

THE GLOBAL RECYCLING CRISIS: HOW LOCAL GOVERNMENTS CAN RESPOND?

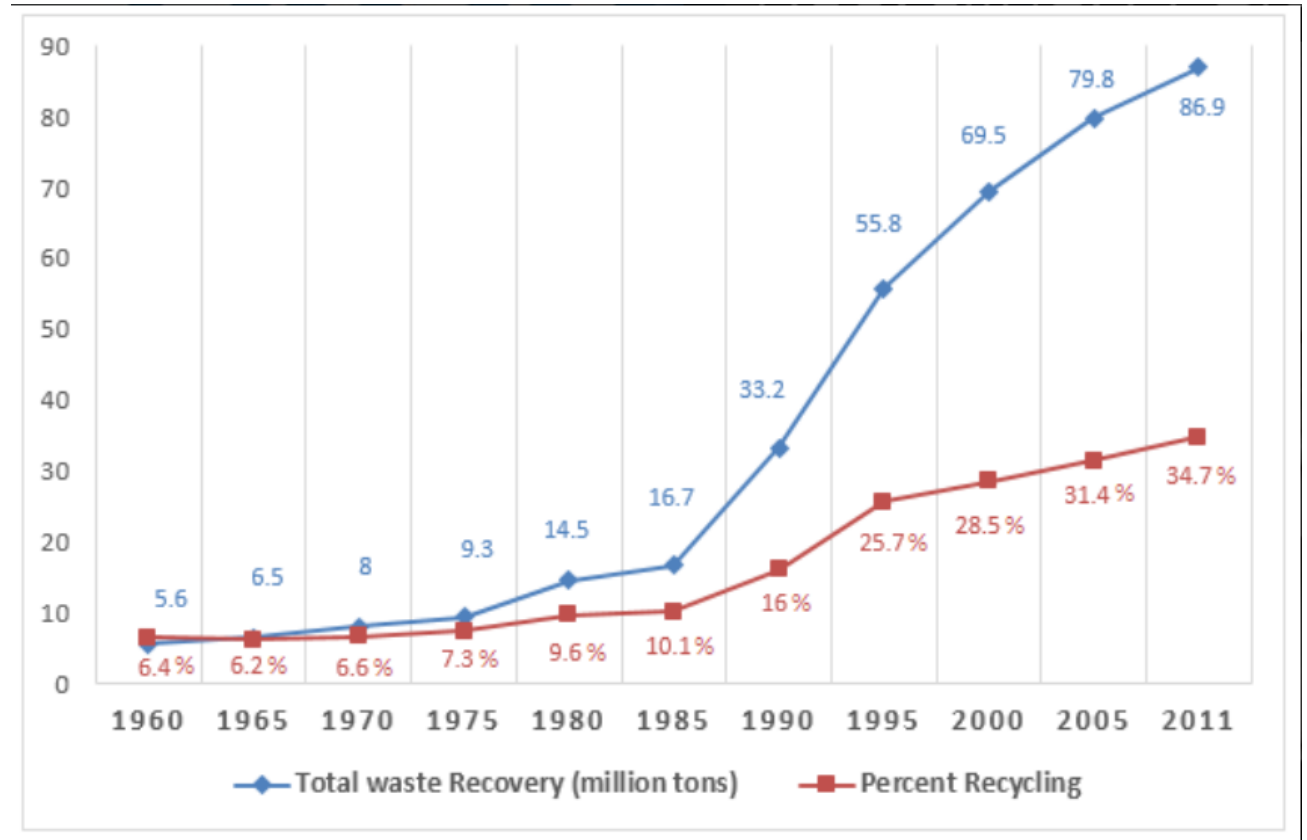
Cindy Ye, Molly Conlin, Erin Fenton, Rhea Lopes, Carlos Mesa Guerra,
Lucas Raley, Khyati Rathore, Prakriti Shukla, Sanjana Sidhra, Franco
Uribe-Rheinbolt, Zhuojun Wang

Cornell University

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A Global Catastrophe

- A rise in single-use items created for the modern economy
- While the amount of waste that the US produced grew rapidly, recycling rate remains low.
- Recycling programs are applied to address the problem of increasing waste



