

# Gravure Industry in the US Market

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Chair Gravure AIMCAL Alliance Committee in AIMCAL**

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# Gravure Trends Encompasses Many Areas:

What is the GAA/AIMCAL is doing to influence the Gravure Industry:

- Help with employer recruitment and training.
- Discriminate new gravure technology.
- Engage members in networking.
- Participate in support organization.
- Encourage Green and Sustainable Practices.
- Communicate Potentially Disruptive Laws and Trends.
- Gravure Industry Awards: Golden Cylinder Awards.

# AIMCAL 2021 R2R Conference

## October 18-21 2021

### **Gravure AIMCAL Alliance Committee Training at the R2R conference:**

- Gravure Fundamentals Training for those new to Gravure: (Covering)
  - Gravure Market Segments (Packaging, Publication and Product)
  - Pressroom Operators Ink Perspective.
  - Components of a Print Station. Cylinders, Impression roller Etc.
  - Pressroom Safety
  - Gravure Cylinder Basics
  - Doctor Blades and Holders
  - Formulating Gravure Inks and Color Basics.
  - Press Registration and Dryer Basics
  - Film and Foil Substrates
  - Web Inspection Options
  - ESA and Static Control

# AIMCAL 2021 R2R Conference

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### **Gravure AIMCAL Alliance Committee Training at the R2R conference:**

- Gravure Track Training included:
  - Décor Style Trends Drive Innovation.
  - Challenges in Color Management.
  - Work-off ink Management.
  - What is needed to Convert from Solvent based to Water Base inks.
  - NIR Drying for the Décor and CO2 reduction possibility.
  - Web Inspection options for all market segments.
  - Challenges resulting from trends in film sustainability.
  - Technology for removal of printed ink on start-up and rejected print on film.
  - Evolution of Heat Seal Lacquers.

# AIMCAL 2021 R2R Conference

## October 18-21 2021

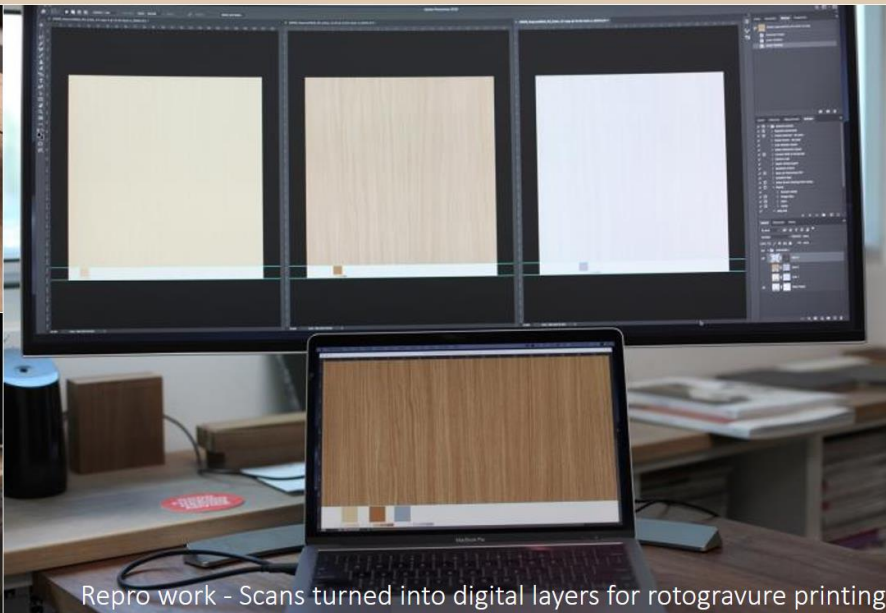
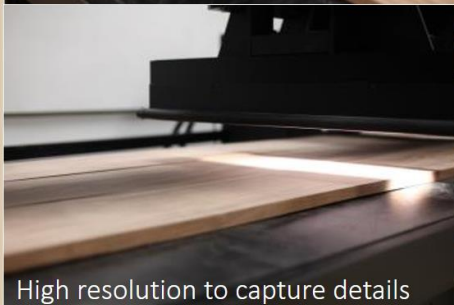
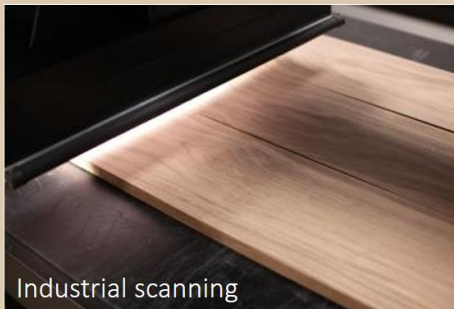
### **Gravure AIMCAL Alliance Committee Training at the R2R conference:**

