

PARTICIPATING ORGANIZATIONS



COUNCIL OF THE
GREAT LAKES REGION
Solving for Sustainability™



Agenda

12:00pm – 12:10pm	Open House Introduction <i>Andy Brewer, Director, Sustainability & Recycling</i>
12:10pm – 12:25pm	Plastics Industry Association <i>Andy Brewer, Director, Sustainability & Recycling</i>
12:25pm – 12:40pm	Vinyl Sustainability Council <i>Jay Thomas, Vice President of Sustainability</i>
12:40pm – 12:55pm	Flexible Packaging Association <i>Dan Felton, President & CEO</i>
12:55pm – 1:10pm	Healthcare Plastics Recycling Council <i>Tracy Taszarek, Executive Director</i>
1:10pm – 1:25pm	The Recycling Partnership <i>Rachel Kipar, Director Strategic Engagement</i>
1:25pm – 1:30pm	Adjourn <i>Andy Brewer, Director, Sustainability & Recycling</i>



Why the Open House?



Increase
Engagement
with Trade
Associations



Align with
Sustainability
Goals



Promote
Collaboration
Prevent
Duplication





PLASTICS INDUSTRY ASSOCIATION

RECYCLING OPEN HOUSE

Key Learnings

- Industry programs and partnerships
- Product design to enable circularity.
- Research on climate change, greenhouse gas emissions, and life cycle analysis.
- Recycling initiatives within the construction, medical, packaging industries, and many more!

Call to Action

- Encourage industry collaboration
- Join project teams
- Engagement with trade associations

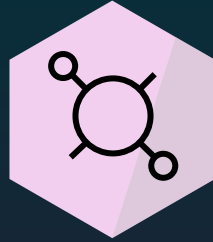




Equipment
Manufacturers



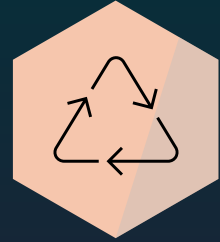
Mold-Makers



Material Suppliers



Processors/
Converters



Recyclers

We protect, promote, and grow the plastics industry.



NEMO

NEW END MARKET
OPPORTUNITIES



It all starts with an idea...

- 1 Identify a recycling challenge
- 2 Gather member input and feedback
- 3 Build a supply chain team of stakeholders representing both supply and demand
- 4 Research and analyze material streams for data driven results
- 5 Develop proof-of-concept pilots and recycling trials demonstrating realistic recycling methods

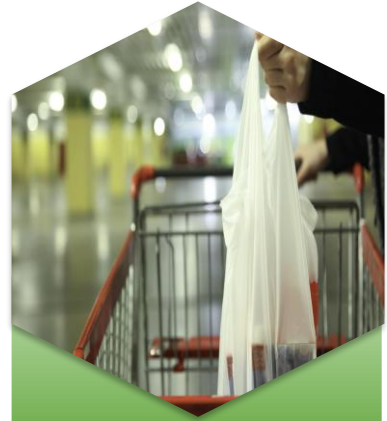
The idea turns into a reality



Replicate
Recycling
Methods



Validate End
Markets



Demonstrate
base model
for successful
scaling

2026 Programs

New End Market Opportunities (NEMO)

