



PRESENTED TO GEORGIA RECYCLING COALITION

Film Plastic in Georgia

Funded by the
Georgia Department of Community Affairs*

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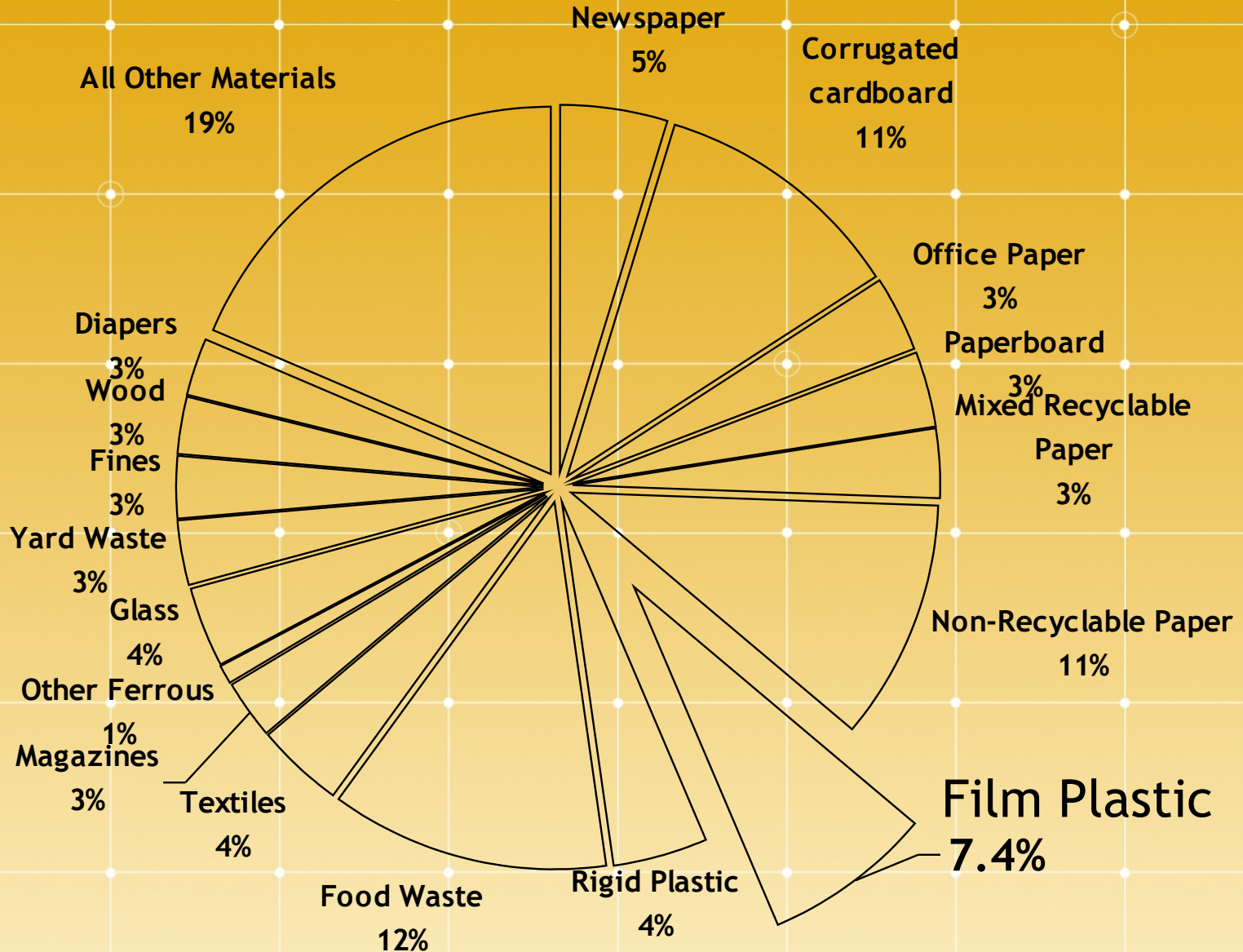
* No Solid Waste Trust Fund monies were used to support this project.



