of June 15.</i></p> <p>SHORT TERM FORECAST: Increasingly soft oil market and distraction of CPGs from sustainability issues may result in lower pricing in the coming months.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> • Lower consumption of consumer goods linked to economic downturn may soften demand for HDPE in packaging. • Increase in capacity and low oil and natural gas prices will result in a glut of cheap virgin PE. • rNHDPE continues to decouple pricing from the linkage with virgin resin markets due to consumer company commitments, recycled content certification, and policy. <p>LONG TERM FORECAST: CPG commitments and minimum recycled content policy will prevail and NHDPE pricing should increase over time.</p>	<ul style="list-style-type: none"> • Strong domestic end markets, particularly in Southeast can absorb all the supply in the U.S. Companies are also showing interest in Florida plants. • National Sword did not have as direct an impact on NHDPE as it has for mixed plastics and fiber grades. • NHDPE (non-pigmented) is a premium grade compared to CHDPE (pigment) and has many more high-grade applications, including food grade packaging. • Recycled content commitments in single use plastics from CPG brands have demonstrated a boost in demand for NHDPE, showing a green premium in second half of 2019. • MRF-generated HDPE bales are discounted because of presence other resin lookalikes, such as opaque PET jugs, PP or PS plant containers and PVC pipe when hand sorted, and, problem materials, such as full-wrap shrink labels, residual motor oil, auto fluids, and other contamination. 	<ul style="list-style-type: none"> ○ Domestic consumption predominates. Plastic exports overall are at historic lows, down 38% in 2019 compared to previous year and 60% compared to 2017. NHDPE follows this trend. ○ NHDPE market peaked in Jan 2020 with historically high pricing (\$1255/ton) due to increasing packaging brand commitments for recycled content. The market has since returned to 2018 value in March 2020 (\$790/ton), which is still above 5-year average (\$673.60/ton). 	<p>EPA Region 4 (Southeast) processes more HDPE than any other region (~32% of National HDPE reclamation).</p> <p>Large Regional NHDPE Reclaimers</p> <ul style="list-style-type: none"> • KW Plastics, Troy, AL • Envision Plastics, Reidsville, NC <p>Export Ports</p> <ul style="list-style-type: none"> • Tampa • Ft. Lauderdale • Jacksonville

COMMODITY: Colored High-Density Polyethylene (RIC #2, ISRI Grade - HDPE Mixed Color Bottles)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM COVID-19 Response: Reports virus can live on hard surfaces, closes down drop off centers and might close down hand-sorting MRFs not under public contracts to perform. This has been refuted in most cases.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> • Slowing construction sector linked to economic downturn may soften demand for CHDPE in industrial applications, such as pipe and lumber/decking. • Lower consumption of consumer goods linked to economic downturn may soften demand for HDPE in packaging. • Increase in capacity and low oil and natural gas prices will result in a glut of cheap virgin PE. <p>LONG AND SHORT-TERM FORECAST: New, virgin capacity natural gas “cracking” markets and Chinese polyethylene will keep CHDPE bale pricing low for the next 1-3 years. However, similar to NHDPE, long-term trend is emergence of a rCHDPE bale with higher demand.</p>	<ul style="list-style-type: none"> • Strong domestic end markets, particularly in Southeast- can absorb all the supply in the U.S. and more plants being built. • CHDPE bales track below NHDPE. • Low cost virgin resin linked to natural gas caps demand on recycled CHDPE, which is seen as low quality, low cost substitute for virgin. • 57 % of recycled HDPE is colored, 43% is natural. • Mostly downcycled for use in infrastructure related products, like, pipes, lumber/decking, lawn and garden, and automotive components. • Typically, cannot go into food grade packaging without a liner. • MRF-generated CHDPE bales are discounted because of presence other resin lookalikes, such as opaque PET jugs, PP or PS plant containers and PVC pipe, and, problem materials, such as full-wrap shrink labels, residual motor oil, auto fluids, and other contamination. • The advance of chemical recycling technologies may provide future opportunities for lower-value HDPE. 	<ul style="list-style-type: none"> • Domestic consumption predominates. Plastic exports overall is at historic lows, down 38% in 2019 compared to previous year and 60% compared to 2017. CHDPE follows this trend. • March 2020 saw historic lows (\$160/ton), CHDPE has lost over 50% of its value since December 2019 (\$365/ton). Colored HDPE now only \$80/ton, new low in July. 	<p>EPA Region 4 (Southeast) processes more HDPE than any other region (~32% of National HDPE reclamation). However, the Great Lakes region has a higher percentage of molding garden markets for pipe, lumber/decking, etc., which is where CHDPE typically goes. CHDPE is traded in the export market, especially bottle grades.</p> <p>CHDPE Reclaimers</p> <ul style="list-style-type: none"> • KW Plastics, Troy, AL • Envision Plastics, Reidsville, NC • Champion Recycling, Winchester, KY • Blue Ridge Plastics, Eden, NC <p>Export Ports</p> <ul style="list-style-type: none"> • Tampa • Ft. Lauderdale • Jacksonville