- Colorado Polypropylene Recycling Project

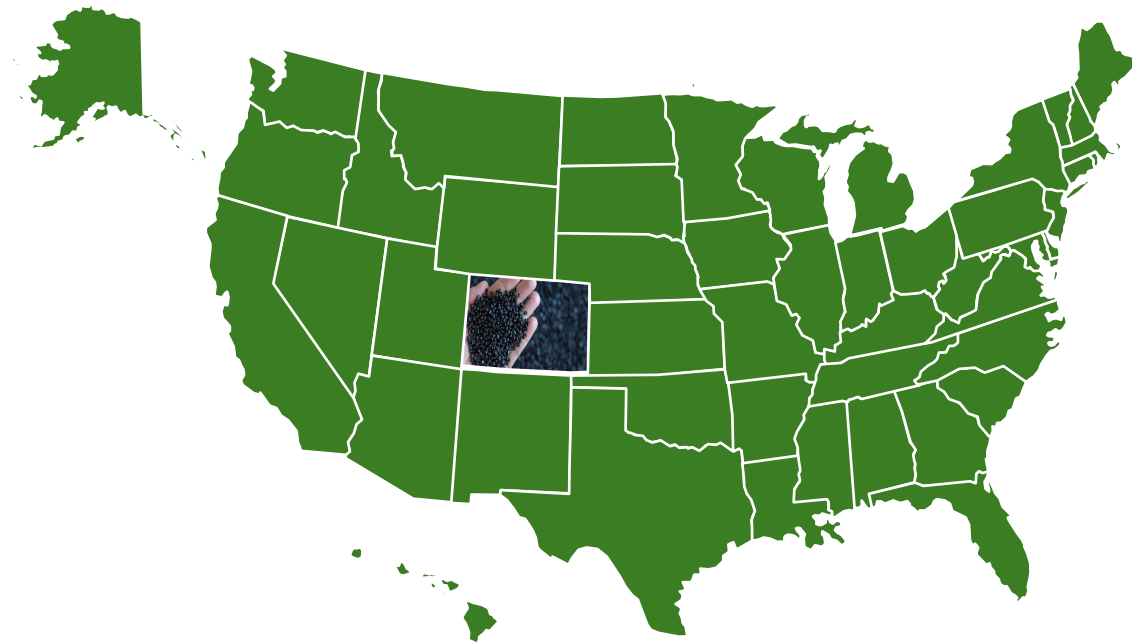
Flexible Film Recycling Alliance (FFRA)

- Multi-Layer Film Trial
- California Pilots

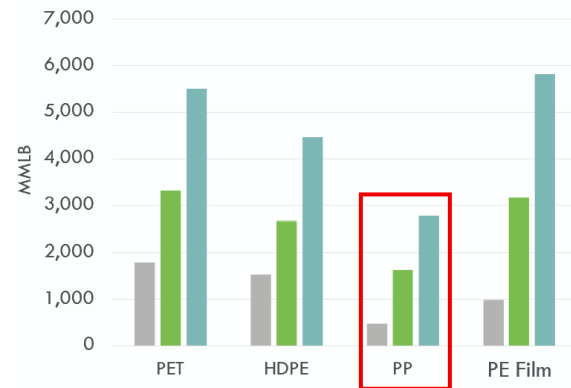
Polystyrene Recycling Alliance (PSRA)

- Nashville, TN Collaboration Project





PCR SUPPLY DEMAND GAP



■ Current Collected (MMLB)
■ Collection Needed to Meet 25% PCR
■ (MMLB) Collection Needed to Meet 50% PCR (MMLB)



Why Colorado?



- 1 Colorado EPR Program: implementation in 2026
- 2 Recycled content requirements for packaging and recycling rate targets. Future single use bans
- 3 Colorado “green” Initiatives
- 4 History of grant and funding programs to improve infrastructure
- 5 MRF existing collection and potential to help standardize statewide recycling lists



Project Overview



Polypropylene is widely used in packaging but remains under-recovered in Colorado's recycling system. This project aims to improve capture, processing, and end-market utilization of PP, reducing landfill waste, lowering greenhouse gas emissions, and strengthening the state's circular economy.

- Increase PP recycling rates in Colorado
- Improve sorting and processing of PP bales at MRF's
- Reduce contamination in current recycling streams through consumer education
- Develop and strengthen local end markets for recycled PP
- Create base-model for states

Project Plan

Phase 1



Market Evaluation & Bale Characterizations

- Analyze current PP market in Colorado
- Outreach and recruitment to MRF's, recyclers, and end markets
- Conduct bale characterizations on CO #5 bales (MRF and PRF analysis)

Phase 2



Material Testing & Reporting

- Conduct physical property testing on sorted PP
- Recycling trials using mechanical and advanced recycling technologies (minimal processing requirements)
 - Develop reports on bale characterizations, material testing, and recycling trials

Phase 3



End Market Testing & Consumer Education Campaign

- Perform testing at several different end market processors
- Evaluate and launch consumer education campaign for current Colorado environmental programs

Bale Characterization



The project team will be conducting bale characterizations from two different Colorado MRF's in the beginning of September. One of the bales will be sent through a PRF before the characterization.