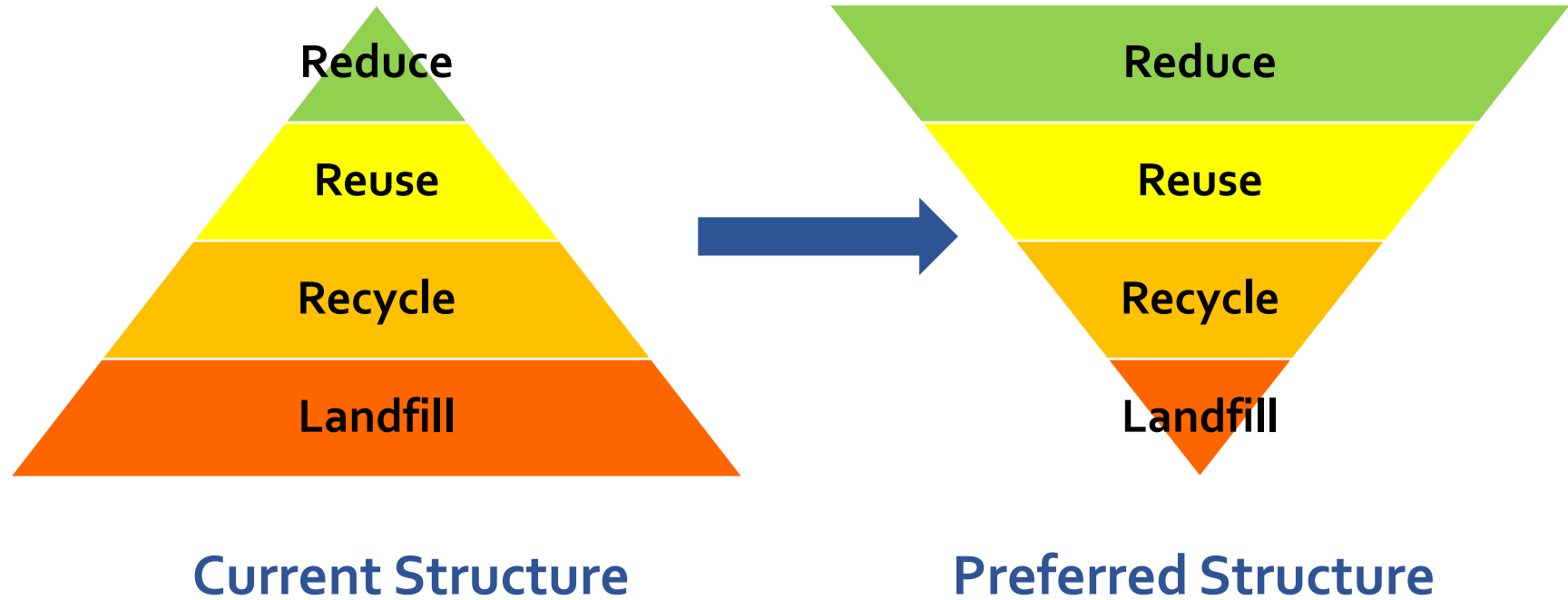
Recycling Programs in the US

- Multi-stream system vs. single-stream system
- The problem of inefficiency vs. too much contamination



Image found: <https://www.thebalancesmb.com/single-and-dual-stream-recycling-2877722>

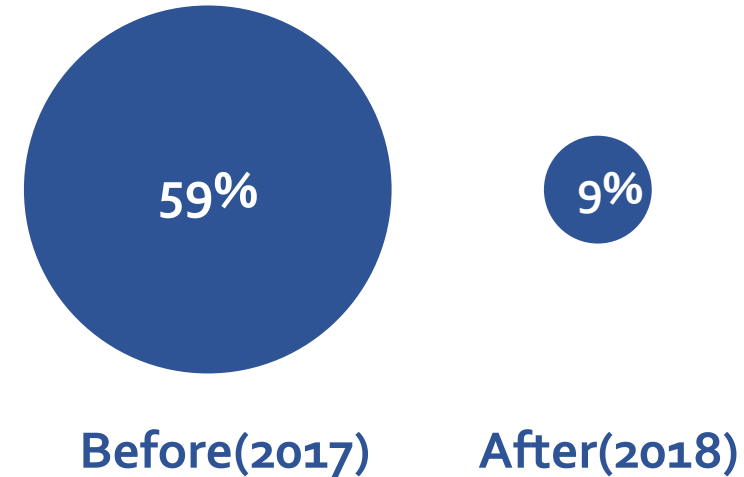
The Need to Reverse the Pyramid



Market Change

- January 2018: China enacted the waste ban
- Lowered the degree of contamination allowed
- Waste exported to China shrank
- Not a temporary accident and actions should be taken besides waiting

