

# State of Recycling

The Present and Future of Residential Recycling in the U.S.

January 31, 2024



**The Recycling  
Partnership**  
Solving for Circularity

We mobilize people, data, and solutions across the value chain to reduce waste and our impact on the environment while also unlocking economic benefits.



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# The Present and Future of Residential Recycling in the U.S.

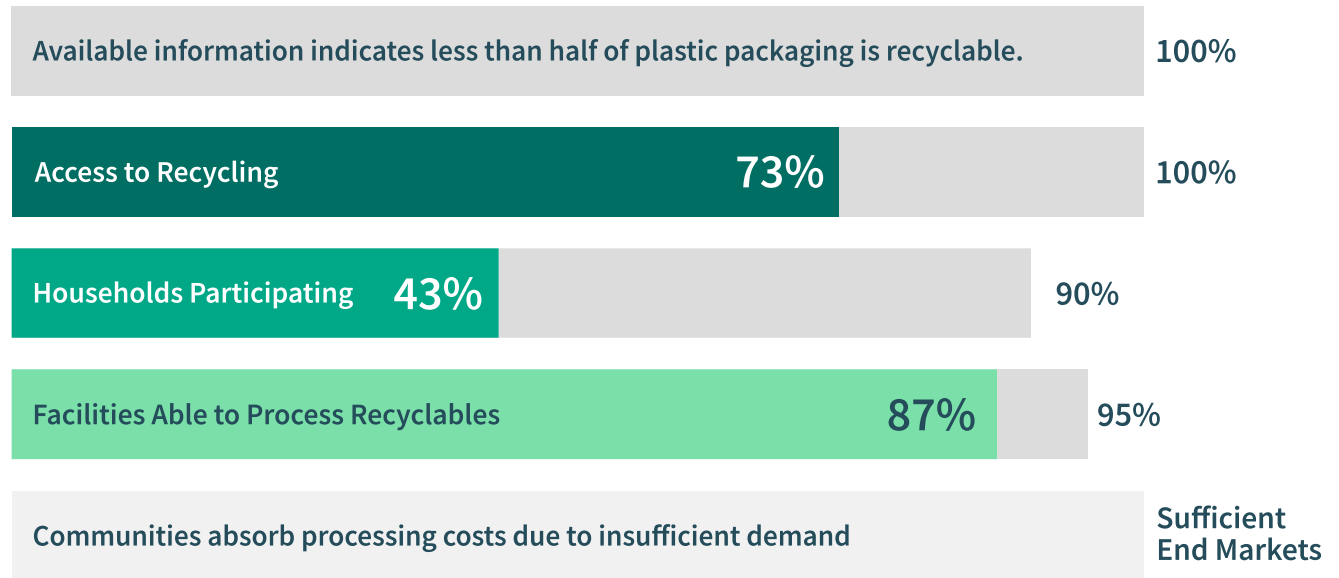
# Requirements of an Effective Recycling System

These five links in the circle are the essential requirements of an effective recycling system. Below we describe the gaps in our current system:

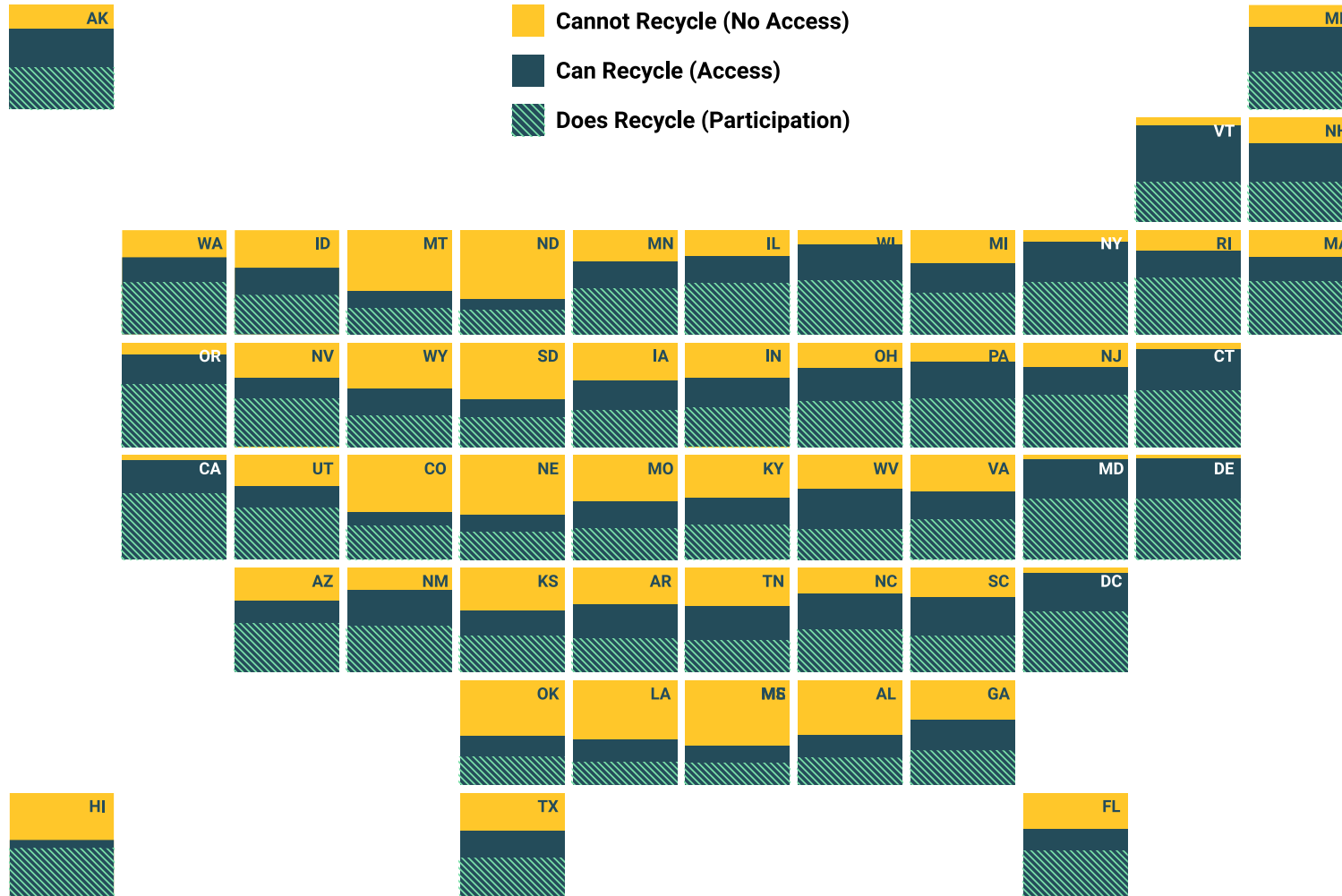


## Current Level

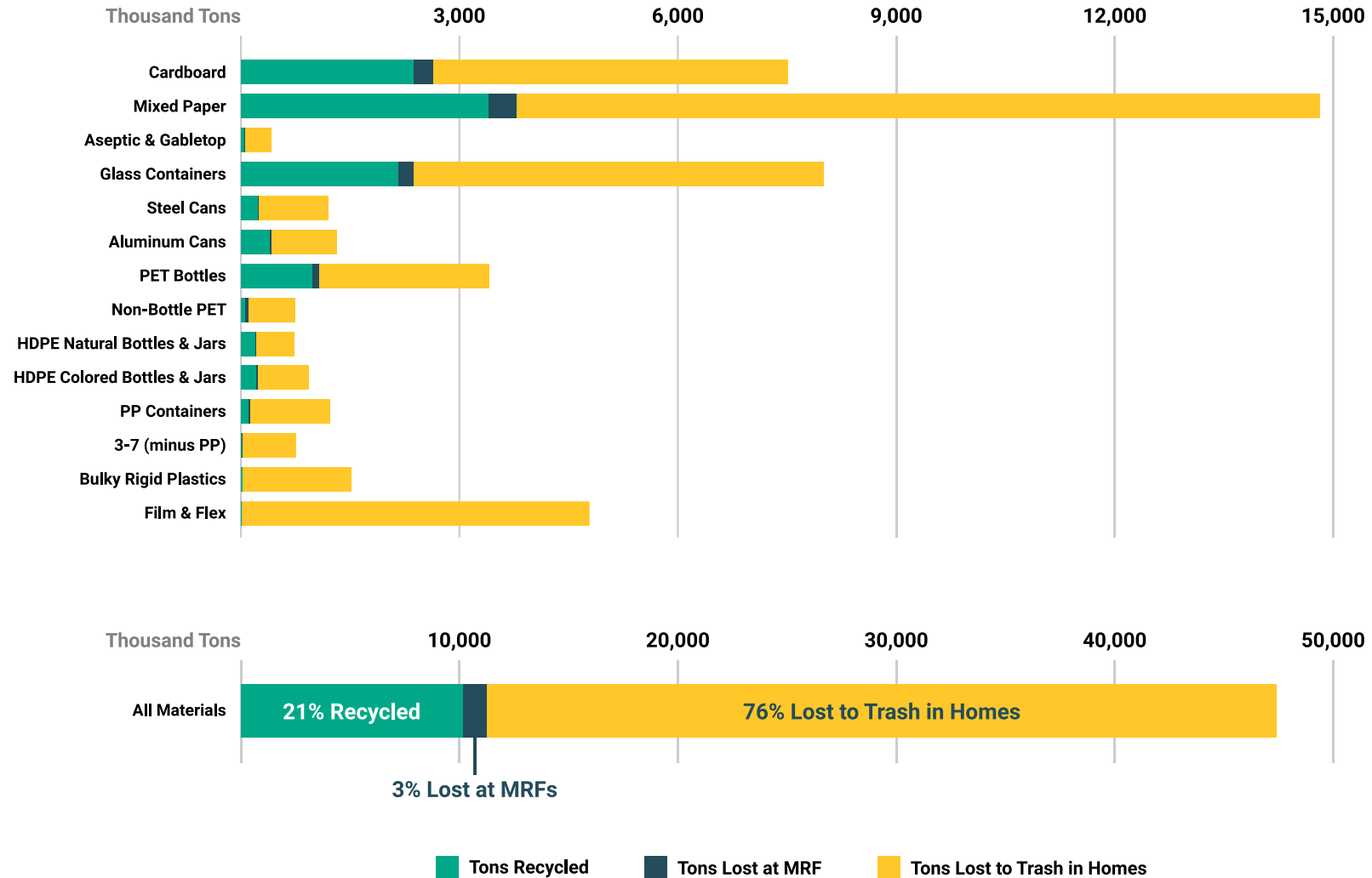
## Target Level



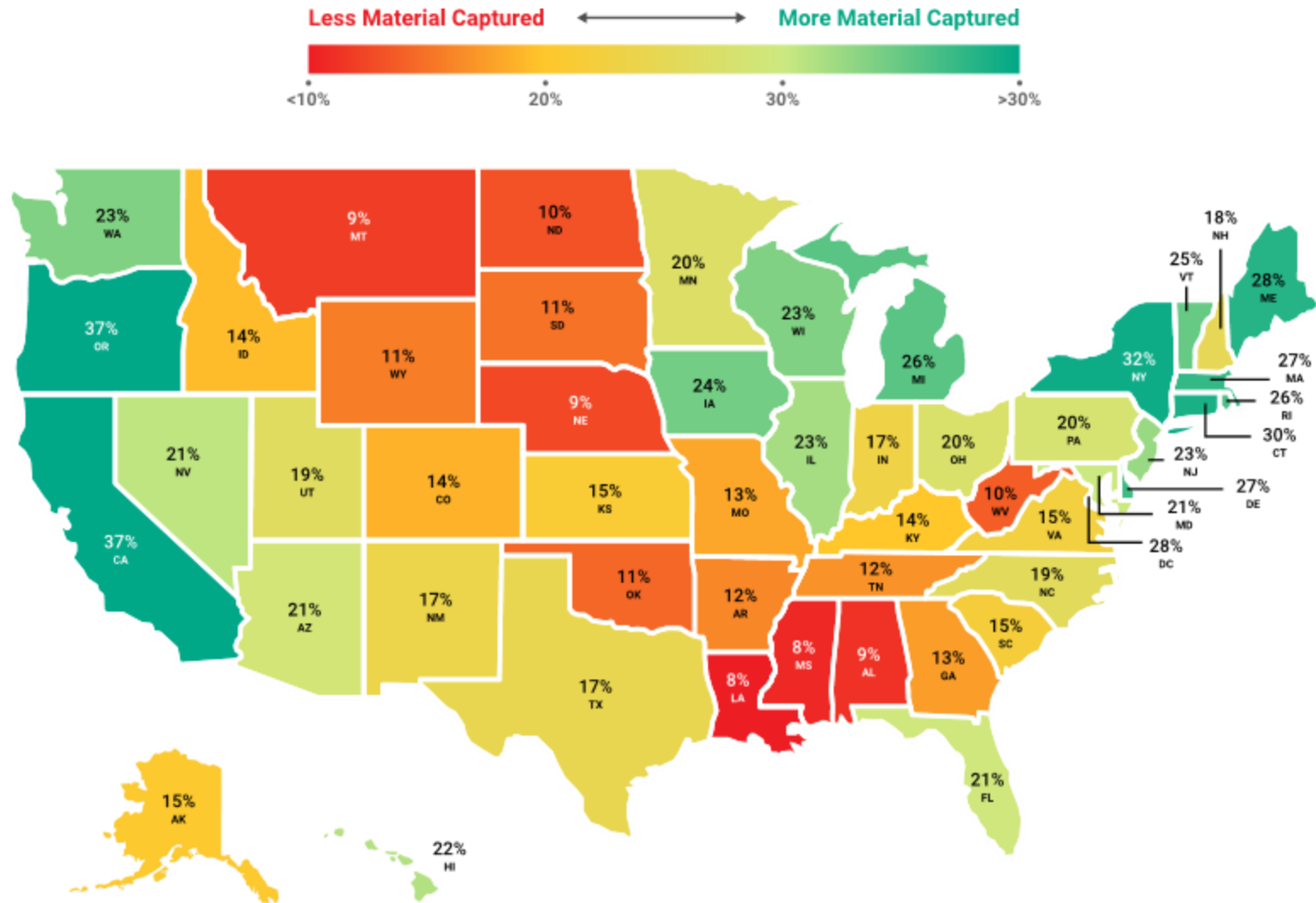
# State-by-State Levels of Recycling Access and Participation



# Fate of Material by Major Category

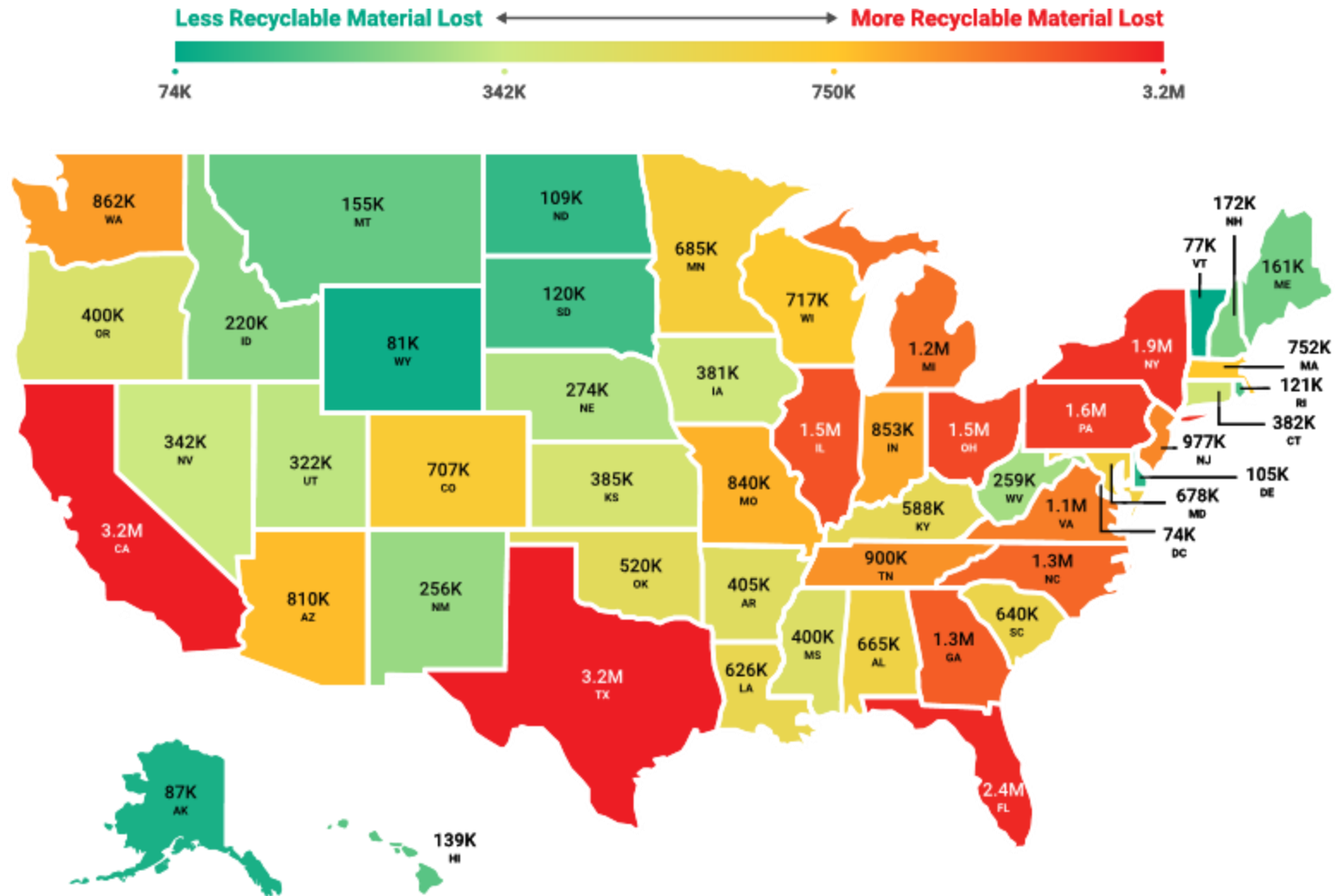


# State-by-State Residential Recycling Rates





# State-by-State Residential Recyclable Material Lost (in Tons Per Year)



# Projected Impact of EPR in Four Adopting States

(California, Colorado, Maine, and Oregon)

## Before implementation of EPR

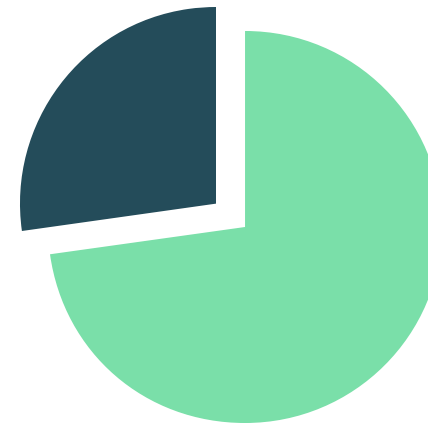


**34%** of material recycled

**2.25M tons**

of recyclables on average projected to be recycled in California, Colorado, Maine, and Oregon annually.