- Gravure Track Training included:
  - Update from Rotohybrid on DLC Gravure Cylinder Project.
  - Introduction to new project Ecogravsystem from Rossini.
  - Update from K. Walter of ChromeXtend, HelioChrome®NEO & Helio®Pearl.
  - GEF Technical Paper Winner from WMU
    - Surface Energy and Abrasive Resistance Characteristics of Cylinder Surfaces.
  - AI Revolutionizes Production Processes of the Printing Industry.
  - Importance of Pre-Press for Product & Packaging Gravure.
  - Static Control for Gravure Coating.
  - Using Disposable Ink & Drip Pans to reduce make readies.
  - Regimes of Reverse Gravure Coating Process.



## Example Shared Information at Conferences.

### HIGH RES SCANNING & REPRO WORK



## **SHIFT: Realistic Woodgrains**

Improvements evolved in digital innovations for scanning, image size, etc.

From Renee Hytry's presentation removing step and repeat images gave more realistic Woodgrains.

## Example Shared Information at Conferences.



### **SHIFT: Woodgrain Decors replace Real Wood**

Architects & Designers appreciate woodgrain laminate decors.

COVID & concerns for cleanability accelerates usage in 2020 for Office, School, Healthcare environments.

Home Offices expand.

Concerns on using bleach and other cleaning products on natural surfaces has (Granites and woods) has lead the market to realistic laminates.

## Example Shared Information at Conferences. Information important with Sustainability.

### **GAA Member Polywash shares: Removing printed ink from Film.**

- Easiest Challenge during development process
- Experienced in removing ink from printing plates with our Plate Cleaner Machine
- The Polywash dissolves the ink as it enters the wash tank
- 6 soft microfiber rolls scrub the film gently to remove all ink
- The microfiber rolls clean both sides of the film