Global Waste Imported by China (%)*



*Data source: Financial Times 2018

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Methodology

- Information search and data collection



ScienceAdvances



- Interview with recycling experts

-Jean Bonhotal, Director of Cornell Waste Management Institute

-Richard Coupland, Vice President, Municipal Sales at Republic Services

- News article analysis



- City case studies

- Website for general public with examples of responses

- Issue brief on recycling and plastic bags



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The Global Recycling Crisis

The Story of Recycling and How the United States Can Respond -Molly Conlin, Erin Fenton, Lucas Raley, Cindy Ye and Franco Uribe-Rheinbolt

Story of recycling: a lesson from a plastic bottle

Problems with Waste Exporting

1. NIMBYism - "Not in my backyard" in this case is a sentiment expressed by the nation as a whole. Policymakers are not concerned about the consequences of contamination or overfilling landfills in other countries, so long as it is reduced for Americans. Nearly half of the recyclables China imports will go to a landfill, which will cause air pollution, biodiversity impacts, and underground water pollution. Although the immediate effects in the US are avoided, these issues will ultimately harm the United States as well and should be taken more seriously.

State and Local Government Responses

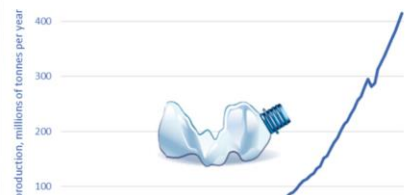
With China's new, stringent requirements for recyclables free of contaminants, waste management experts and policy makers in the United States are discussing possible solutions.

State and local governments are implementing innovative programs locally in response to the recycling crisis. These strategies include:

1. Incentives to create a U.S. market for recyclables
2. Outreach and education campaigns to change consumer behavior

Recycling: A Global Catastrophe

Recycling has become a global phenomenon due to a rise in single-use items created for the modern economy. Today, most materials used in production of household goods are paper, plastic, cardboard, glass or other substances that are considered disposable. Plastic use, in particular, has increased drastically in the last 50 years (see figure).



Market Change

U.S. recycling programs had been effectively collecting and exporting our recyclables for decades. This waste has been mostly exported to China, as China is the leading importer of recyclables in the world.

In January 2018, everything changed. China enacted its garbage ban, which lowered the degree of contamination allowed in imported recyclable materials. This is part of the government's effort to reduce the amount of waste piling up throughout the country. China, in only 12 months, moved from taking 60% of the world's recycling waste to a mere 10%.

United States municipalities and recycling companies are now facing the repercussions of these changes, creating stock piles - like the one shown here - of the recyclables that were once

Consequences

With the passing of the Clean Air Act in 1963, preventing commercial burning of waste, the United States has used landfills for most of its waste management needs.

Most trash in landfills is buried and kept out of sight, and therefore out of mind. However, there are still adverse consequences. Waste products leak into groundwater, contaminating drinking water. And although they are covered, the landfills still release toxic methane gasses, polluting the air and atmosphere.