## After implementation of EPR



**69%** of material recycled

**4.65M tons**

of projected recyclables on average will be recycled in California, Colorado, Maine, and Oregon annually.

Implementation of EPR Policies takes 3-5 years following passage of legislation

# Targeted Investments for Maximum Impact

Data-driven, local solutions are key to overhauling the U.S. system



## Impact on Two EPR States

**Oregon & Colorado:** In addition to Maine & California, Oregon & Colorado's recent passage of EPR could bring more than 645,000 tons of recyclables to these two states. Needs assessments, single and multi family access, engagement, and expanded MRF processing activities are areas of need.



## Increase in Participation

**California** loses 3.2 million tons per year largely due to lack of engagement. 95% of Californians have recycling access, but state recycling rate is 37%. As part of its EPR implementation engagement will be key.



## Linchpin Cities

Because there are strong end markets and yet limited recycling in **Cleveland, Detroit, Indianapolis, Lubbock, Phoenix, & New Orleans**, these cities are critical for unlocking the regions that surround them. By focusing on access, engagement, and processing in these cities, the greater regions could likely see increased recovery of recyclables.



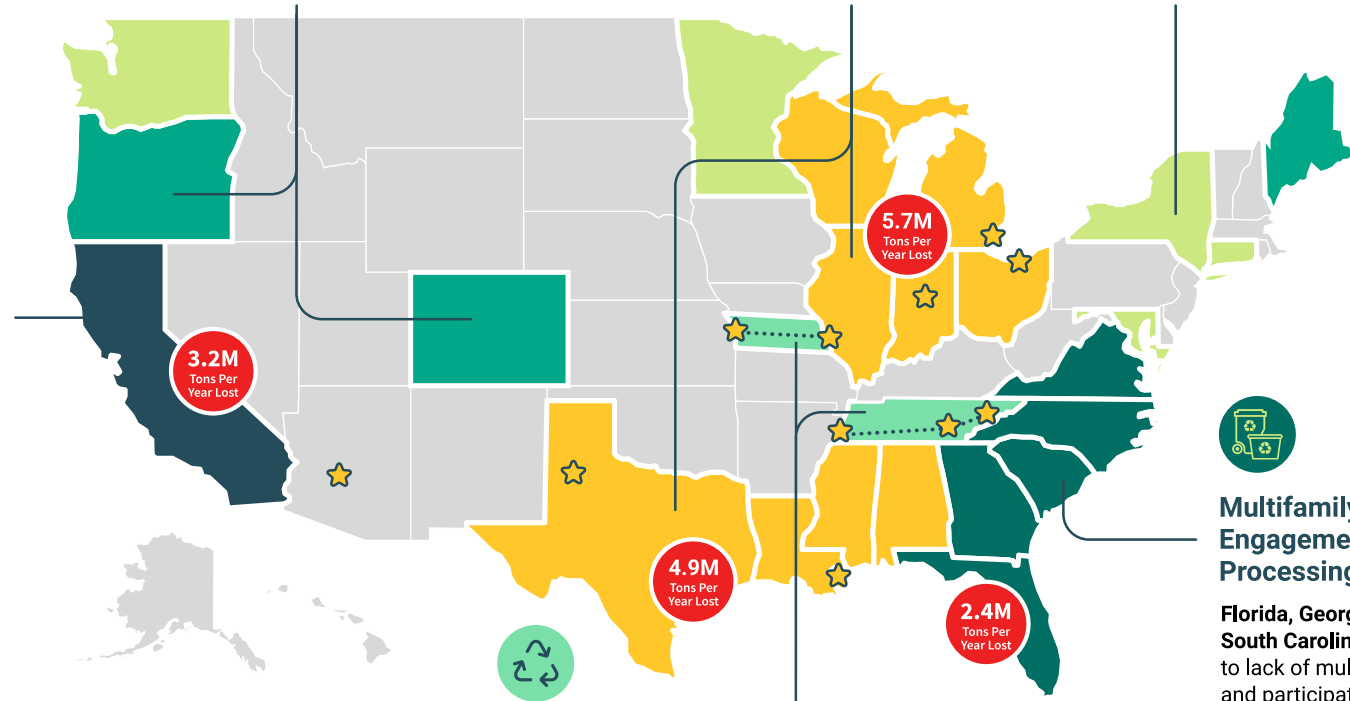
## Regional System Change

**Gulf Coast & Great Lakes:** These two regions collectively lose nearly 10.6M tons of recyclables annually. Comprehensive regional investment in single and multi family access, engagement, and MRF processing to expand recyclables accepted could bring big change for the country as a whole.



## Future EPR Opportunities

**Connecticut, Illinois, Maryland, Minnesota, New York & Washington:** These states, like many, could benefit from future EPR legislation, boosting recovery by more than 3.3 million tons annually.



## Micro-Regional System Change

**St. Louis - Kansas City Corridor and the Memphis, Chattanooga, & Knoxville Region:** Although processing and end markets exist, these metropolitan corridors generate large quantities of unrecovered recyclables. Focusing on access and participation in these regions could produce significant tonnage.



## Multifamily Access, Engagement, and Processing

**Florida, Georgia, North Carolina, South Carolina, & Virginia:** Due to lack of multi-family access and participation, these states have big opportunities to increase recycling rates. For example, Florida has 90% access for single-family homes, but only 16% for multifamily homes, and loses 2.4 million tons per year.