- Contamination Rates- First Pass
- Food grade/natural vs non-food grade- Second Pass
- Manual Sortation
 - Resin Grade
 - Product Identification
 - Brand Identification

Why Participate?

- 1 First-hand access to data from bale characterizations and material testing
- 2 Colorado prioritization of waste diversion and increased recycling rates
- 3 Securing future material supply and developing a regional model for polypropylene recycling
- 4 Potential to acquire larger funding grants to expand program and potential recycling end markets
- 5 Marketing opportunity on PLASTICS data reports and industry recognition





FLEXIBLE FILM RECYCLING ALLIANCE

Purpose: FFRA Driving Circularity for Flexible Films



VALUABLE RESOURCE

Flexible film packaging is recognized as a key material in the circular economy



EDUCATION & AWARENESS

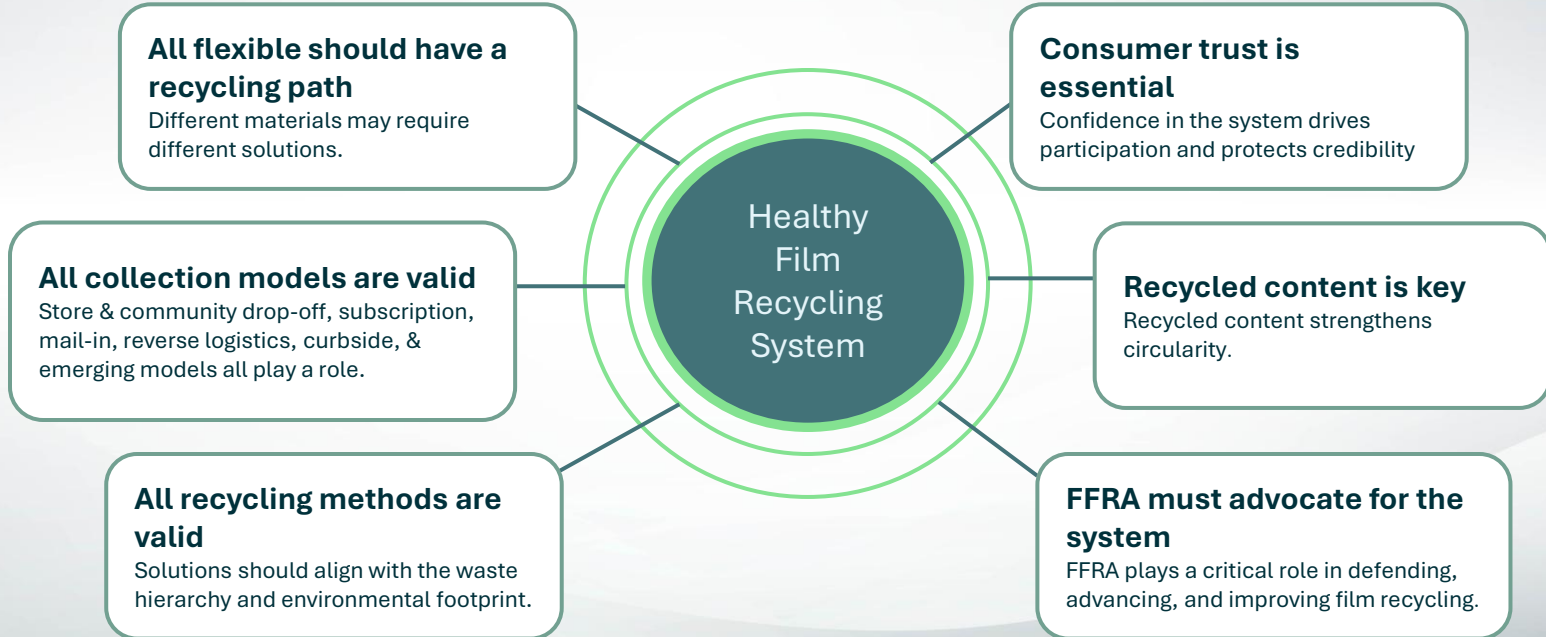
Consumers and stakeholders understand its benefits and recyclability