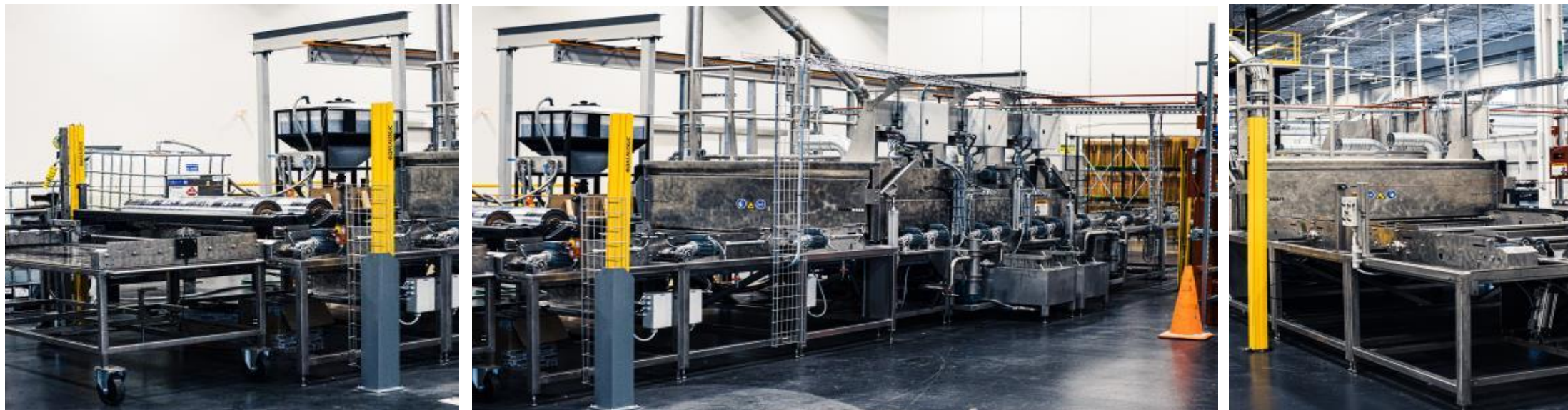


# Members American Packaging & Flexo WASH teamed up and improved cylinder cleaning.

- ❑ Before project started.
- ❑ 80 – 120 cylinders cleaned per day by an eight employee team.
- ❑ Spending nearly \$200k USD on supplies.
- ❑ Manual cleaning not totally effective.
- ❑ Using solvents, scrapers, brushes and towels to clean
- ❑ Employee safety was a concern.



## Members American Packaging & Flexo WASH teamed up for press cylinder cleaning project.



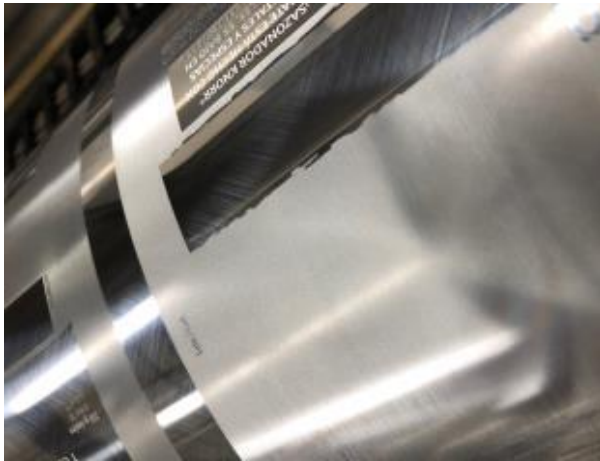
### Flexo WASH Four Step Process





# Members American Packaging & Flexo WASH Achieved to following:

- ❑ Automatic cleaning of 80-120 cylinders/day.
- ❑ Labor reallocation (Number of team needed to clean reduced).
- ❑ Supplies expense down nearly 50%.
- ❑ Cells deep cleaned – process improvement.
- ❑ No longer using solvents to clean.
- ❑ Employee safety and environment improved.



# GAAmericas Members are leading the way!

## American Pkg. Corporation state of the art storage system.

- ❑ Cylinder storage systems help to decrease pre-make ready time with decreasing storage footprint.
- ❑ Can be configured for journals or hollow cylinders.
- ❑ Cleaned and inspected cylinders are stored ready.

**Cleaning and storage in the same bay for maximum efficiency.**





# University Gravure Days

GAA Members participate in University Gravure Days.

- Gravure Day is a day where all Graphic students and faculty learn about Gravure and Career Opportunities.
  - Provide information on Gravure Market Segments.
  - Share information concerning gravure methods and processes.
  - Share Research and trends.
  - Provide ideas for gravure related projects.
  - Share information for Gravure related scholarships and grants.