Create domestic market

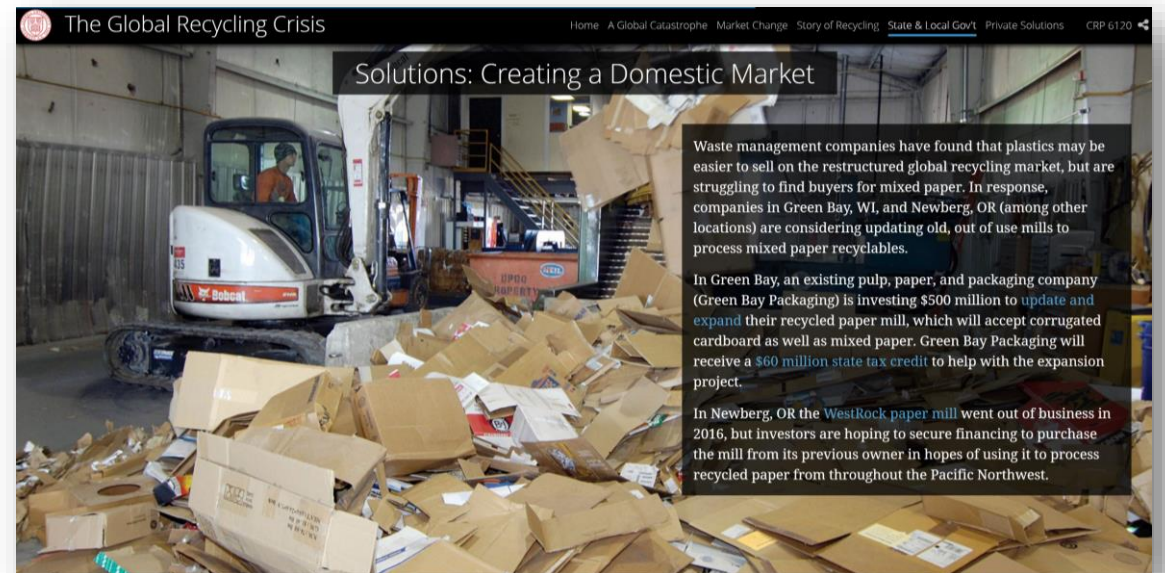
- Colorado Nextcycle
- Supported by existing grant funds
- Financial and technical support



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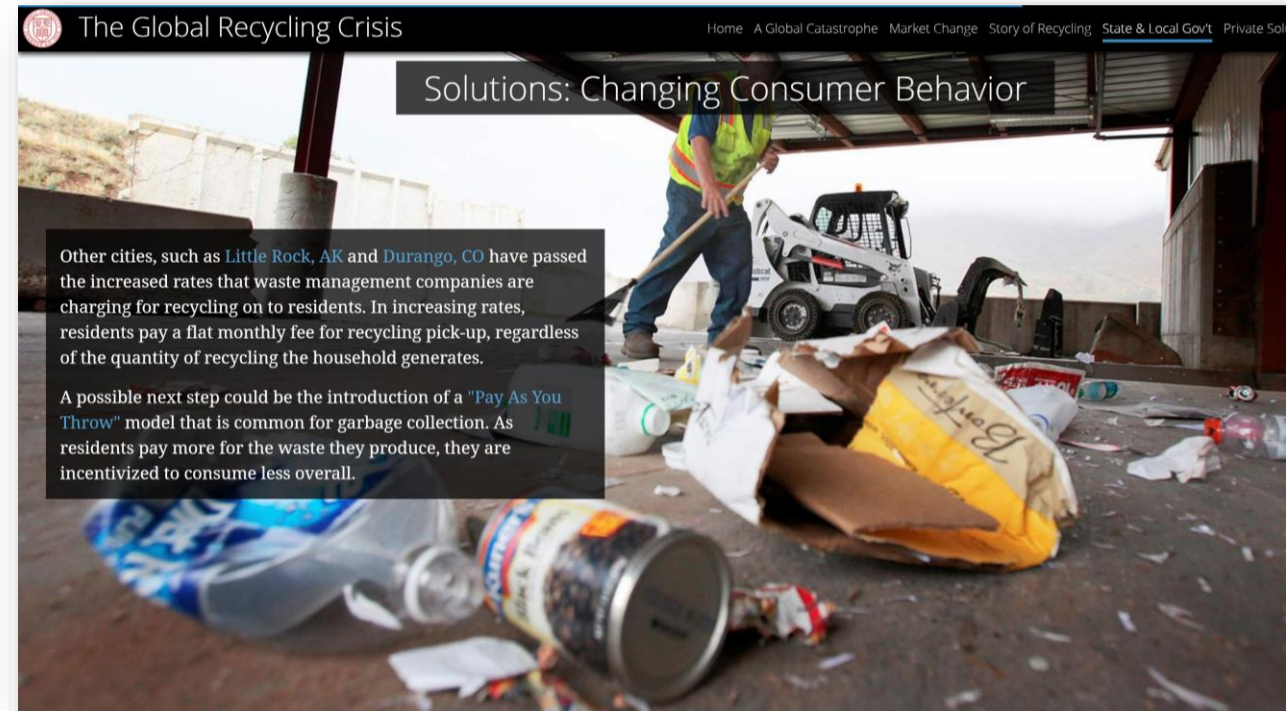
Corporate Reuse

- Green Bay, Wisconsin
- Packages made from used paper and cardboards
- Tax credit for expansion