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Contribution of Film Plastic to the Disposal Stream in Georgia



Purpose of Study



- Identify likely sources of film plastic in Georgia
- Assess existing infrastructure for recovery
- Identify challenges and opportunities to recovery
- Provide case studies of successful programs
- Recommend strategies to increase recovery

Sources in Georgia by Sector



Sector	Percent of Total ¹	Estimated Tons (2004)
Commercial and Industrial	56	278,502
Residential	20	99,465
Trash Bags	24	119,358
Total	100	497,325²

[1] Statewide Waste Characterization Study, California Integrated Waste Management Board

[2] Georgia Statewide Waste Characterization Study, Georgia Department of Community Affairs

- Film plastic disposed in 2004 worth an estimated \$50 million

Est. Large Sources of Film Plastic in Georgia, by Business Type



Business Type	Tons MSW/ Emp/Yr ¹	% Film Plastic in Disposed MSW ¹	GA Employees ²	Tons/Yr.
Business Services	1.7	6.4%	414,936	34,762
Restaurants	3.1	3.5%	309,779	33,611
Food Store	2.9	4.7%	128,658	17,536
Retail Trade - Other	1.9	4.7%	202,341	13,913
Food/Kindred Manufacturing -	1.6	12.5%	58,027	8,936
Hospital/Nursing Home	1.5	3.4%	204,582	8,034
Malls ³	N/A	N/A	N/A	4,734

1 Based on data compiled by the CIWMB during 1999 Waste Characterization Study for disposed waste (except for restaurants, food stores, and malls which were based on a subsequent study in 2005).

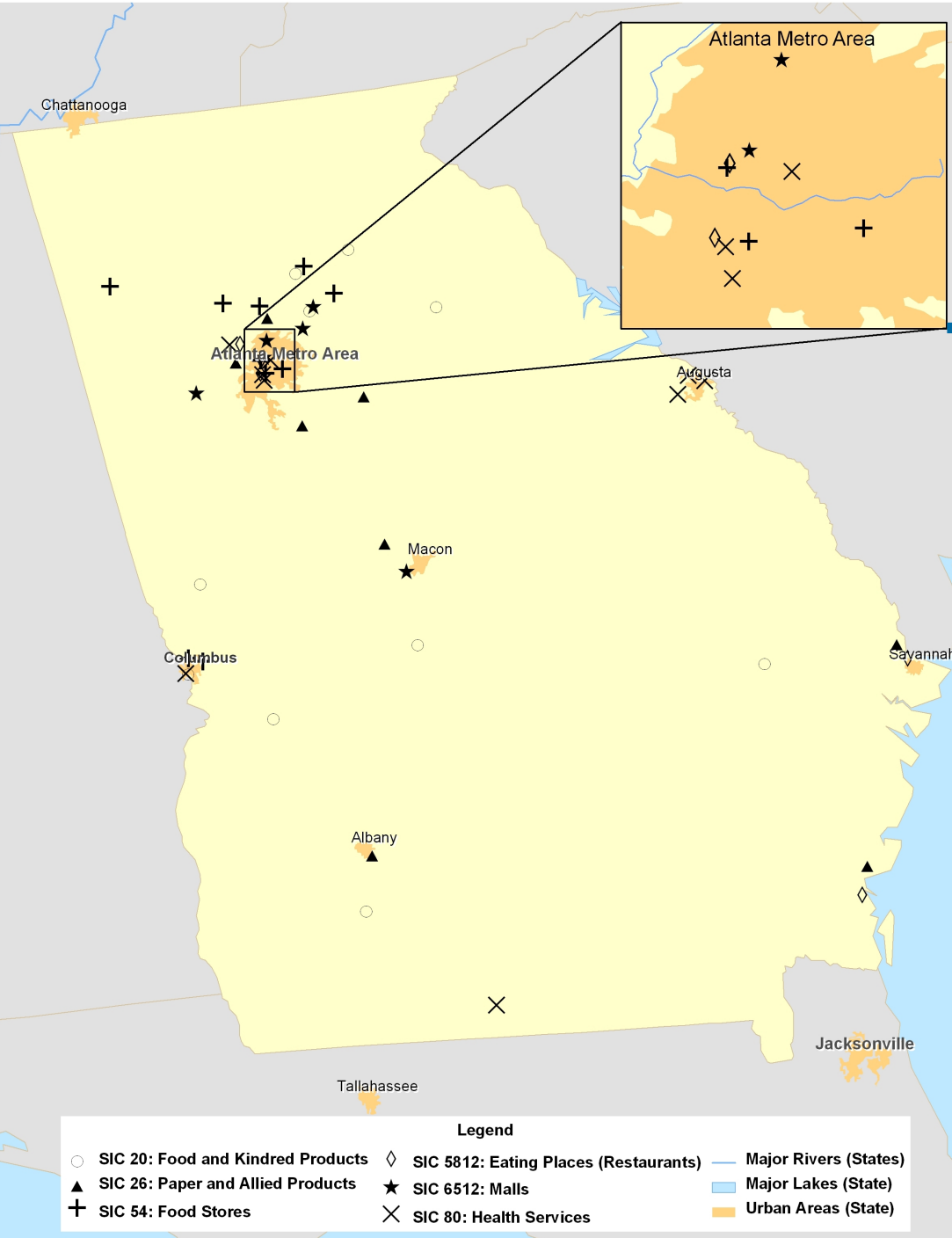
2 Based on County Business Patterns (2006).