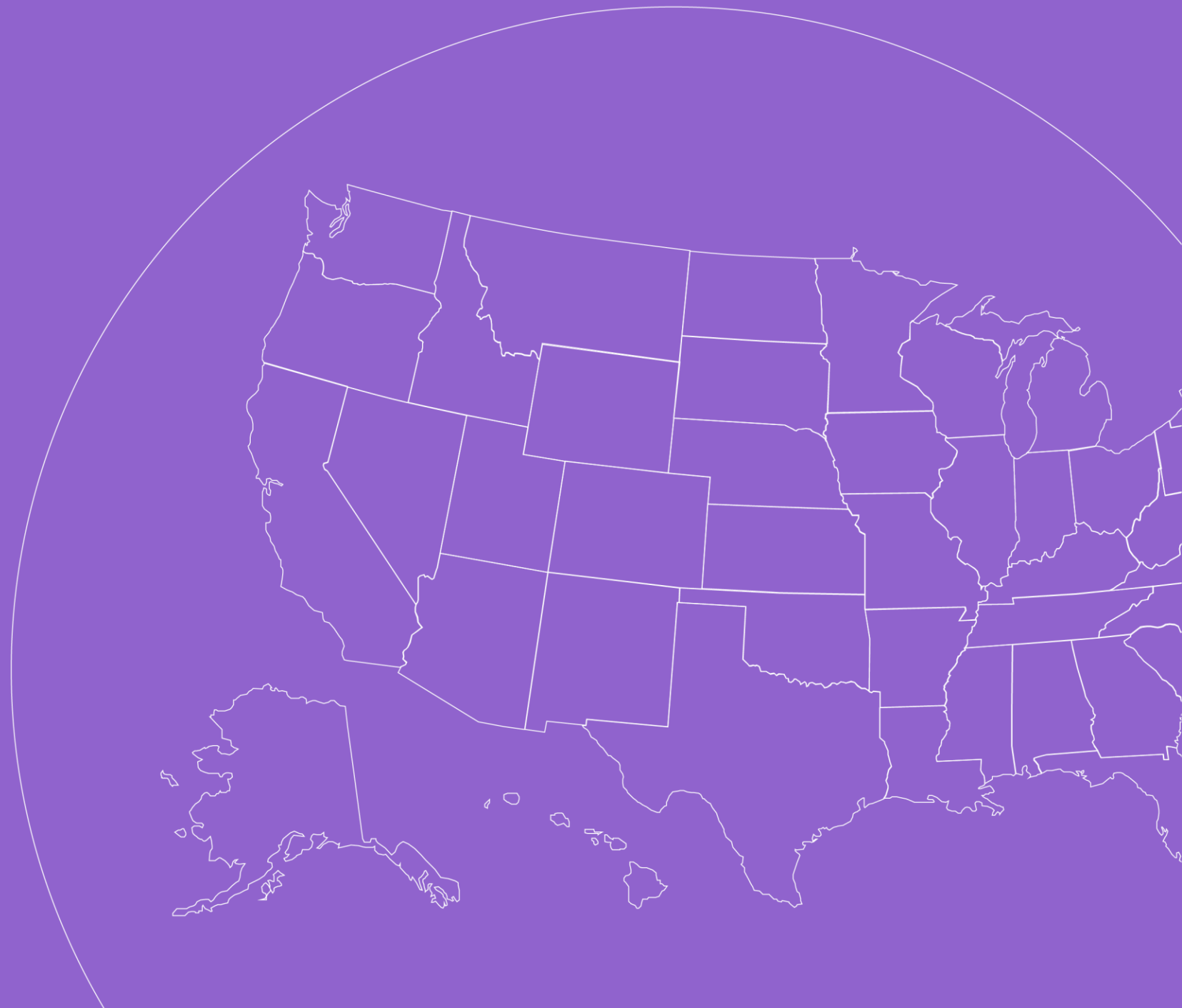
# 50 STATES OF RECYCLING 2.0

A State-by-State Assessment of 2021  
Containers and Packaging Recycling Rates

TRP By The Numbers Webinar:  
January 2024

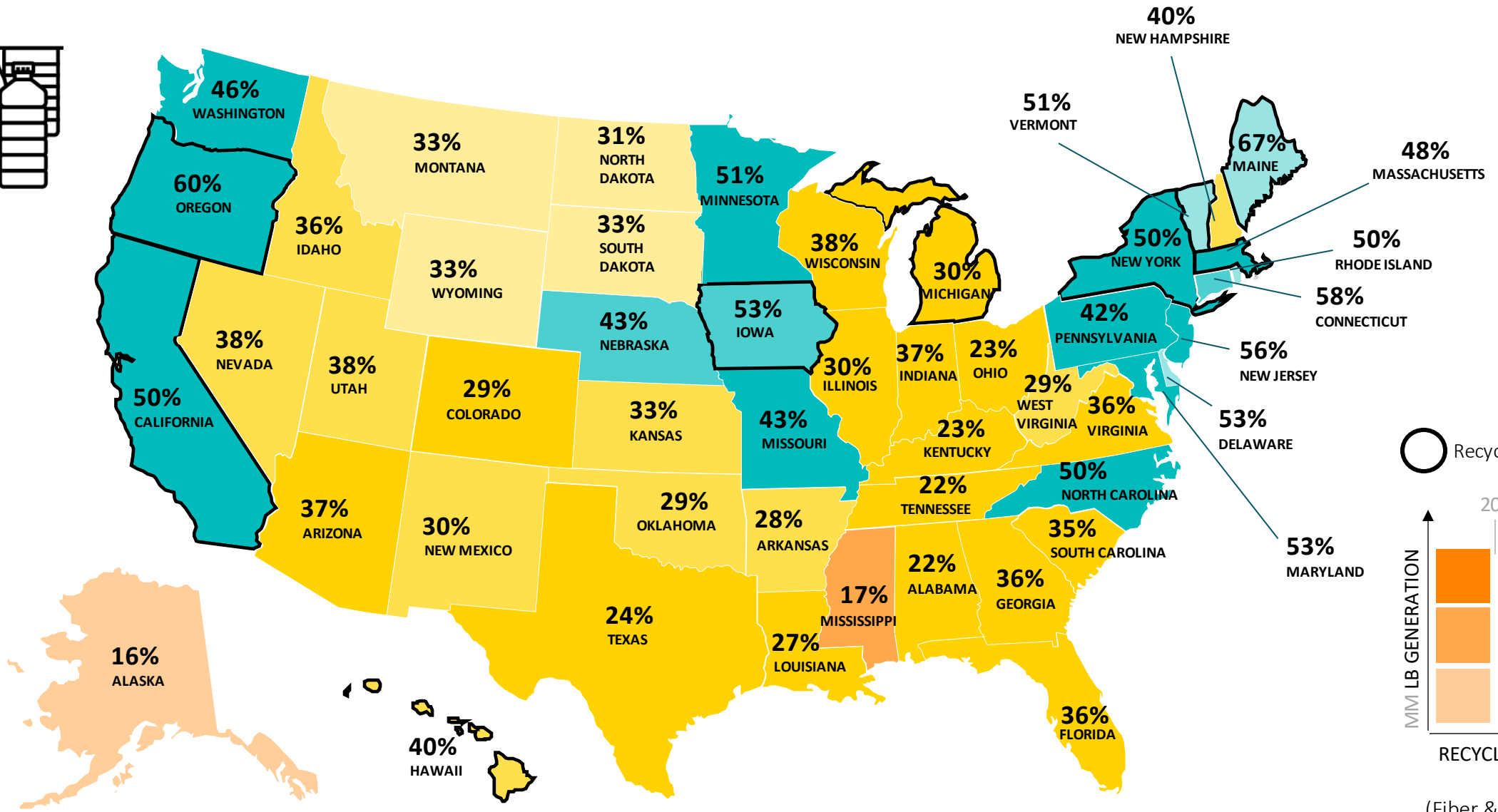


# Rankings & Impact Analysis

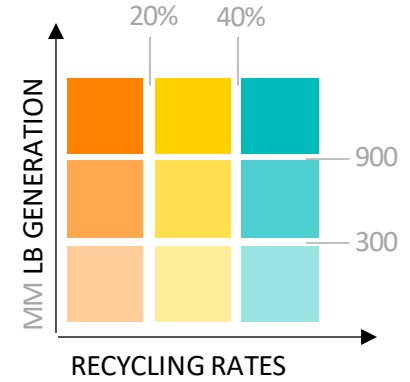


THE 50  
STATES OF  
RECYCLING

# US RECYCLING RATES PER STATE (INCLUDES FIBER & FLEXIBLE PLASTICS)

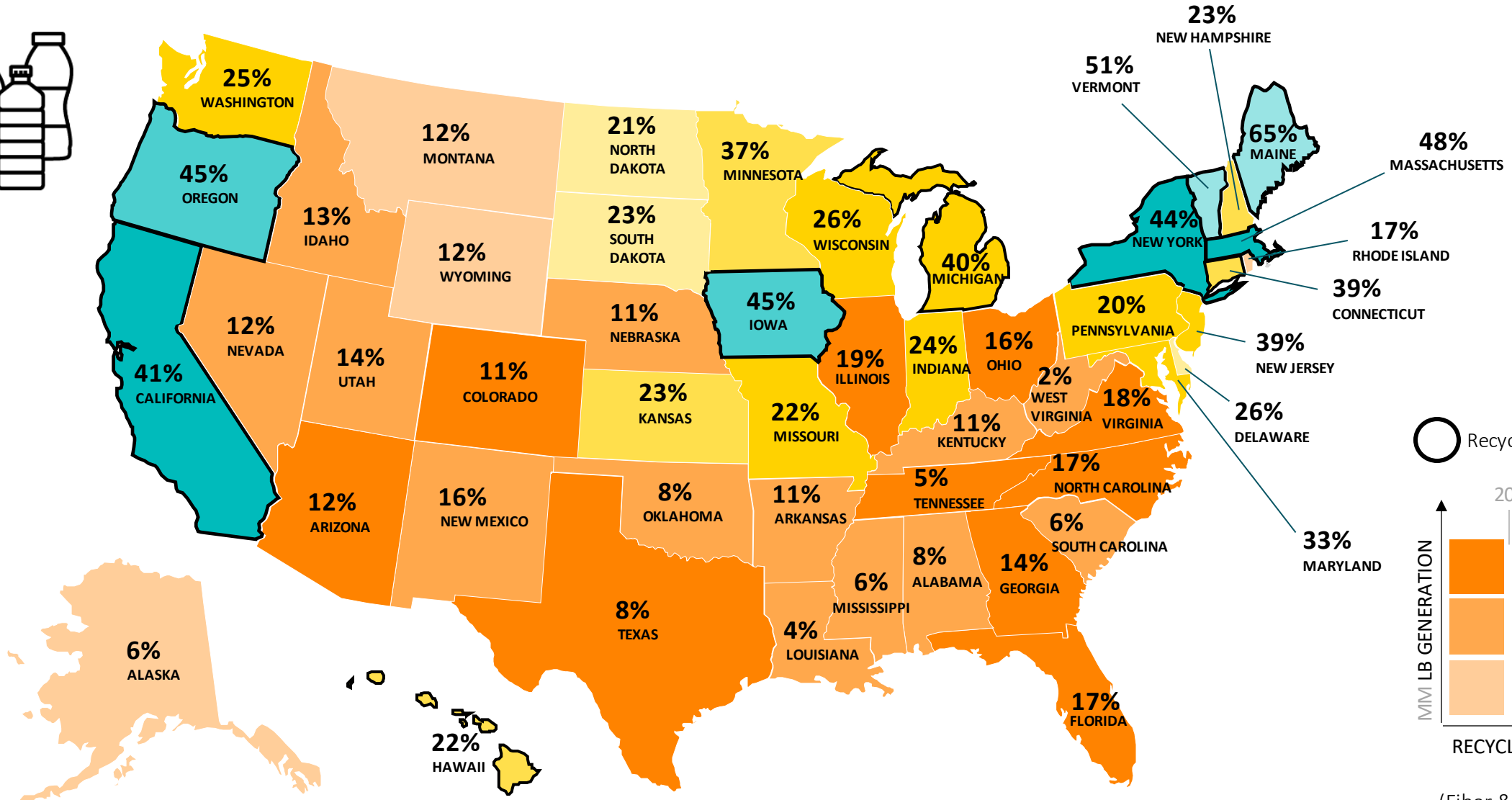


○ Recycling Refund State

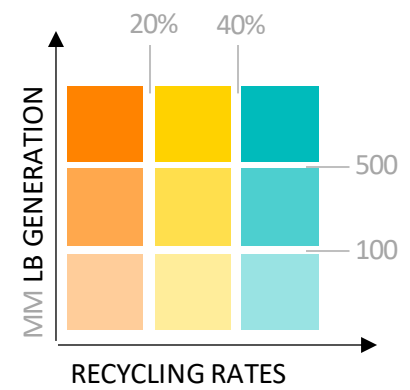


\*Includes FFP (Fiber & Flexible Plastics)

# US PACKAGING RECYCLING RATES BY STATE (EXCLUDES FIBER & FLEXIBLE PLASTICS)



○ Recycling Refund State



\*Excludes FFP (Fiber & Flexible Plastics)