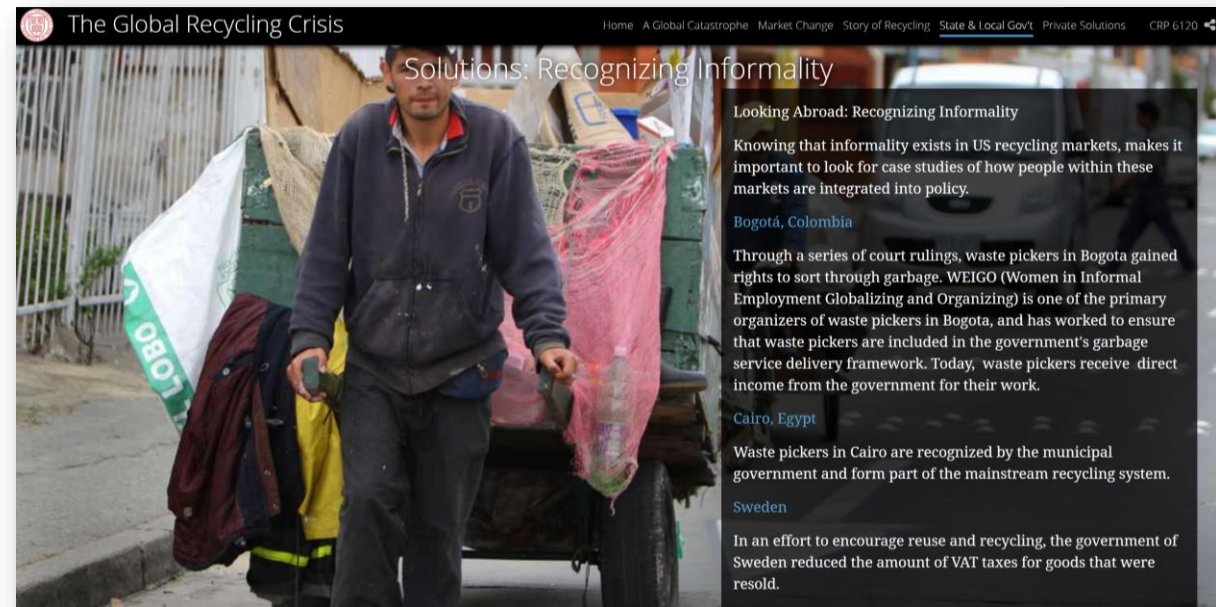
Limit materials & Dual stream

- Public education programs
- Encouraging good behavior in communities
- “Pay As You Throw”



Recognize informality

- Include informal recyclers in the waste management system
- Egypt: Waste pickers receive income from the government
- Sweden: tax reduction for goods resold