3 Malls are a collection of Retail Trade - Other and Retail Trade - General Merchandise stores in one location and not a separate "industry" *per se*.

Est. Tonnage at Individual Locations, by Business Type



Business Type	Tons/Yr.	# GA Locations	Est. Tons /Location/Yr.
Malls	4,734	54	87.67
Food/Kindred Manufacturing	8,936	504	17.73
Hospital/Nursing Home	8,034	1,595	5.04
Food Store	17,536	4,989	3.51
Paper/Allied Manufacturing	540	193	2.80
Furniture/Fixtures Manufacturing	711	316	2.25
Restaurants	33,611	15,859	2.12



Where is the film plastic in Georgia?

- About half of high generating locations within a 75-mile radius of metro Atlanta
- 1-2 facilities in each other urban area
- Food manufacturers in northern rural areas

Collection Infrastructure in Georgia



- Primarily from commercial and industrial sources
- Some commercial and industrial facilities collect with OCC
 - At centralized warehouse and distribution centers
 - If they already bale OCC
 - Bale separately or stuff into bags to be baled after back-haul to a central distribution center
- A few local governments collect at curbside or at drop-off
- Other residents have access to collection at grocery stores or other retail locations

Processing Infrastructure in Georgia



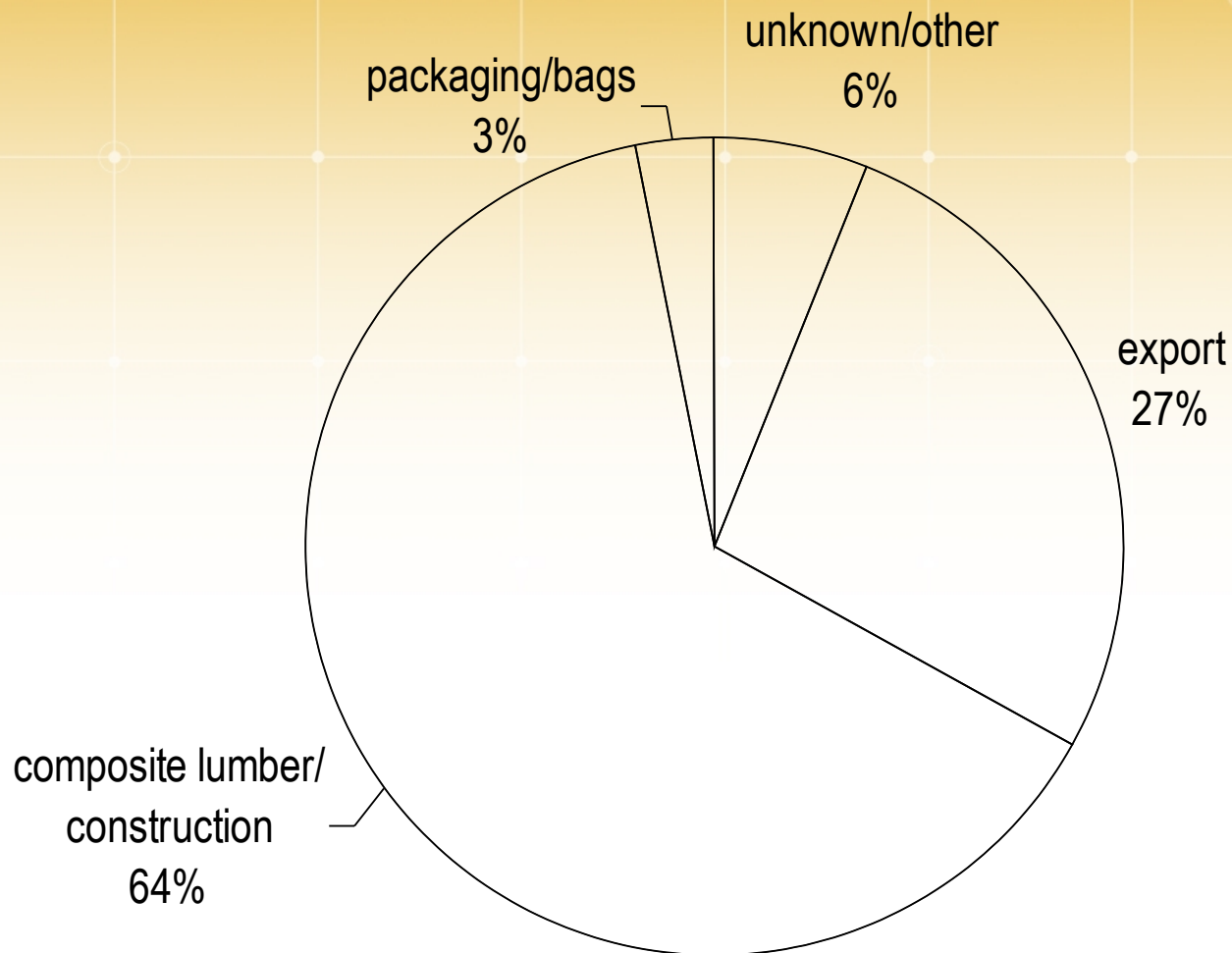
- Some RMPFs accept pre-sorted and bale separately (e.g., Rome-Floyd)
- Athens-Clarke County processes with paper stream in dual stream facility
- Single-stream RMPFs report film plastic is problematic when mixed with other materials
- Some commercial/industrial MRFs accept recyclable-rich loads from which they pull out cardboard, film plastic, and other recyclables