## **GAA Participates with other Print Associations in the:**

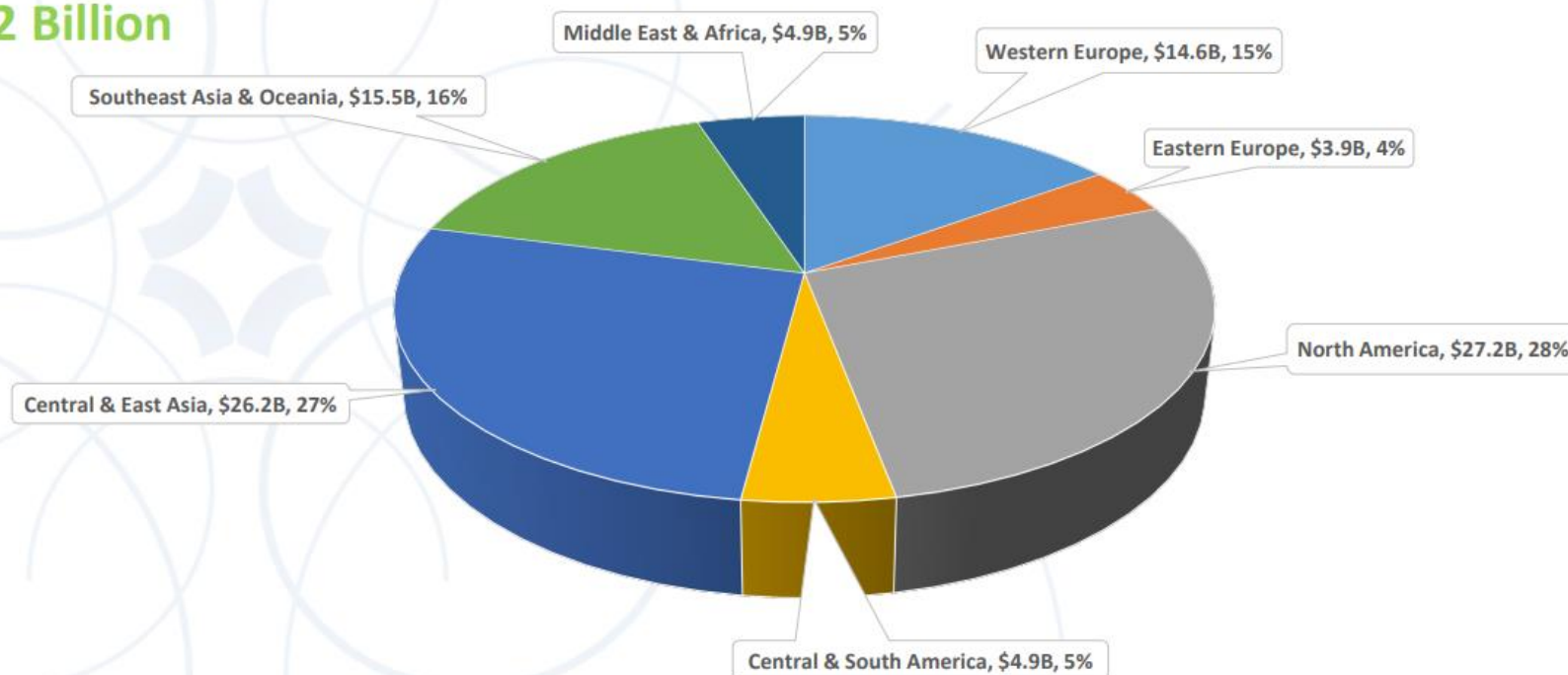
- Wisconsin Print Industry Council:
  - Provided Gravure Process Training for the Department of Natural Resources Staff (DNR).
  - Passes on information to members.
- Brand Owners Graphic Council:
  - Monitoring Trends in color management.
  - ISO & G7 implementation.

AIMCAL works closely with other associations like the FPA. The next two slides are from the State of the U.S. Flexible Packaging Market FPA 2021 report.

## Global Flexible Packaging Market By Region (2020)



Total \$97.2 Billion



Source: PCI Films/Wood MacKenzie per Flexible Packaging Europe's 2021 presentation recorded in March