Check out our website
Educate the communities



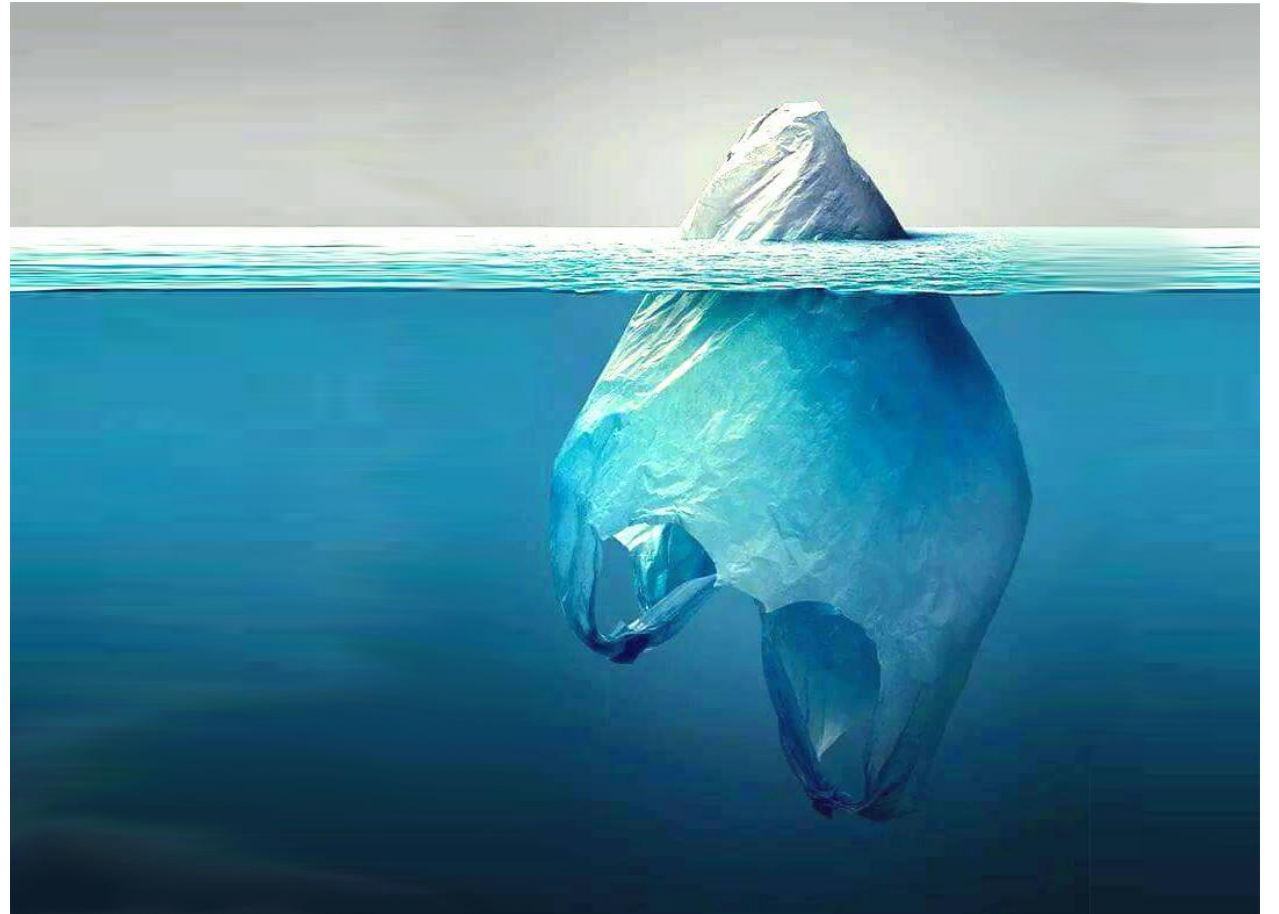
For a better world

<https://tinyurl.com/recyclingcrisis>

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What about plastic bags?

- USA uses 380 billion bags/year





Plastic bags
are not free.

Cost to You, Cost to Your City

Windblown litter

Choked sewers,
Water flooding

Public Health

Pest problem,
Soil and water
pollution

Environment

Costly river and
marine cleanup

Waste Management

Collection-disposal,
landfill and litter
cleanup costs

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“Plastic bags
are not free.”

Cost to San Francisco (2004)

$$\begin{array}{ccccccc} \text{Contamination of} & & \text{Collection} & & \text{Litter} & & \\ \text{Recycling Stream} & + & \text{and} & + & \text{Cleanup} & + & \\ & & \text{Disposal} & & & & \text{Landfill} & = & \$8.49 \\ & & & & & & & & \text{million/year} \\ & & & & & & & & 17 \text{ cents/bag} \end{array}$$

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“What about
the response?”

Cities Rush to Ban

194

Ban

6

Fee

5

Tax

43

Hybrid

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Do bans work?