VERIFIED IMPACT

Success is demonstrated through third-party verification and assurance

Core Principles: For Driving a Healthy Film Recycling System



Multi-Layer Film Trial

Multi-Layer Film Trial

Multi-layer film is a growing product category found in many food packaging applications. Today, multi-layer film is not accepted in curbside or store drop-off streams. Ridwell's subscription service offers an outlet for consumers to recycle multi-layer materials into a separated stream. FFRA and NEMO took a closer look to determine:

- A bale analysis for multi-layer materials
- Composition of food contact vs non-food contact materials
- Sortation methods required for recycling
- Viable end markets for blown film and injection grade materials



Multi-Layer Film

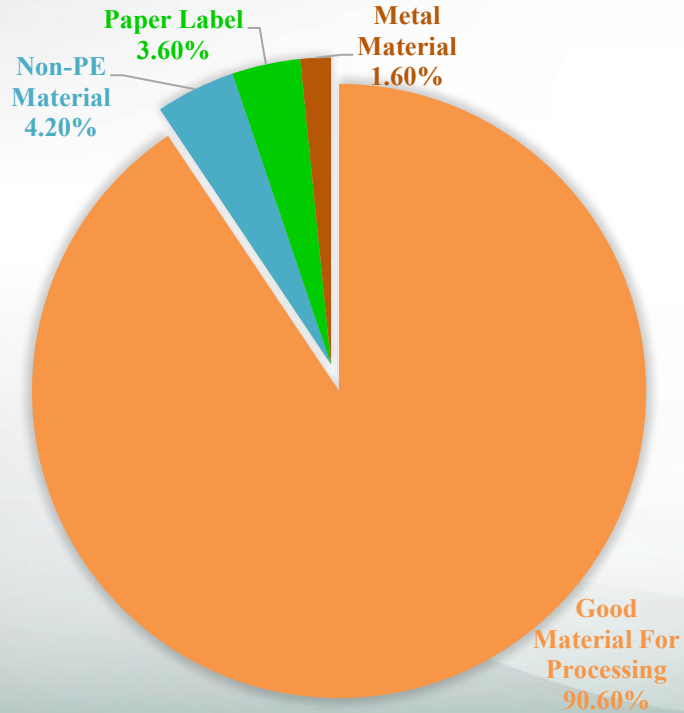


Ridwell Multi-Layer Recycling Categories

- Resealable Food Bags
- Plastic Coffee Bags
- Frozen Food Bags
- Fresh Food Bags
- Dry Pet Food
- “Crunchy” Plastic Food Bags
- Potting Soil, Fertilizer, Mulch
- Woven Plastic
- Candy, Granola, Energy Bar Wrappers
- Chip Bags



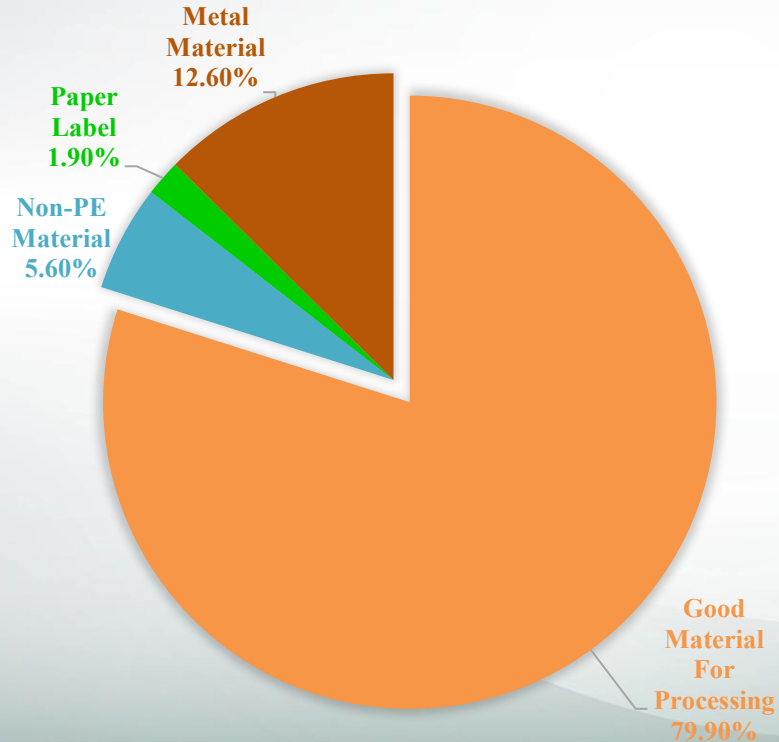
Non-Food Contact



The non-food contact stream represented 77% of the recovered PE film. Noticeable “metal” was removed from the process based on industry recycling guidelines.