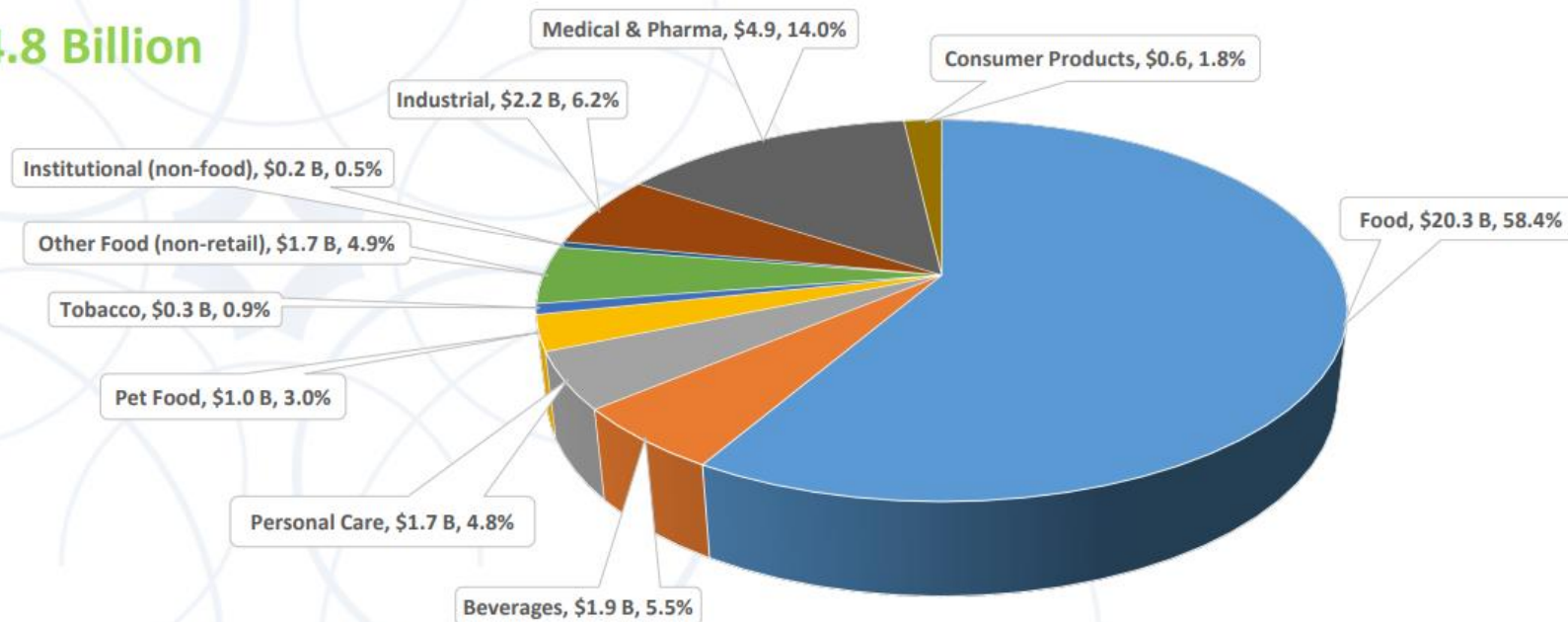
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The second slide from the State of the U.S. Flexible Packaging Market FPA 2021 report.

## U.S. Flexible Packaging Industry Breakdown By End-Use Market 2020

**Total \$34.8 Billion**



Source: FPA 2021 State of the U.S. Flexible Packaging Industry Surveys (converter member and non-member)

Note: Average used for calculation

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# Extended Producer Responsibility (EPR)

**Extended Producer Responsibility (EPR)** is a policy approach that assigns producers responsibility for the end-of-life of products. This can include both financial responsibility and operational responsibility, though the amount and type may differ. Producers are required to provide funding and/or services that assist in managing covered products after the use phase.

States including **New York, Massachusetts, and Washington** are considering EPR-for-packaging bills, and **Maine** seems poised to pass one in the next few months.

[Extended Producer Responsibility - SPC's Guide \(sustainablepackaging.org\)](https://sustainablepackaging.org)

# Extended Producer Responsibility (EPR)

Most **EPR** programs for packaging encourage or require producers of packaging products to join a collective **producer responsibility organization (PRO)**, though many allow producers to comply individually. The **PRO** then develops a producer responsibility plan and manages the producer responsibility program. In some states, these components are referred to as a stewardship organization and stewardship plan. **PROs** are typically required to be nonprofit organizations, and a common approach is to allow for multiple **PROs** to operate within a single region's **EPR** program.

[Extended Producer Responsibility - SPC's Guide \(sustainablepackaging.org\)](https://sustainablepackaging.org)

# Sustainability Concerns and Challenges

- Decision and law makers will not use science in determining what packaging materials will be mandated.
- Ink formulators will be watching how to adjust to different films.
  - Note: Pandemic Substrate shortages are causing film substitutions that are challenging the printers.
- Ink Companies like **INX International** have developed inks that can be removed from the print film according to the **Association Of Plastic Recyclers (APR)**. [www.plasticrecycling.org](http://www.plasticrecycling.org)
  - This allows the print film to be recycled along with the bottle flake.
- All packaging concerned parties must be engaged and be proactive.