# STATE RECYCLING RANKINGS: EXCLUDES FIBER & FLEXIBLE PLASTICS

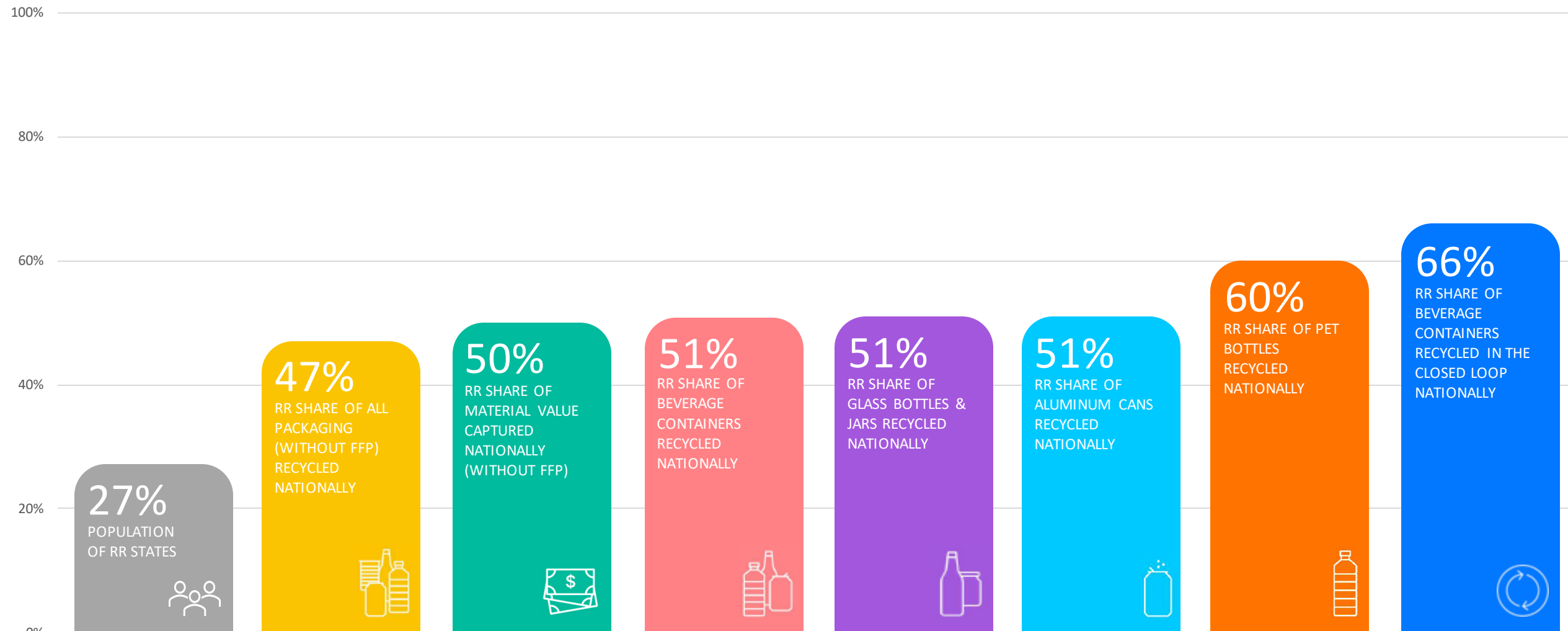
## TOP 10 & BOTTOM 10



RANKING: TOP 10	STATE	RECYCLING RATE	RECYCLING REFUND	RANKING: BOTTOM 10	STATE	RECYCLING RATE	RECYCLING REFUND
#1	Maine	65%	Yes	#41	Colorado	11%	No
#2	Vermont	51%	Yes	#42	Texas	8%	No
#3	Massachusetts	48%	Yes	#43	Alabama	8%	No
#4	Iowa	45%	Yes	#44	Oklahoma	8%	No
#5	Oregon	45%	Yes	#45	Mississippi	6%	No
#6	New York	44%	Yes	#46	South Carolina	6%	No
#7	California	41%	Yes	#47	Alaska	6%	No
#8	Michigan	40%	Yes	#48	Tennessee	5%	No
#9	New Jersey	39%	No	#49	Louisiana	4%	No
#10	Connecticut	39%	Yes	#50	West Virginia	2%	No



# THE 10 STATES WITH RECYCLING REFUNDS REPRESENT...



THE 50 STATES OF RECYCLING

# IMPLEMENTING EXTENDED PRODUCER RESPONSIBILITY (EPR) + RECYCLING REFUNDS (RR) PROGRAMS TOGETHER PROVIDES A MULTITUDE OF BENEFITS



**Accelerates Maximum Recovery Rates to Maximize Environmental Benefits:** Achieves highest beverage recycling rate and high overall packaging recycling rates.



**Enables Close Loop Recycling to Create a Strong Domestic Supply of Material:** RR provides better material quality which leads to more closed loop recycling.



**Maximizes Access & Convenience:** Include businesses, schools, parks, on-the-go and will serve to complement recovery rates from curbside EPR programs.



**Protects and Enhances Local Recycling Programs:** Well-designed EPR can support and financially offset the loss of beverage packaging for MRFs, this means that every material will need to pay its own way, via eco-modulated producer fees. EPR will also increase the total tons processed by MRFs. Implementing EPR+RR together enhances and bolsters curbside recycling programs



**Co-Develop Programs to Drive Efficiency:** Develop infrastructure in tandem to maximize efficiencies and cost savings. For example, RR sites can serve as drop-offs for EPR or other hard to recycle materials.

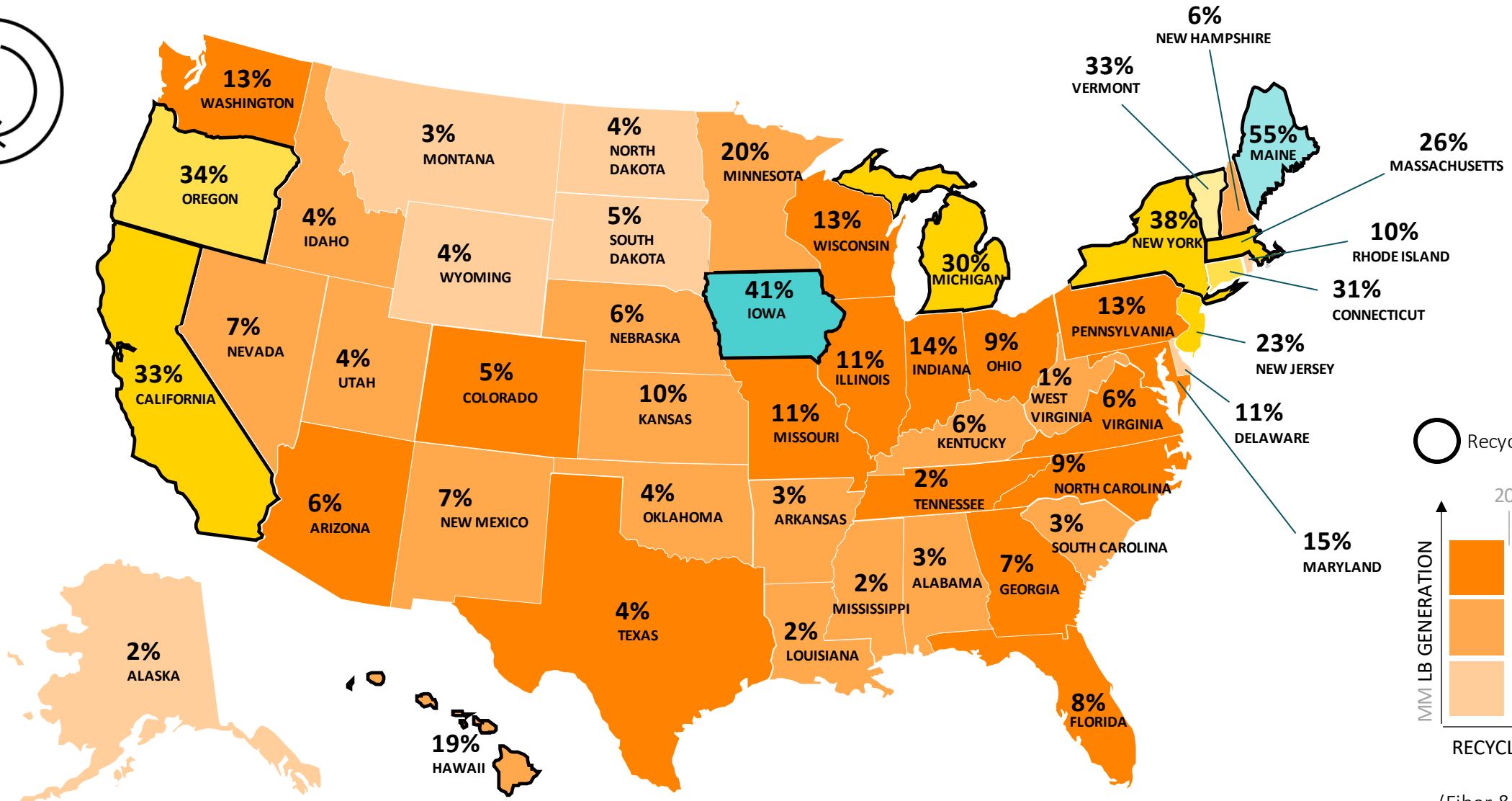
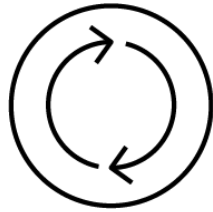



**Litter Prevention:** RR programs have up to 84% less littered beverage containers than states without a RR. Reduce overall litter by up to 65%.