COMMODITY: Mixed Plastic (RIC #3-#7, ISRI Grade – Mixed Sorted 3-7 Bottles and Containers)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM COVID-19 Response</p> <ul style="list-style-type: none"> • Reports virus can live on hard surfaces closes down drop off and redemption centers, might close down MRFs. <i>This has been refuted by scientific studies.</i> <p>LONG TERM</p> <ul style="list-style-type: none"> • Mixed plastic will continue oversupply for foreseeable future. • Business models using this grade expect low to no cost, or even a “gate fee”. • Emerging chemical recycling technologies may provide more outlets for the grade, but pricing will remain low. • If PP separation begins trending up it further degrades value of 3-7. <p>SHORT AND LONG-TERM FORECAST: Good movement for this grade in the Southeast but price at zero or below. #3-#7 bales will continue to trade at or below zero for the next 2-5 years. However, plastics industry is responding through chemical recycling initiative which deconstructs polymers. Megatrend will grow markets for mixed plastic.</p>	<ul style="list-style-type: none"> • Limited domestic markets and high contamination. Historically this grade was exported heavily to China. • Mixed plastics were key target of China waste import ban in 2018 and alternative export markets, such as Indonesia, Malaysia, Vietnam, India, Malaysia, Indonesia, and Thailand have followed the trend to ban import of mixed plastics due to contamination. • Markets that source #3-7 do so primarily to target polyethylene and PP. PE can be up to 15% and PP can be 45-55% of the composition. • PVC (#3), EPS (#6) and other (#7) are not sought after by these buyers and excess cost is put into sorting, baling and shipping to get lower yield, high value PE and PP. • Many programs have eliminated #'s 3,4, and 7 from their programs. • The advance of decomposition chemical recycling conversion technologies, such as pyrolysis (Nexus fuels, GA), and decomposition technologies, will provide future opportunities as brands provide funding and purchase power. 	<ul style="list-style-type: none"> • High oversupply in the U.S. • Plastic exports overall are at historic lows, down 38% in 2019 compared to previous year and 60% compared to 2017. Mixed plastics was biggest victim and 1.3 million tons which was exported, is not exported any longer. • Price has been negative for all of 2019 and is now over -\$20 per ton. • Some new mixed plastic capacity is in development in Canada / West Coast U.S. (EFS, Peninsula Plastics). It is uncertain if COVID-19 will affect these projects • Florida has longest freight for mixed plastic and there are historical movement issues, especially in January and February. 	<p>Reclaimers</p> <ul style="list-style-type: none"> • Most SE reclaimers do not source #3-7 mixed bales. <ul style="list-style-type: none"> ○ KW, Troy, AL will source other variants if high on PP and PE. ○ Integrico, Sarepta, LA (railroad ties) and Custom Polymers, Charlotte, NC are in and out of the market. • Canadian reclaimers EFS (ON), Revital (ON) and Merlin (BC) are most significant north American outlets for 3-7. • Many mixed plastics go through brokers. <p>Export Ports</p> <ul style="list-style-type: none"> • Tampa • Ft. Lauderdale • Jacksonville <ul style="list-style-type: none"> • Export market is negligible for all ports.