No, Fees/Tax work Better. Reduce consumption

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Case of Chicago

Ban

on single-use
plastic bags of
specified thickness



~ 0% reduction
in use

as retailers shift to
selling thicker variant of
plastic bags



7-cent Tax

on single-use
plastic bags



42% reduction in use

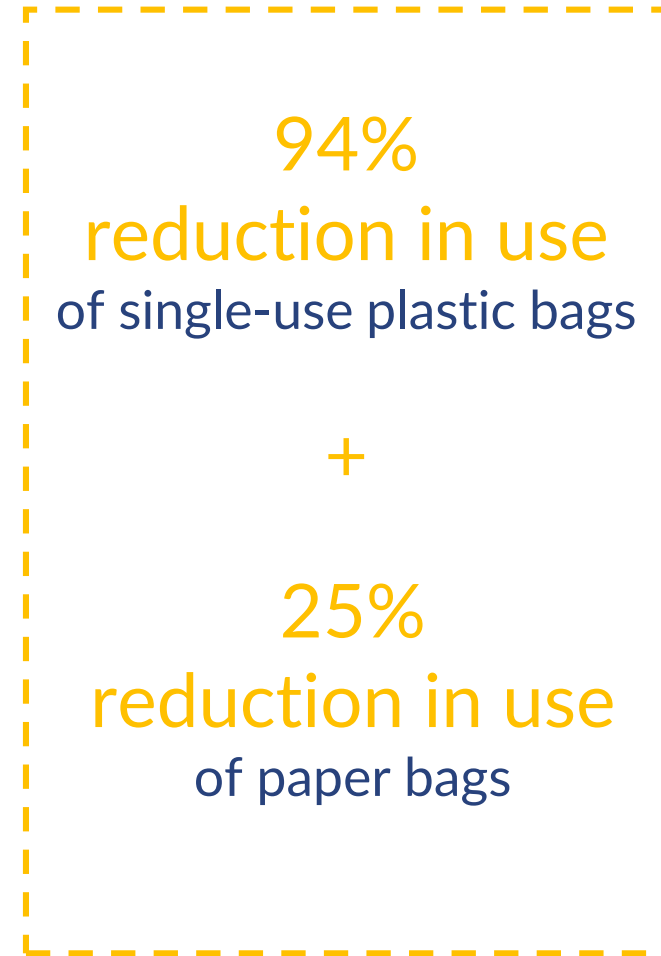


The Hybrid Ban-Fee Regulation works Best

Hybrid models discourage the consumption of alternatives

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Case of Los Angeles



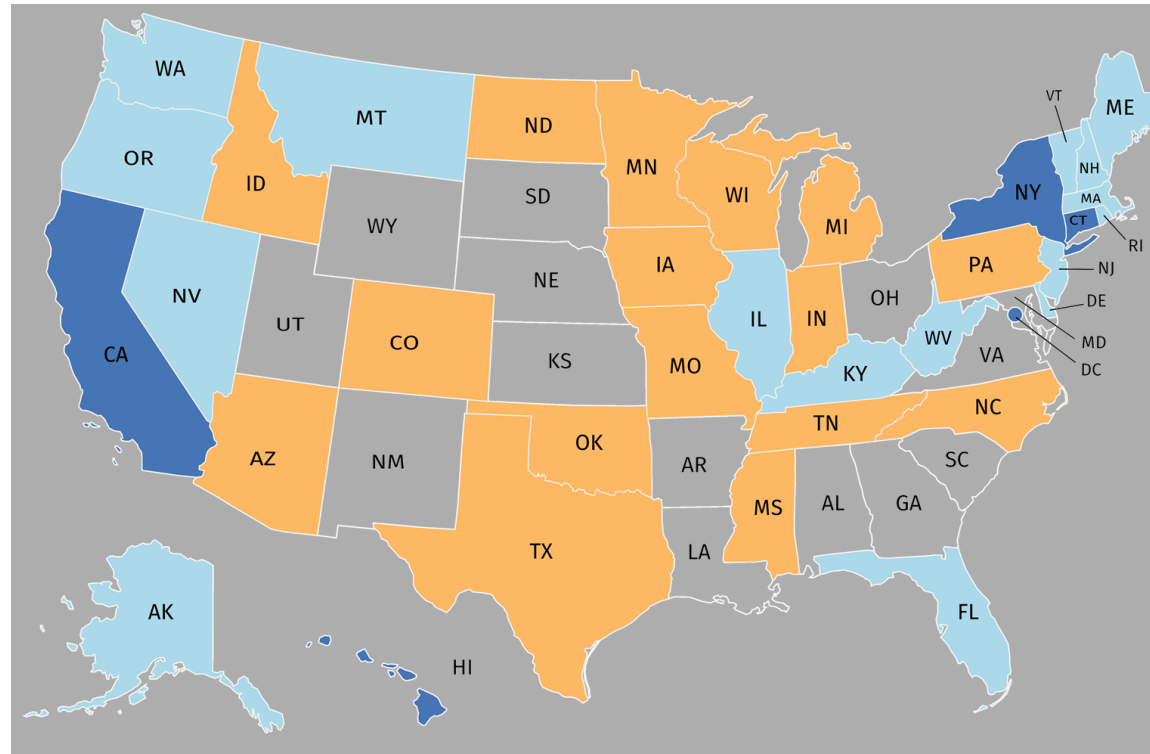
Hybrid regulation will impact all the stakeholders



Are States Cooperating?