Food Contact



The food contact stream represented 23% of the recovered PE film. Noticeable “metal” was removed from the process based on industry recycling guidelines.

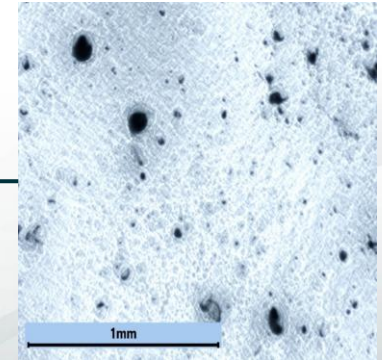
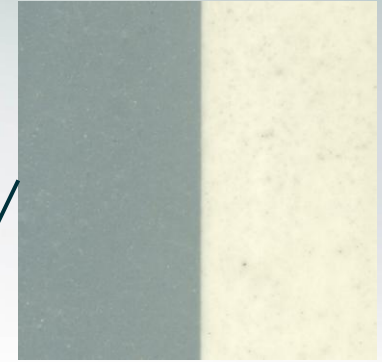
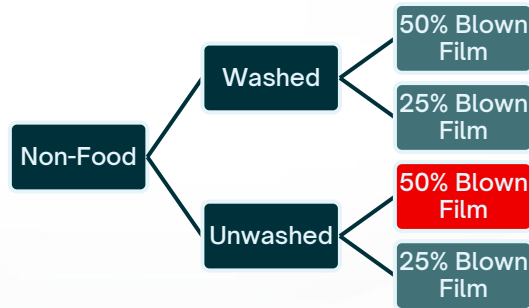
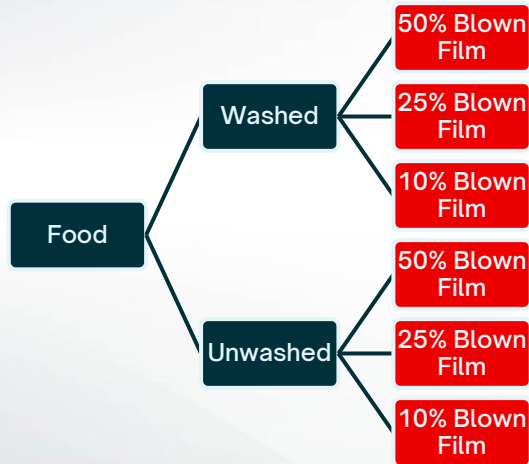


Multi-Layer Film Trial

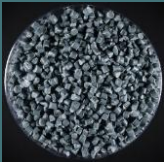
Following the sort, several processing methods were demonstrated:

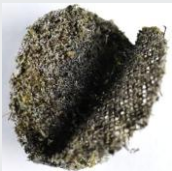
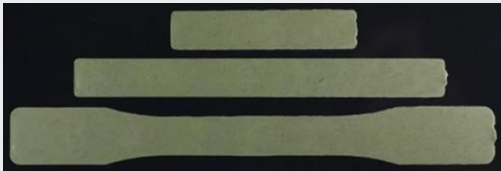


Blown Film Results



Injection Grade Results

Non-Food Contact (Washed)		
Pellet	Screen	Parts
		

Non-Food Contact (Washed)		
Pellet	Screen	Parts
		

Material Data

Property	Non-Food Contact		Food Contact		Industry Blend
	Washed	Un-Washed	Washed	Washed	
Flexural Modulus (psi)	58803	59934	85935	75113	67226
Tensile Strength (psi)	2523	2493	2350	1863	2485
Elongation at Yield (%)	31.17	34.11	14.31	15.59	49.88
Elongation at Break (%)	NA	NA	411.36	258.11	370.56
Notch Izod Impact Break Type	Partial	Partial	Partial	Partial	No Break
Part Colors L*	58.53	52.24	51.87	48.22	51.60
Part Colors a*	-6.51	-6.16	-2.86	-2.08	-5.58
Part Colors b*	1.17	2.88	11.47	8.89	4.22

Key Findings

- High % of PE in multi-layer film bales, but presence of other polymer types creates problems when blowing film
- Washed material performed better than unwashed material- organic residue created issues with extruder screens
- Food contact categories contain several polymer types, compared to non-food contact categories
- Consumers pay attention!