COMMODITY: Polypropylene (RIC #5, ISRI Grade – PP Post Consumer)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM COVID-19 Response: Oil drop, propane cracking market erodes. Also has same surface issues as other materials.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> • Polypropylene is an emerging post-consumer market (sometimes called “tubs and lids”). • Propane cracking and direct conversion from liquid natural gas put pressure on this commodity, now sorted by most large, modern MRFs. • Recycled polypropylene, rPP will eventually have its own demand, like rPET and rHDPE. • For now, lower consumption of consumer goods may soften demand for rPP in industrial applications, such as pipe and lumber/decking. • Increase in virgin capacity and low natural gas prices will result in a glut of virgin PP. • As demand for food grade rPP increases due to CPG commitments and recycled content policies, #5 bale will decouple from virgin. <p>LONG AND SHORT-TERM FORECAST: New virgin PP capacity and low oil / natural gas markets will keep #5 bale pricing low for next 1-3 years. rPP support announced through PPRC through the Recycling Partnership with large war chest. Brand support will help this grade.</p>	<ul style="list-style-type: none"> • PP is an emerging grade with volatile demand. • Market Tracks with virgin PP and oil markets as a lower quality, low-cost substitute. • Typically, downcycled for use in non-packaging applications – pipe, lumber / decking, buckets, crates. • MRF generated PP#5 bales are discounted due to contamination. • Nascent market for higher food-grade packaging applications is emerging for rPP, which could drive up price for #5 bales, but, as yet, has not affected the market. • Many MRFs do not separate PP, instead letting it flow into a mixed #3-#7 bale. PP is around 50% of the #3-#7 mix. • Many programs have cut non #1 and #2 bottles from their list of acceptable items. • The advance of chemical recycling technologies, such as purification (PureCycle) may provide future opportunities for lower-value PP. 	<ul style="list-style-type: none"> • Plastic export is at historic lows, down 38% in 2019 compared to previous year and 60% compared to 2017. PP follows this trend, with most flowing domestically or to Canada. • 2019 pricing on average (\$234.58/ton) was higher than the five-year average (\$222.92), however, took sharp decline starting Q4 2019 through present (\$120/ton). In July 2020, at \$90 per ton. • Currently pricing is at historic lows at about 50% of the 2019 average. • Pricing in SE tracks consistently higher than the national average due to high relative demand. 	<p>EPA Region 4 (Southeast) processes more PP than any other region (~71% of National PP reclamation).</p> <p>PP Reclaimers</p> <ul style="list-style-type: none"> • KW Plastics, Troy, AL – represents over 60% of the domestic PP market. • Next biggest group of buyers are in Canada (EFS & Revital in Ontario and Merlin in BC). • Other SE reclaimers only buy small amounts of #5 bales <ul style="list-style-type: none"> • Envision Plastics, Reidsville, NC • Blue Ridge Plastics, Eden, NC • Champion Recycling, Winchester, KY <p>Export Ports</p> <ul style="list-style-type: none"> • Tampa • Ft. Lauderdale • Jacksonville