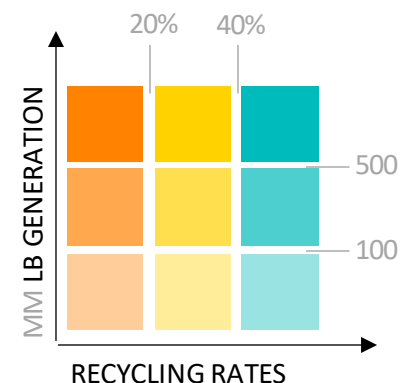


**Expands Reuse and Refill Opportunities:** Environmental NGOs are advocating for refill in EPR, but RR provides the mechanism to achieve this.

# CURRENT CLOSED LOOP RECYCLING (%) W/O FFP

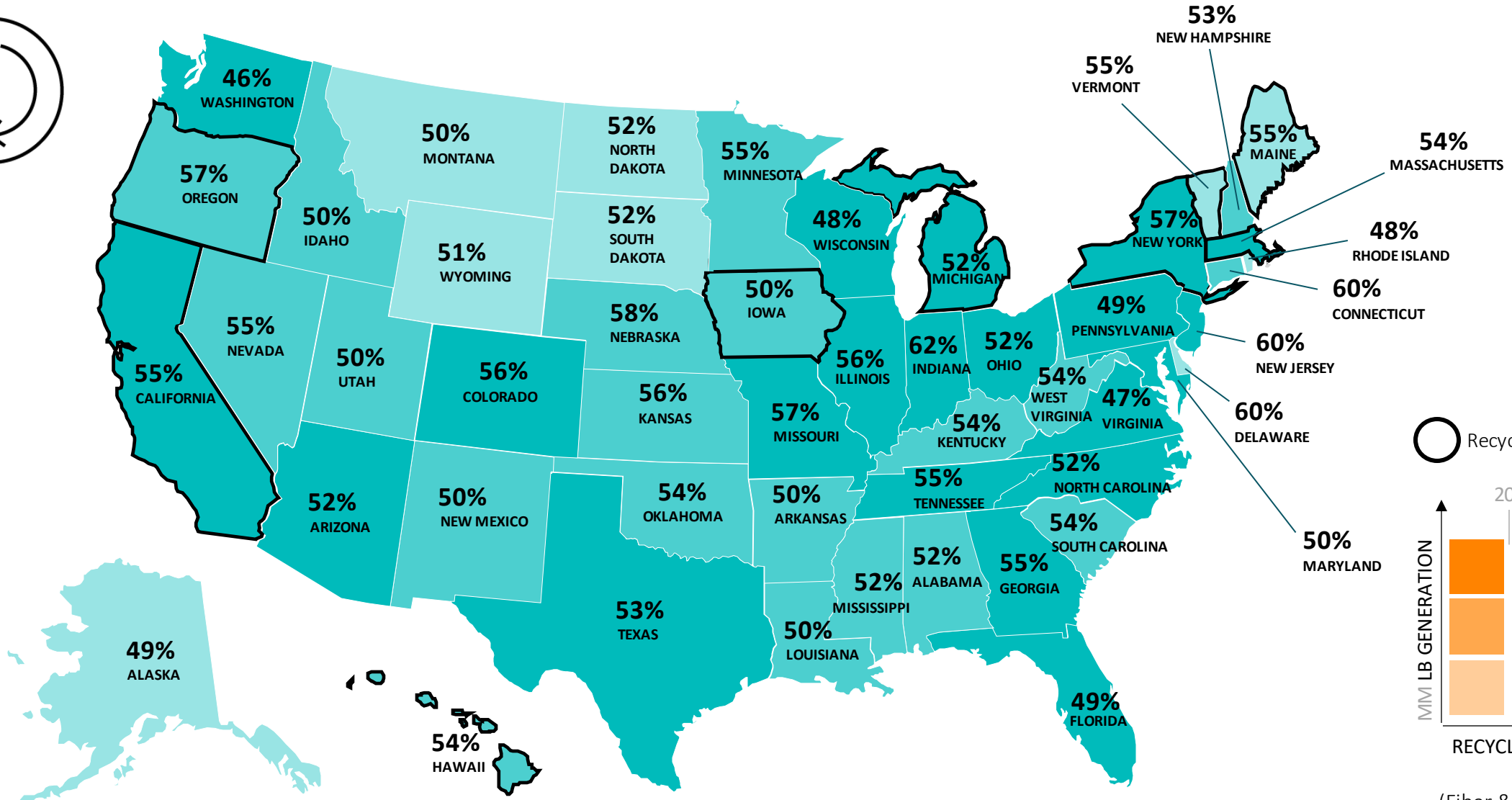
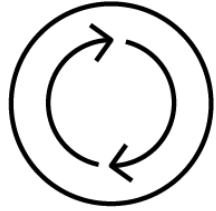


 Recycling Refund State

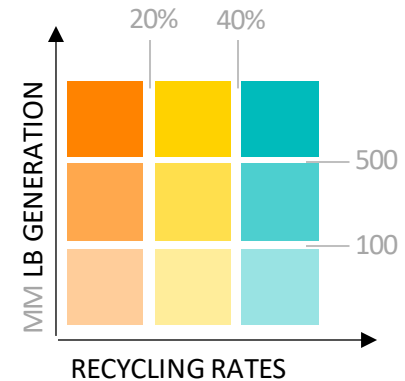


\*Excludes FFP (Fiber & Flexible Plastics)

# FUTURE STATE EPR+RR: CLOSED LOOP RECYCLING (%) W/O FFP



Recycling Refund State



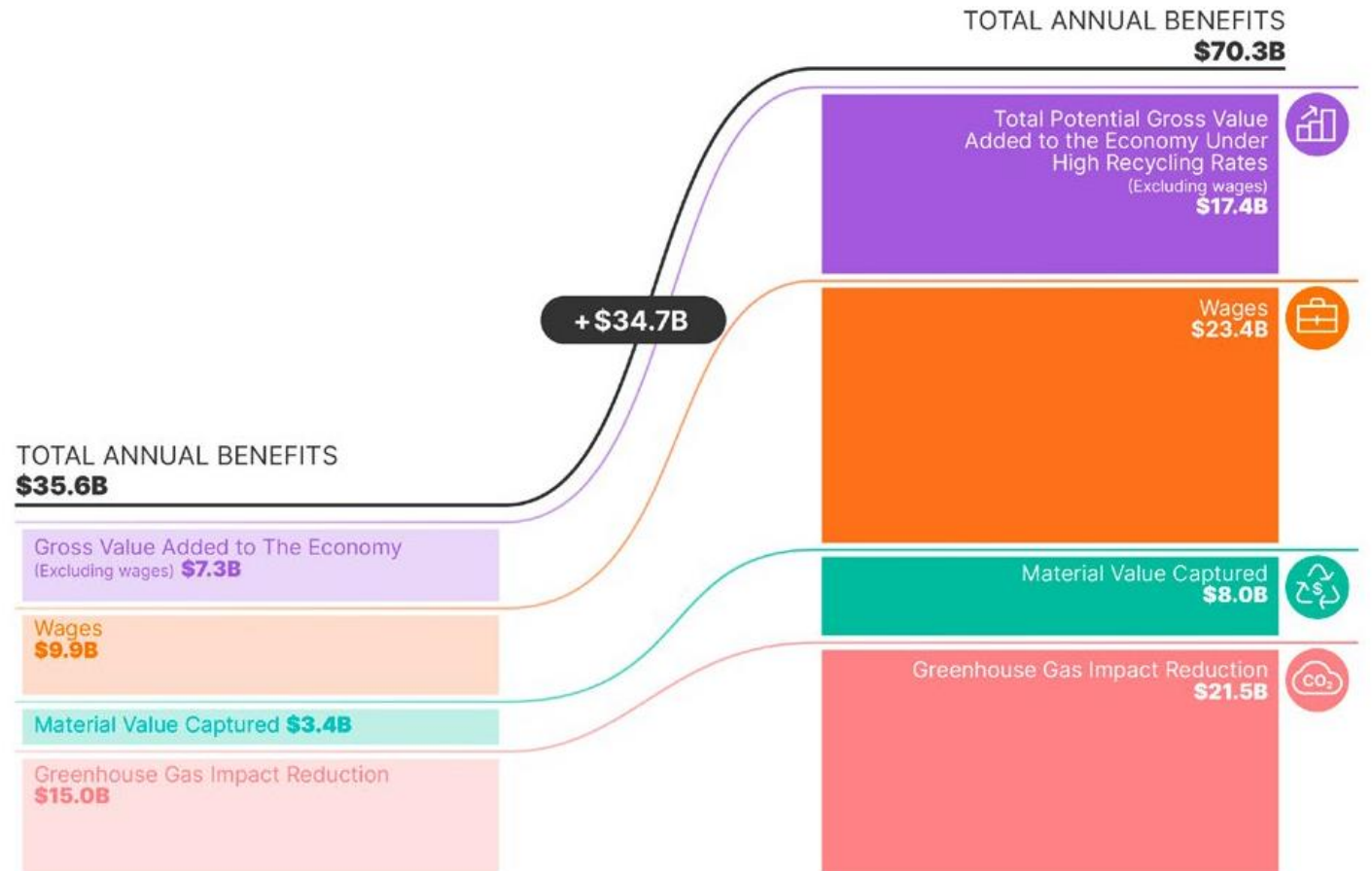
\*Excludes FFP (Fiber & Flexible Plastics)

# ECONOMIC & ENVIRONMENTAL OUTCOMES EPR+RR AT A NATIONAL LEVEL

Nationally a 24% recycling rate provide approximately \$35 billion in economic and environmental benefits annually.