Next Steps

- Analyze data for final report
- Send samples of materials to mechanical and advanced recyclers
- Injection grade end market testing



FFRA Collection Pilots

California Pilot Program

- 1-800-GOT-JUNK?/Shorr and the Flexible Film Recycling Alliance (FFRA) are working with businesses in Sacramento, CA to improve access to flexible plastic film recycling and help move plastic film out of the landfill and into recycling streams.
- **There is no cost to participate**, and your business gains a convenient way to manage flexible films while supporting broader efforts to strengthen recycling systems and reduce your business's waste costs.

Benefits for your Business

- **Convenient, no-cost collection:** Collection receptacles are provided, and flexible film is picked up directly from your location(s) by 1-800-GOT-JUNK?.
- **Reduced disposal and waste burden:** Eligible film is diverted from landfill, helping separate recyclable material from general trash and reduce waste-related costs.
- **Meaningful environmental impact:** Participation supports increased recovery of flexible plastic film, conservation of resources, and reduced environmental impacts associated with disposal.
- **Credible sustainability action with minimal effort:** Demonstrate measurable progress toward waste diversion and ESG goals through a straightforward process designed to integrate easily into existing operations.

What's Eligible



Appliance
Wrap



Pallet
Wrap



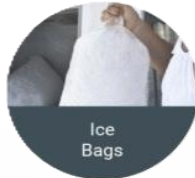
Furniture
Wrap



Case
Wrap



Shipping Air
Pillows



Ice
Bags



Newspaper
Bags



Packaging
Wrap



Dry Cleaning
Bags



Plastic Grocery
Bags



Bubble
Wrap



Bread
Bags



Produce
Bags



Six-pack Ring
Carriers



Food Kit
Ice Packs



Zip
Bags

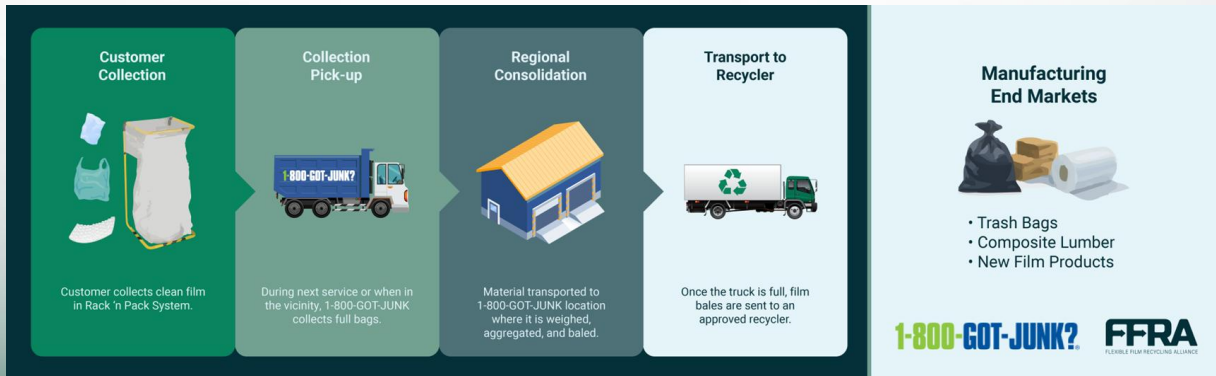
CAA Pilot Award(Small to Medium Volumes)

Location: Sacramento, CA

Scope:

- Small to Medium Amounts of plastic film defined as less than 10 lbs. per day
- Minimum: 100 participating businesses across diverse sectors
- Collection cadence: Minimum of every other week (EOW) (or as operationally appropriate)
- Focus on operational simplicity and standardized service

1-800-GOT-JUNK?