COMMODITY: Mixed Bulky Rigids (ISRI Grade Mixed Bulky Rigid Plastics)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM COVID-19 Response: Reports virus can live on hard surfaces might close down MRFs.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> Lower consumption of consumer goods linked to economic downturn may soften demand for rPP and rHDPE in industrial applications, such as pipe and lumber/decking, both of which are targeted in the Mixed Bulky Rigid Bale <p>SHORT- AND LONG-TERM FORECAST: Increase virgin capacity and low oil and natural gas prices will result in a glut of cheap virgin PP and HDPE, keeping bale prices low.</p>	<ul style="list-style-type: none"> Like all mixed plastic bale iterations, mixed bulky rigids were a casualty of National Sword. Markets that source mixed bulky rigids do so primarily to target HDPE and PP. Typical bale is 30% PP, 40% PE and 30% non-PE/PP residual. The advance of chemical recycling technologies, such as pyrolysis (Nexus fuels, GA), may provide future opportunities for lower-value mixed plastics, such as bulky rigids. 	<ul style="list-style-type: none"> Index has price 33% lower currently (\$40/ton) than through the first 3 quarters of 2019 (\$60/ton). Price supports with slightly more stabilized price supports for resin in July 2020. Many programs have cut non #1 and #2 bottles from their list of acceptable items. Bulky Rigid Plastics may not be listed separately on material lists. 	<p>Stable market with limited, but large buyers.</p> <p>Reclaimers</p> <ul style="list-style-type: none"> KW, Troy, AL Integrigo, Sarepta, LA and Custom Polymers, Charlotte, NC are in and out of the market QRS, St. Louis, MO focuses supply strategy on mixed bulky rigids Many mixed plastics go through brokers <p>Export Ports</p> <ul style="list-style-type: none"> Tampa Ft. Lauderdale Jacksonville

COVID-19 July 2020 Update on Aluminum

- Aluminum industry hurt worse than any other industrial sector during COVID-19.
- UBC collection dropped off steeply March through early May - Blocking off cleanest 25% of supply, MRF's UBC stepped in
- Issues with deposit and depot collection systems. Late May and June saw deposit systems coming back online
- Buy-backs, scrap yards, drop offs were suspended
- Due to low street price and employee safety, many scrapyards have discontinued buy-back retail operations purchasing UBCs although reopening for bulk scrap
- Virgin aluminum is 40% less than 2-years ago, Covid increased these negative trends
- Collapse in N. American aluminum demand, mainly from important automotive (May was off 26%) & aerospace sectors

COMMODITY: Aluminum Cans (Used Beverage Cans (UBC), ISRI designations “Talc” and “Taldon”

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM</p> <p>COVID-19 Response:</p> <ul style="list-style-type: none"> • Pure Aluminum is a world market. Price is off 10% (LME) and 6% in U.S. (COMEX). Aluminum cans are a derivative and price is 51% currently of pure aluminum \$940 UBC vs. \$1,437 per ton (April 2020). Price now in many places for MRFs \$760/T. • To shelter in place, 8 of 10 deposit states shut down deposit system- 1/3 of total U.S. UBC supply. Restoring slowly. • Reports virus can live on hard surfaces closes down drop off and redemption centers, might close down MRFs has been refuted. Cans a popular choice for e-shoppers. • <p>SHORT TERM FORECAST: Supply disruption- may be short term price gain, dissolves as mills get back to work.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> • Domestic UBC down 24% in 2019- trend will continue. Less can-to-can domestic outlets. Closest to Pinellas in Mussel Shoals and Georgia have pivoted away from can sheet. • Pure Aluminum will be in a surplus of a million metric tons this year. Trend began last year. <p>LONG TERM FORECAST: Though aluminum cans have a home both for going back to can sheet or secondary aluminum pricing will remain low through 18 months.</p>	<ul style="list-style-type: none"> • Persistent oversupply of virgin aluminum in China and Russia flood world market. • Imports of clean UBC from other source separated systems increases. • Foreign recycled can sheet imports increase into the U.S. • Prices for pure aluminum have fallen to three-year lows worldwide. • MRF-generated aluminum cans are discounted because UBC, must be free from excessive dirt, moisture, liquid, other scrap metals, lids, foil, plastic, paper, glass and other non-metallic items, or heavy deductions are taken for these impurities. 	<ul style="list-style-type: none"> • Short term disruption of deposit system in 9-states and commercially generated aluminum scrap has helped aluminum UBC stabilize in April/May. However, this will change as markets re-open. Fundamentals are not promising. • 5-10% maximum is exported. Domestic consumption predominates. • World demand for all aluminum went down for the first time in 10-years. • In late 2018, early 2019, large U.S. mills, Novelis and Constellium, stop making can sheet and produce automotive body sheet which is made to fit strict engineering tolerances and cannot be made using aluminum cans. • Evolving Ton: Plastic has been replacing aluminum for years and sales have grown only slightly. Industry is prediction is that there will be a shift of approximately 1% back to aluminum because of pollution concerning plastics. • Scrap oversupply in the U.S. will continue through 2020. 	<p>UBC to Cans</p> <ul style="list-style-type: none"> • Constellium, Mussel Shoals, AL • Alcoa, Alcoa, TN • Novelis, Greensboro, GA <p>UBC to Secondary Al Ingot</p> <ul style="list-style-type: none"> • Real Alloy, Loudon, TN • Birmco, Birmingham, AL <p>Export Ports</p> <ul style="list-style-type: none"> • Tampa • Ft. Lauderdale • Jacksonville