What are the states doing to help you?

16 states prohibited local governments from regulating



- State laws restrict plastic bags
- Pending state laws to restrict plastic bags
- State laws prevent local governments from restricting plastic bags

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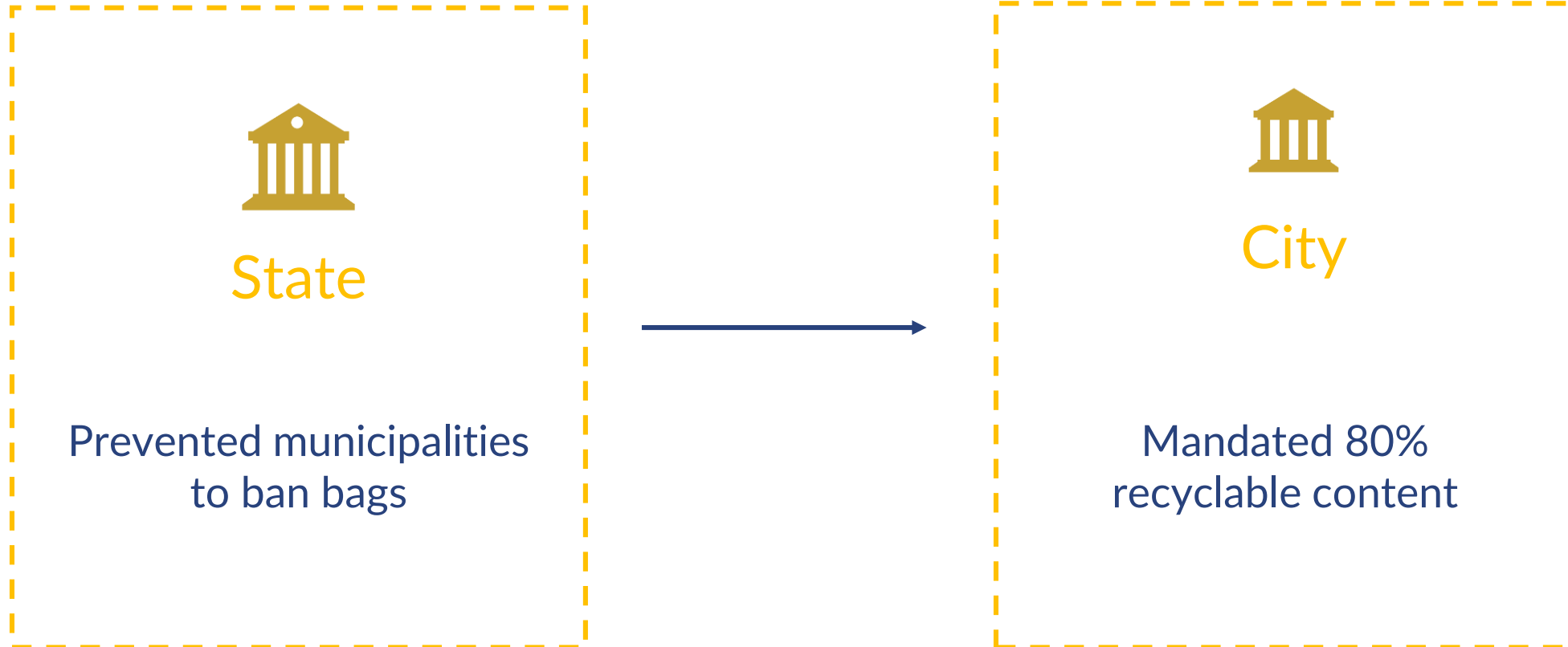


Do you feel State-Jacketed?

There could be workarounds

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Case of Austin





What if you cannot regulate?

You can still change behavior

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Case of Washington, D.C.



Consumers



Public education and
incentives can reduce
consumption

Case of Texas



Retailers



Profits from fee
makes business
sense

Cooperation: State and Local – Case of California

Hybrid
Model

Ban + 10 cent-fee

Encourage
Good
Behaviour

At-Store Recycling
Programs

Create
Recycling
Markets

Conditional loans to
bag manufacturers

THANK YOU

Questions are welcome

xy392@cornell.edu

www.mildredwarner.org/restructuring/preemption

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