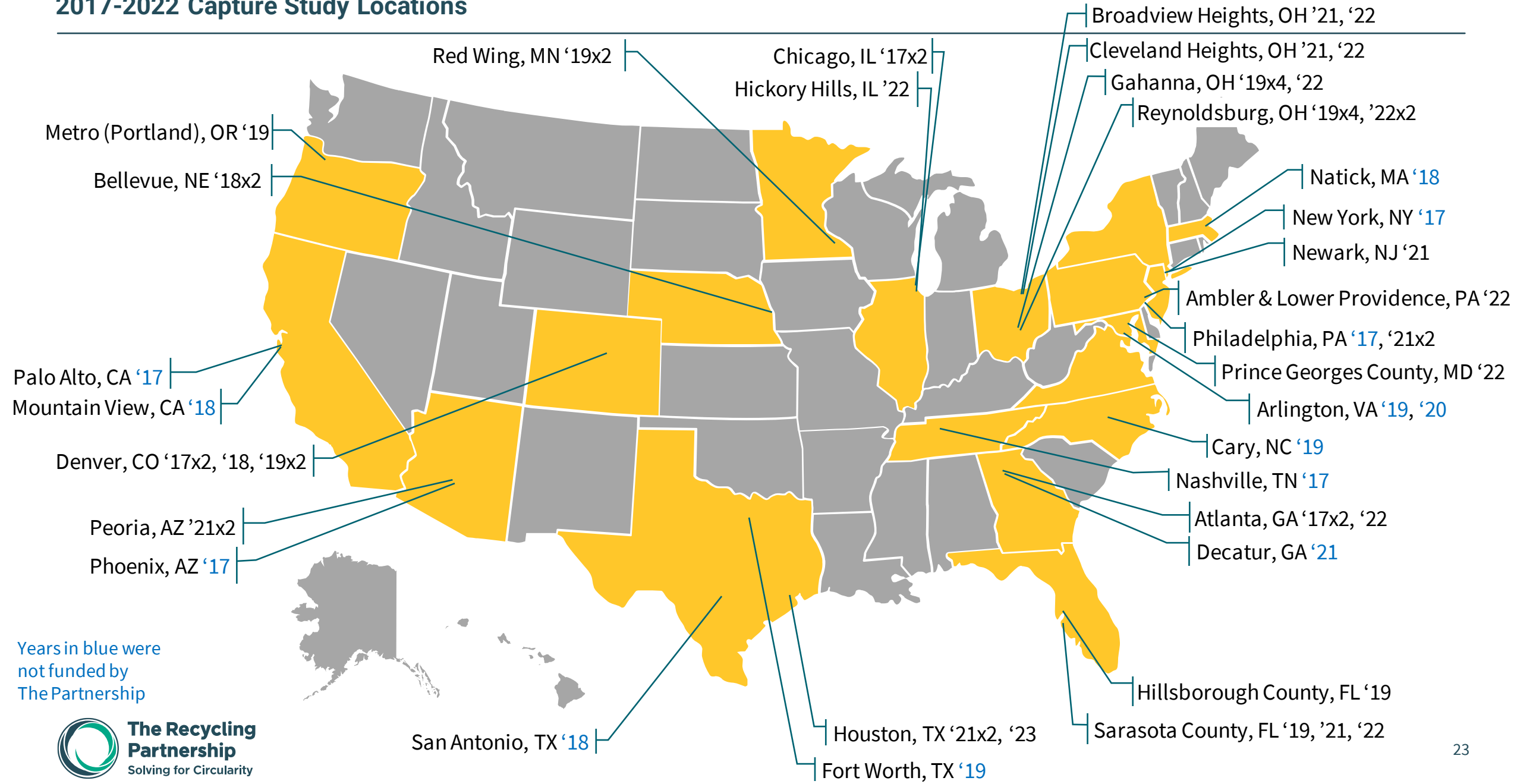
If effective recycling policies were enacted nationwide such as pairing **Extended Producer Policy alongside Recycling Refunds** the benefit of recycling would double to \$70 billion

- EPR assumes a 65% overall recycling rate for residential packaging
- RR assumes a 90% recycling rate for all beverage containers



# Methodology

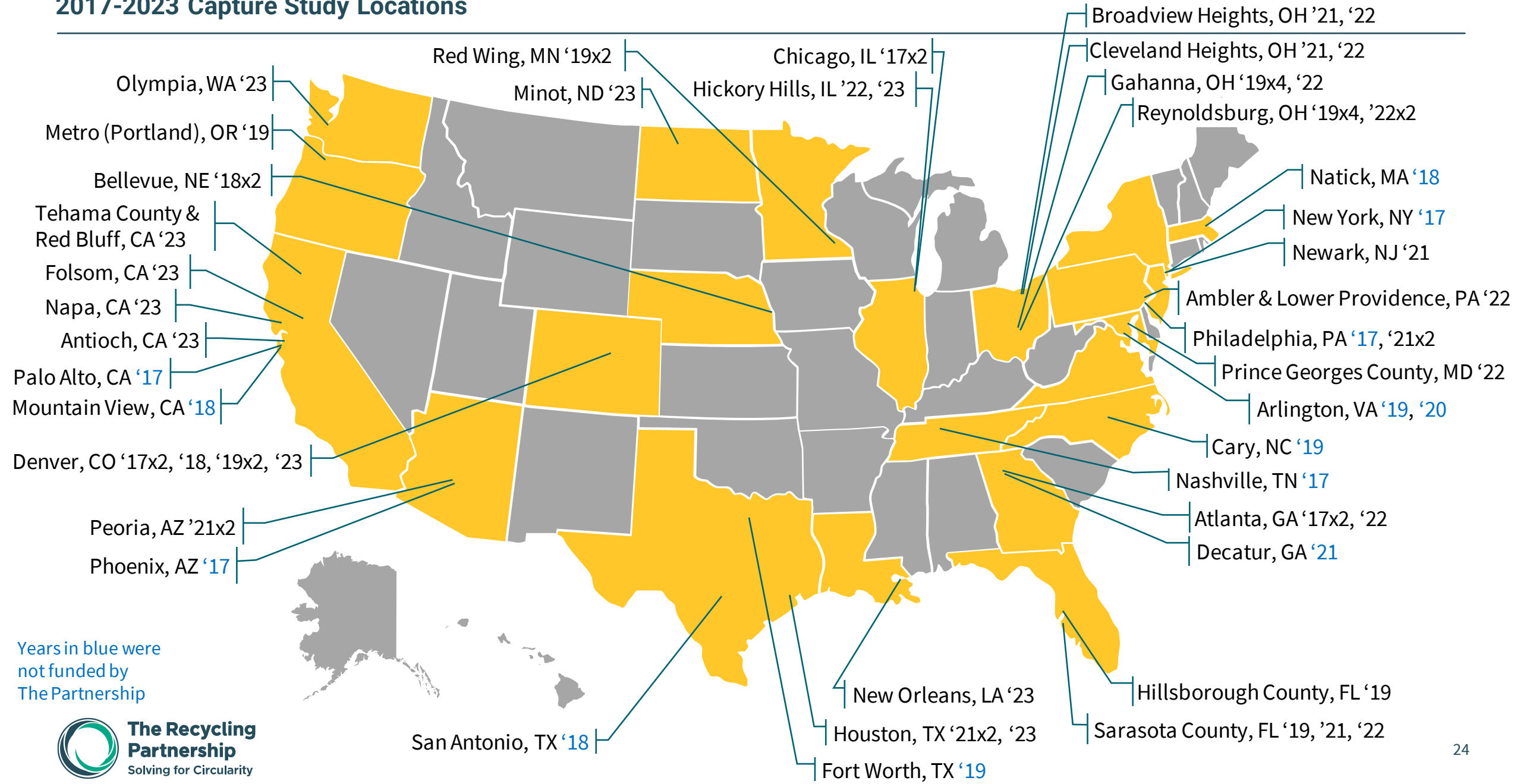
# 2017-2022 Capture Study Locations



Years in blue were not funded by The Partnership



# 2017-2023 Capture Study Locations



Years in blue were not funded by The Partnership





# Building on the Analysis from the First Report

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In 2021, Eunomia Research & Consulting and the Ball Corporation released the inaugural edition of the 50 States of Recycling Report, a first-of-its-kind state-by-state comparable assessment of common packaging materials based on 2018 data. This calculation set a baseline in each state that can be used to inform policy, design programs, and assess infrastructure needs.

## **The 50 States of Recycling 2.0 Methodology:**

Purpose is to achieve an analysis which allows for equal comparison of recycling rates across states, rather than to estimate an overall national recycling rate.

To achieve state by state granularity, state level data such as waste characterizations, MRF facility reports, municipal collections data and smaller scale sampling are used in our analysis.

This is contrasted with measuring the tonnage of a material which are input into a recycler, which presents constraints to geographic traceability of the material.

# BUILDING ON THE COMPARABLE STATE-BY-STATE RECYCLING RATE FOR CONTAINERS AND PACKAGING WE CREATED IN 2021

The 50 States of Recycling 2.0 provides an update to this analysis, the state recycling rankings are based on the recycling rate of packaging materials minus cardboard, boxboard, paper packaging, plastic films, and flexible plastic packaging – referred to as fiber and flexible plastics (FFP).