COMMODITY: Non-UBC Aluminum (Foil, Aerosols and Cat Food Cans)

FORECAST	ISSUES	TRENDS (LAST 12-MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM</p> <p>SHORT TERM FORECAST: Supply disruption- may be short term price gain, dissolves as mills get back to work.</p> <p>LONG TERM</p> <ul style="list-style-type: none"> Though foil is a true grade of aluminum bale, post-consumer MRF foil is 60-80% less than UBC. Pure Aluminum will be in a surplus of a million metric tons this year. Trend began last year. <p>LONG TERM FORECAST: Like UBC, though non-UBC scrap aluminum has a home as a grade of aluminum, pricing will remain low through 18-months.</p>	<ul style="list-style-type: none"> Foil, including pie plates and trays, is typically either sorted and marketed as a separate bale or blended in with UBC, leading to discounted bale pricing. Foil is considered a contaminant in UBC bales, and, if too much, a reason for rejection. Foil is sorted at MRFs and sold, either as mixed metal or as a separate graded bale. The biggest challenges with foil are low rate of generation and food contamination. Aerosol cans are tolerated in direct charge bales but are not tolerated in pre-shredding (at the mill) operations like Novelis. Most Export markets do not accept Aerosols either. 72 percent of U.S. population has access to AL aerosol recycling Aerosols must be completely empty. There are no indices tracking non-UBC aluminum. 	<ul style="list-style-type: none"> World demand for all aluminum went down for the first time in 10-years. Foil bales are currently trading around \$.10-\$.15/lb, if clean, and tracks below UBC, which is \$.40/lb as of April 2020. This is down 24% from 2019. In late 2018, early 2019, large US mills, Novelis and Constellium, stop making can sheet and produce automotive body sheet which is made to fit strict engineering tolerances and cannot be made using bales with UBC, Foil or other MRF derived aluminum. 	<p>Export Ports -Tampa, Ft. Lauderdale, Jacksonville</p> <p>UBC to Cans</p> <ul style="list-style-type: none"> Constellium, Mussel Shoals, AL Alcoa, Alcoa, TN Novelis, Greensboro, AL Logan Aluminum (Various) <p>UBC to Secondary Al Ingot</p> <ul style="list-style-type: none"> Real Alloy, Loudon, TN Birmco, Birmingham, AL