Film Plastic Reclaimers Serving Georgia



Company	Location	Commercial	Return-to-Retail	Curbside	Agricultural
Nemo Plastics	Atlanta, GA	✓			
Cycle Tex	Dalton & Rome GA	✓			
Jerico Plastic Industries	Greensboro, GA	✓			
Webster Industries	Montgomery, AL	✓	✓		
ITW Angleboard	Darlington, SC	✓			
Trex	Winchester, VA	✓	✓	✓	✓
Mountain Valley Recycling	Morristown, TN	✓	✓		✓
Hilex Poly	Mt. Vernon, IN	✓	✓	✓	✓
RKO Industries	LaBelle, FL				✓
AERT	Lowell, AR	✓	✓	✓	✓

End Use for Film Plastic from the U.S.



Source: American Chemistry Council

Challenges and Opportunities: General



- Material difficult to store, handle, and ship when loose
- Contamination (by labels, adhesives, tapes, printing, foam) can reduce marketability
- Difficult to sort mechanically so generators and processors may be required to hand separate
- Difficult for generators to sort by resin type because often not labeled
- Diversion has minimal impact on disposal costs by ton but can be significant for commercial customers that pay by volume

Challenges and Opportunities: Pricing



- Recent declines in commodity prices make recovery less attractive

Type	Market Value (cents per pound)	
	Sept. 2008	Feb. 2009
Commercial polyethylenes (excluding trash, ag)	27.5	7-8
Resident polyethylenes (excluding trash, ag)	18	0
Agricultural LDPE	2	0
Other resins	0	0

Challenges and Opportunities: Residential



- Difficult to differentiate between resins
- Contamination in some residential applications
- Bulky and lightweight makes it difficult to collect and store
- Incompatible with single-stream collection and processing
- Retail collection convenient but typically limited to few materials