[Extended Producer Responsibility - SPC's Guide \(sustainablepackaging.org\)](http://sustainablepackaging.org)

# TEST METHODS

## APR Wash-off Test procedures

1. 126 cm<sup>2</sup> printed sample was prepared.
2. Cut printed samples into 1.5 cm x 1.5 cm pieces.
3. Caustic Wash: Cut printed pieces were mixed with 25 g of PET bottle flakes in 100 g of caustic solution at 85 °C for 15 minutes.
4. Rinse: PET flakes were drained of caustic solution and rinsed with 100 g of tap water.
5. Sink/Float: PET flakes were drained of rinse water and mixed in 200 g of tap water.
6. Discoloration of cPET film, PET bottle flakes, caustic solution, and rinse water were visually evaluated.



**Backing White RE-1 (Std.)**  
**HS Blue / Backing White RE-1**

Cpet Film







**Backing White EXP-2**  
**HS Blue / Backing White EXP-2**

PET Bottle Flakes



Caustic  
Solution  
  
and  
  
Rinse  
Water

Settled		Shaken		Settled		Shaken	
Caustic Solution	Rinse Water	Caustic Solution	Rinse Water	Caustic Solution	Rinse Water	Caustic Solution	Rinse Water
							

**High Opacity White (Std.)**  
**HS Blue / High Opacity White**

Cpet Film



**High Opacity White EXP-2**  
**HS Blue / High Opacity White EXP-2**

PET Bottle Flakes



Caustic  
Solution  
  
and  
  
Rinse  
Water

Settled		Shaken		Settled		Shaken	
Caustic Solution	Rinse Water	Caustic Solution	Rinse Water	Caustic Solution	Rinse Water	Caustic Solution	Rinse Water





# The Great Lakes Initiative.

## THE GREAT LAKES REGION

- The binational Great Lakes economic region spans **eight states and two provinces**.
- Home to **107 million people**, if a country, the region would be the 12<sup>th</sup> largest country in the world by population.
- With **US\$6.0T** in economic output in 2017, the region would be the 3<sup>rd</sup> largest national economy in the world.
- **52 million jobs**, or one-third of the combined American and Canadian workforce.
- The Great Lakes, with **21% of the world's and 84% of North America's surface freshwater**, is the largest freshwater system in the world.



**GAA/AIMCAL Member: American Packaging is involved with the Great Lakes Initiative.**



# The Great Lakes Initiative.

## PLASTIC WASTE CHALLENGE

- 80% of the region's waste is lost to landfills, including valuable plastic. It's also leaking into the environment. In fact, it is estimated that **22 million pounds of plastic enter the Great Lakes every year<sup>1</sup>**, with microplastics reaching levels as high as 1.25 million particles/km<sup>2</sup> – concentrations on par with what is found in the ocean's garbage patches<sup>2</sup>.
- **Plastic waste lost to landfills and the environment is attributed in part to limited material recycling and reuse opportunities** throughout the region. In Michigan, for example, the overall rate of recycling is below 15 percent, with plastic recycling accounting for less than 10 percent of the total.
- Studies suggest it could cost **\$400 million annually to clean-up and curtail plastic pollution** (e.g. beach and waterway cleanup, public anti-littering campaigns, storm-water capture devices, advanced recycling infrastructure, etc.).



1. <https://www.sciencedirect.com/science/article/abs/pii/S0025326X1630981X?via%3Dihub>  
2. <https://www.frontiersin.org/articles/10.3389/fenvs.2017.00045/full>