COMMODITY: Steel Cans

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM</p> <p>COVID-19 Response:</p> <ul style="list-style-type: none"> • Reports virus can live on hard surfaces closes down drop off and redemption centers, might close down MRFs. This has been refuted. • Steel market decimated with closure of many manufacturing operations, including Automakers and parts with scrap flows down 60-75 percent in final two week in March. <p>SHORT TERM FORECAST: Disruption to supply and demand brought market further down through outbreak beginning. Loss of commercial scrap generation in March and April have stabilized otherwise poor dynamics medium term. Steel pricing firmed in late June after Covid freefall and mills are operating at <60% capacity.</p> <p>LONG TERM FORECAST: There will be some recovery once factories get back to work, but any extended recession will result in the market to remaining low.</p>	<ul style="list-style-type: none"> • Steel in U.S. comes from recycled scrap, rather than ore. Domestic production capacity is limited. • China dominates steel production, producing half of the global supply. • Steel is among the most liquid and variable of the scrap commodities with great pricing swings tied to local supply and demand dynamics. • MRF-generated steel cans are discounted due to contamination, such as excessive dirt, moisture, and liquid and heavy deductions are taken for these impurities. 	<ul style="list-style-type: none"> • Weak market prior to COVID-19 - Steel can bale pricing had a sharp decline in the 2nd half or 2019, dropping 60% (\$52.50/ton in November 2019) from Jan 2019 (\$135/ton), due to overproduction out of China. • Gained back 35% by the end of Jan 2020 (\$95/ton) only to drop 40% from due to COVID-19 (\$62.50/ton as of April 3, 2020). Market demand expected to continue this trend through the outbreak as manufacturing slows. • Domestic raw steel production is down 12.7 percent in the week ending March 28 compared to the same period in 2019. 	<p>Most U.S. capacity for steel cans is in rustbelt cities, such as Pittsburgh and Cleveland.</p> <p>Large SE Steel Can Buyers</p> <ul style="list-style-type: none"> • Schnitzer Tampa • Nucor Birmingham • Storelli Steel, Florida <p>Export Ports</p> <ul style="list-style-type: none"> • Tampa • Ft. Lauderdale • Jacksonville



COVID-19 Update Steel Cans

- Steel pricing firmed in late June after Covid freefall
- Weak market prior to COVID-19 -Steel can bale pricing had a sharp decline in the 2nd half or 2019, dropping 60% due to overproduction out of China
- Steel cans have always had a positive home for the last 50-years

COMMODITY: Aseptic Packaging and Gable-Top Cartons (ISRI Grade #52)

FORECAST	ISSUES	TRENDS (LAST 12 MONTHS, CURRENT)	ACCESS (SOUTHEAST)
<p>SHORT TERM COVID-19 Response:</p> <ul style="list-style-type: none"> • Cartons are an additive or a substitute for SOP in tissue mills. • Tissue mills reported as running at 120% capacity due to COVID-19 related demand. • SOP is generated from offices that are closed during stay-at-home orders, and mills are struggling for supply. • Concerns with virus on human-consumed containers is present with this grade as well. <p>SHORT TERM FORECAST: Cartons will have good pricing in the near term due to supply shortage of SOP paired with extremely high tissue demand, especially since the base of aseptics/cartons is long-strand, high quality white sulfate.</p> <p>LONG TERM FORECAST: Cartons have maintained a positive value since the grade was tracked. Markets in the Southeast are likely to improve as supply for sorted grades of material increases.</p>	<ul style="list-style-type: none"> • Lower volume material for MRFs to be concerned. Can go into mixed paper as an outthrow. • Niche material with low yield and volume to mills. • High quality long bleached fiber is desirable, but added steps required to pulp. • Used in tissue mills as substitute for SOP and green building products. • Limited MRFs sort at a separate grade. • Many incorporate into Mixed Paper bales. • Limited end markets for sorted grade 52 bales in Midwest, Southeast Spot market, and Export. 	<ul style="list-style-type: none"> • Index pricing dropped 42% in April 2019 (\$38.75) and remains at that level (\$22.50), however pricing indices for this grade are limited in utility due to such a small market. • Large carton end market development project, Ecomelida, SC, put on hold. However, Continuous and other Green building users need cartons for their process. • Supply of SOP a big concern, especially for tissue mills. Price increase for SOP began before COVID crisis and has increased exponentially. More use of hygiene-type consumable paper bodes well for cartons. • Consumption and recycling of cartons has grown, but volumes are still low (~.5% by volume). 	<p>Fiber Mills using Grade 52 Furnish</p> <ul style="list-style-type: none"> • Spot market SOP sub in the Southeast- good movement • Limited Mills in Midwest use Grade 52 • Other consumers such as ReWall in Midwest use the grade. • Export markets include Mexico and South Korea. <p>Export Ports</p> <ul style="list-style-type: none"> • Tampa • Ft. Lauderdale • Jacksonville