Challenges and Opportunities: Commercial



- Estimated to be 74 percent of the film plastic disposed in the State (excluding trash bags)
- Material may be more concentrated and cleaner than at residences
- Some businesses generate fairly significant quantities of uncontaminated material at one time
- Some have the ability to bale on site, reducing storage and shipping concerns
- Some include in their OCC recycling program
- Can be diverted at MRFs/transfer stations

Case Study: Wal-Mart Super Sandwich Bale™



- Goals
 - generate zero net waste
 - reduce plastic shopping bag waste by an average of 33 percent per store by 2013
- Contract with Harmon, a subsidiary of Georgia Pacific, which owns the patent for the Super Sandwich Bale™
- 31 recyclable materials (e.g. pill bottles, coat hangers, plant containers, books) bagged separately and placed in compactor
- Bales shipped to a MRF or distribution center
- Broken apart and sorted by commodity type for marketing



Wal-Mart Super Sandwich Bale™



- **Benefits:**
 - 48,500 tons of plastic diverted in first year, approximately 97 percent is film plastic
 - Wal-Mart receives a share of the revenue or discounted pricing on end products made from recyclables from Wal-Mart
 - Super Sandwich Bale™ helped overcome the difficulty of handling film plastic
- **Challenges:**
 - Training
- **What's Next**
 - Expand their program to supplement local recycling programs

Coca Cola Bottling Plants



- National program to recycle shrink wrap from shipping
- Zero waste initiative in production and warehouse facilities
 - Locations in various stages of program implementation based on equipment and training rollout
 - All production centers are fully equipped and implemented
- Collected at depalletizer and warehouse
- Transported to a baler
- Picked up by IP under national contract

Coca Cola Bottling Plants



- Challenges:
 - Capital costs associated with equipment procurement and installation
 - Training at 400+ facilities
- Benefits:
 - Reduced waste disposal costs
 - Revenue from recyclables
- Lessons learned:
 - Do not reinvent the wheel
 - Pilot before trying to implement large scale
 - Ensure that system is created with user/generator involvement to maximize capture

Strategies: Set a Goal



- How would goal relate to 16 percent recycling goal for plastic?
- Work with recyclers and other stakeholders

Commodity	Projected Goals	
	2012	2017
Glass	8%	8%
Paper	15%	28%
Metal	13%	18%
Plastic	16%	20%
TOTAL	11%	23%

Strategies: Measure Progress



- Confirm largest generators in State and regions
- Gather input from recyclers on reporting mechanism as part of establishing goal
- At the local level, report through RETRAC
- Update statewide waste characterization study to determine impact on tons disposed
 - Total
 - Percent of film plastic

Strategies: Education and Information



- Incorporate into statewide recycling information
 - Local government annual reports
 - Market directories
 - GRC market updates
- Target high generators and companies with “green” initiative
 - Offer audits or audit training
 - Provide easy access to information about recycling options
 - Sponsor focused pilot programs by business type
 - Recognize successful programs

Strategies: Collection and Processing



- Work with recycling hubs to determine the best way to maximize recovery in ways that:
 - Do not interfere with the single-stream programs
 - Do not impact quality of other materials
- Work with retailers to expand collection locations

Strategies: Collection and Processing



- Work with companies baling OCC to add film plastic
- Encourage businesses to work with vendors to take back film plastic that they deliver for recovery
- Work with large generators, such as anchor stores at malls, to accept and bale film plastic from smaller generators in area

Strategies: Collection and Processing



- Work with local governments to develop collection from businesses and central locations through their own forces or through a contractor
- Work with applicable food manufacturers to recycle clean material left on a roll
- Create drop-off points for clean agricultural film in highly agricultural portions of the State

Strategies: Market Development



- Promote products made from recycled film plastic in appropriate forums
- Develop State purchasing preferences for products made from recycled film plastic
- Add equipment to handle film plastic for recycling to State contracts and grant programs
- Work with the manufacturers and the businesses that use film plastic to purchase products made from this material

Strategies: Potential Partners



- Chambers of Commerce
- Business associations representing key generators
- Collectors, processors, and end users of film plastic and other materials
- Landfills and transfer station operators

Thank you!



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