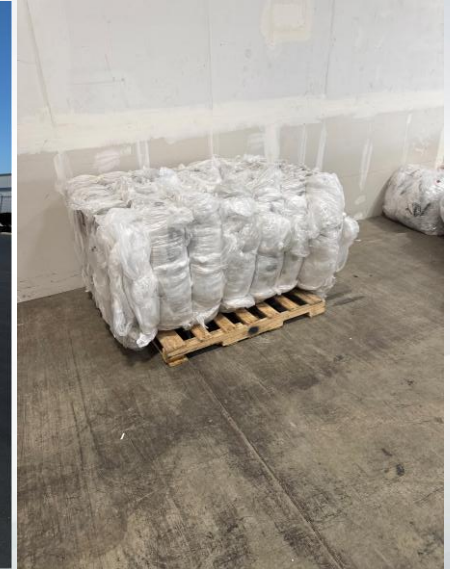


1-800-GOT-JUNK?

FFRA
FLEXIBLE FILM RECYCLING ALLIANCE

FFRA
FLEXIBLE FILM RECYCLING ALLIANCE

CAA Pilot Award (Small to Medium Volume)



CAA Pilot Award (Large Commercial Volumes)

Location: Ontario, CA

Scope:

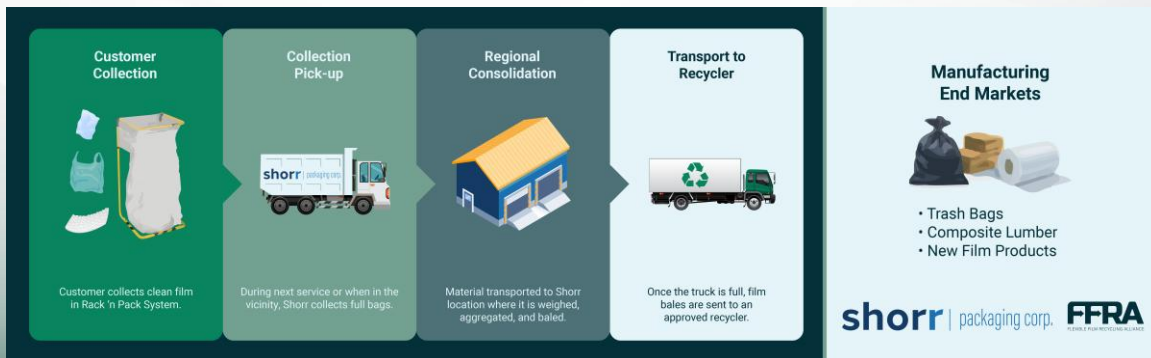
- Large Amounts of plastic film defined as 20 lbs. per day or greater
- Minimum: 10 participating generators (e.g., logistics hubs, retail, manufacturing, hospitals, universities)
- Collection cadence: Once per month (or as operationally appropriate)
- Customized service models and logistics

shorr | packaging corp.



STEWARDSHIP
ACTION
FOUNDATION™

EDUCATING FOR A RESPONSIBLE, CIRCULAR ECONOMY



FFRA
FLEXIBLE FILM RECYCLING ALLIANCE

CAA Pilot Award (Large Volumes)



Looking to Participate



Please reach out if you have additional questions
and/or would like to get involved.



Kurt Kurzawa

kkurzawa@plasticsindustry.org



Meredith Leahy

mleahy@plasticsindustry.org



Kyla Fisher

kfisher@plasticsindustry.org



Patrick Krieger

pkrieger@plasticsindustry.org



Polystyrene Recycling

ALLIANCE

The Polystyrene Recycling Alliance (PSRA) is a coalition that unites the entire polystyrene (PS) and expandable polystyrene (EPS) value chain to promote circularity for polystyrene products across North America.

The alliance envisions a future with polystyrene circularity.

- Establish a baseline for polystyrene recycling access
- Conduct pilot projects for different consumer recycling programs
- Collaborate with stakeholders to improve collection infrastructure and recycling rates



Nashville, TN Collaboration



In April, PSRA announced a collaborative EPS recycling program with Foam Cycle and the Nashville Department of Waste Services. The pilot will increase EPS recycling in the Nashville, TN area, keeping material from landfill.

- Foam collection and densification system installed
- Portable depot collection model
- All formats of EPS are being collected and densified
- Reduce contamination in current recycling streams through consumer education

Have an idea for a NEMO project?



Andy Brewer

Director, Sustainability & Recycling

Plastics Industry Association

abrewer@plasticsindustry.org