# The Great Lakes Initiative.

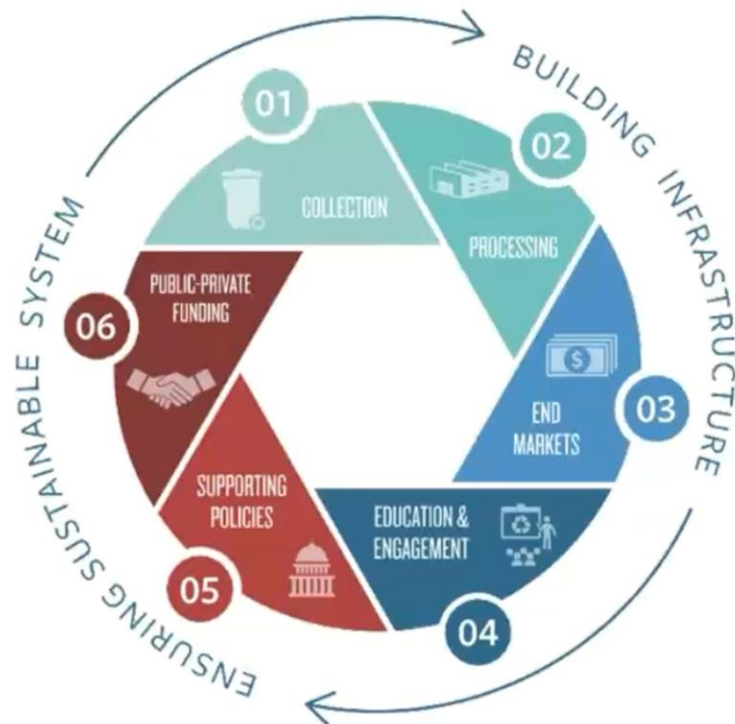
## OUR AMBITION

- **Forging a future without waste and ending waste pollution**, with a focus on plastic, is a monumental task facing the binational Great Lakes economic region and watershed – as well as the rest of the world. There are many challenges ahead, but also significant opportunities.
- Advancing the priorities, projects, and partnerships necessary to achieve a Circular Great Lakes is a solution. Yet, **no one level of government or sector in the Great Lakes has the power, knowledge, and investment** necessary to solve the problem on their own.
- Therefore, by bringing industry, government, academia, and non-profit groups like the Alliance to End Plastic Waste together, the Council is forging a future without plastic waste and pollution in the Great Lakes by creating a **collaborative, circular economy strategy and action plan** for plastics in 2021.



# The Great Lakes Initiative.

## OUR APPROACH



- 01 **COLLECTION:**  
Collect and Capture
- 02 **PROCESSING:**  
Efficient processing multiplies results
- 03 **END MARKETS:**  
Reclamation and Manufacturing
- 04 **EDUCATION & OUTREACH:**  
Consistent messaging tailored to demographics
- 05 **SUPPORTING POLICIES:**  
Local action drives supply
- 06 **PUBLIC-PRIVATE FUNDING:**  
Optimizing co-investment opportunities

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# GAA see great value in merging with AIMCAL:

The AIMCAL Sustainability Committee is a newly formed committee made up of people involved in technical, production, plant and new technology issues who have a common goal of working towards a circular economy. In its oversight of the R2R Conference, the Sustainability Committee seeks to provide a technical forum and an opportunity to network with other technical professionals in the industry, while providing valuable input to AIMCAL technical efforts and publications.

The AIMCAL Sustainability Committee has as its main focus the assembly of the R2R conference; the R2R is a conference for member and non-member company personnel in management, operations, quality control and engineering to examine technical, production, plant and new technology issues.



# THE 2021 GOLDEN CYLINDER AWARDS WERE CO-SPONSORED BY:



**ROTO4ALL**

22 ottobre 2021  
Cinema Odeon Firenze

# Winner of Category A-2: Film/Film Lamination FSU Farmer Brothers Target 12oz. Coffee



**Fres-co**  
System USA, Inc.

**GOGGIO**  
Group



**ACiMGA**

ITALIAN MANUFACTURERS  
ASSOCIATION OF MACHINERY  
FOR THE GRAPHIC, CONVERTING  
AND PAPER INDUSTRY



**GRUPPO ITALIANO  
ROTOCALCO**  
By Acimga

# Winner of Category D-1: Image Preparation FSU EOC Value Brand 12 oz. Coffee



**ACiMGA**

ITALIAN MANUFACTURERS  
ASSOCIATION OF MACHINERY  
FOR THE GRAPHIC, CONVERTING  
AND PAPER INDUSTRY





# GOLDEN CYLINDER “BEST OF THE BEST”

Winner of Group A: Packaging & Label  
FSU Farmer Brothers Target 12oz. Coffee





# ROTO4ALL

22 ottobre 2021  
Cinema Odeon Firenze



# Thank you!

**Lou DeFlaviis: Vice President of Sales INX International  
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