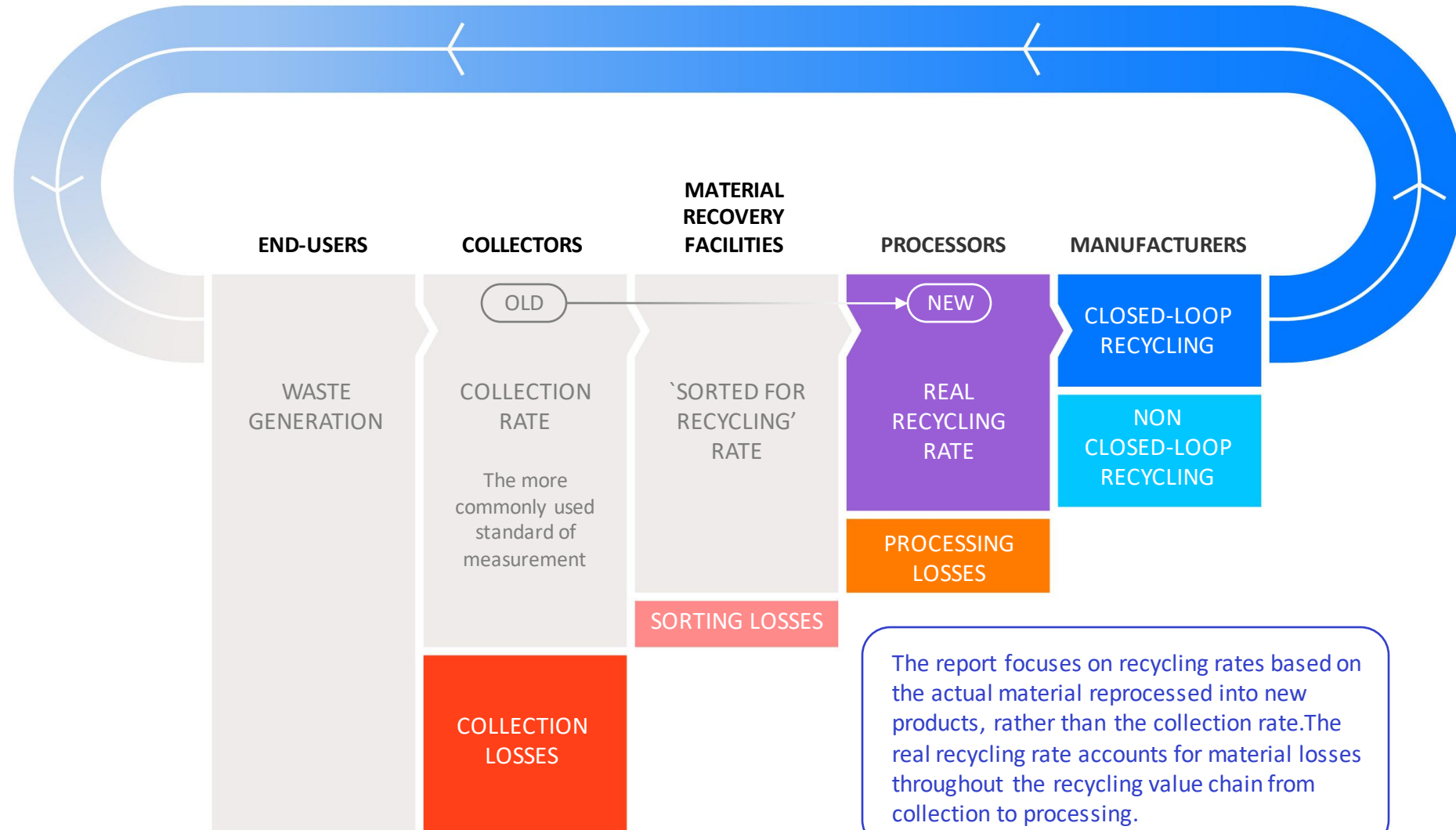
While the recycling of these materials is important, **their large volumes -- 66% of the total weight of packaging analyzed – they mask the performance of other packaging materials.** In addition to volume, much of this material comes from the commercial sector from which the data is less accurate.



# THE REAL RECYCLING RATE MEASURES THE QUANTITY OF MATERIAL THAT IS ACTUALLY RECYCLED AND RE-INCORPORATED INTO A NEW PRODUCT

Collection and recycling are not synonymous, as the quantity of material collected for recycling today is often greater than what is actually processed and recycled into new products. The **real recycling** rate measures the quantity of material that is **actually recycled** and re-incorporated into a new product. All recycling rates presented in this report are the real recycling rate.

It is only when a recycled material makes it into a new product that we begin to obtain environmental benefit to offset the impacts of the collection, sorting and recycling processes.





# Questions

# Workshop: Unlocking Recycling's Potential:

A Workshop on Behavior Change, Habits, and Equity



February 21<sup>st</sup>  
& 22<sup>nd</sup> 2024

Mitchell Park  
Community Center  
Palo Alto, California

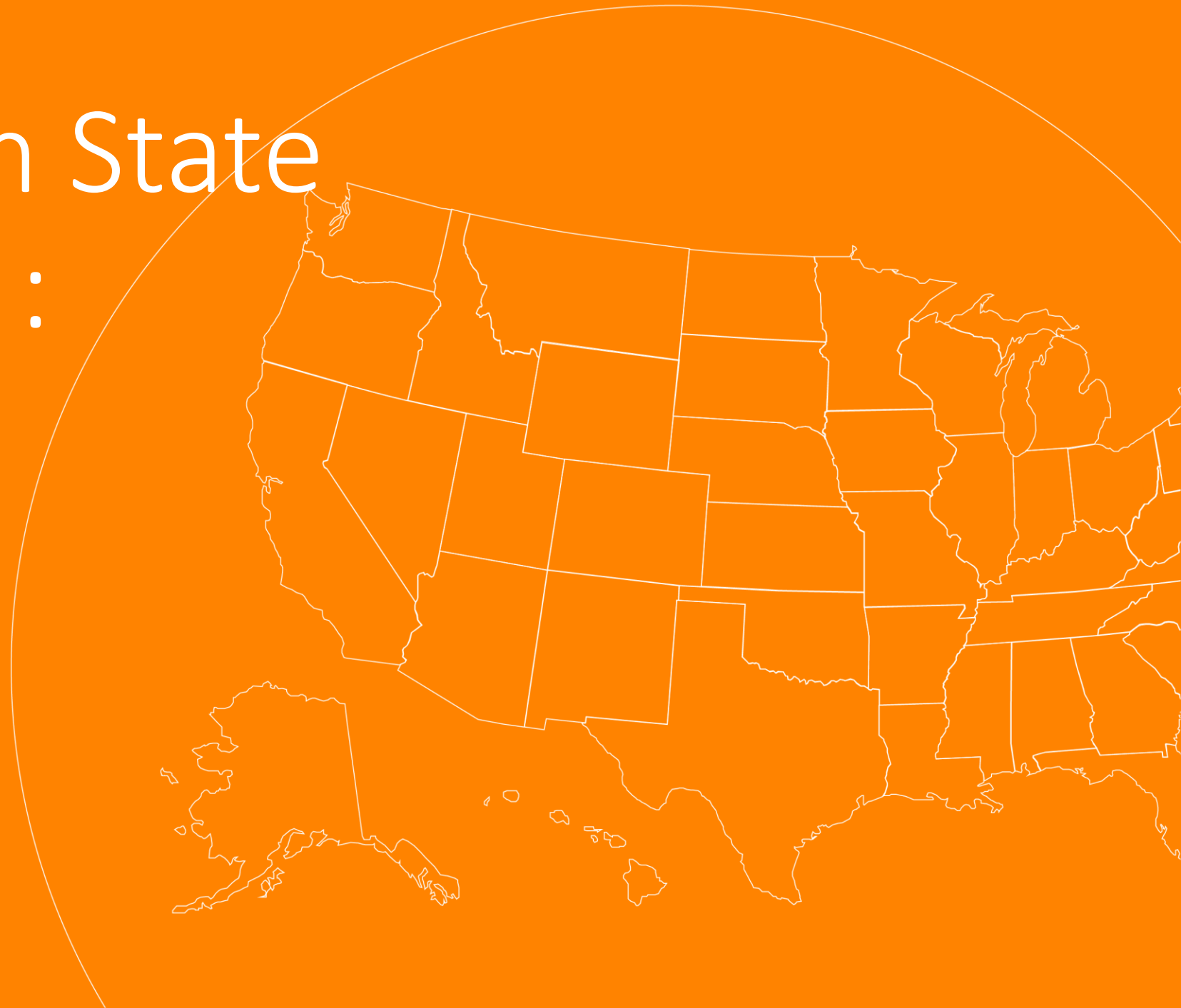
Hosted by **The Recycling Partnership**, in collaboration with **Rare's Center for Behavior & The Environment**

More info at: <https://recyclingpartnership.org/california-workshop/>

# Washington State Case Study : Impact of RR+EPR



THE 50  
STATES OF  
RECYCLING





# RR+EPR DELIVERS BETTER PERFORMANCE AT FASTER PACE – DELIVERING MAXIMUM RECYCLING RATES FOR WASHINGTON BEVERAGE CONTAINERS

While EPR can be an important first step to increasing recycling rates for beverage packaging, relying on EPR alone likely will not result the high recycling rates needed to meet Washington's PCR targets.

Baseline: 30% recycling rate

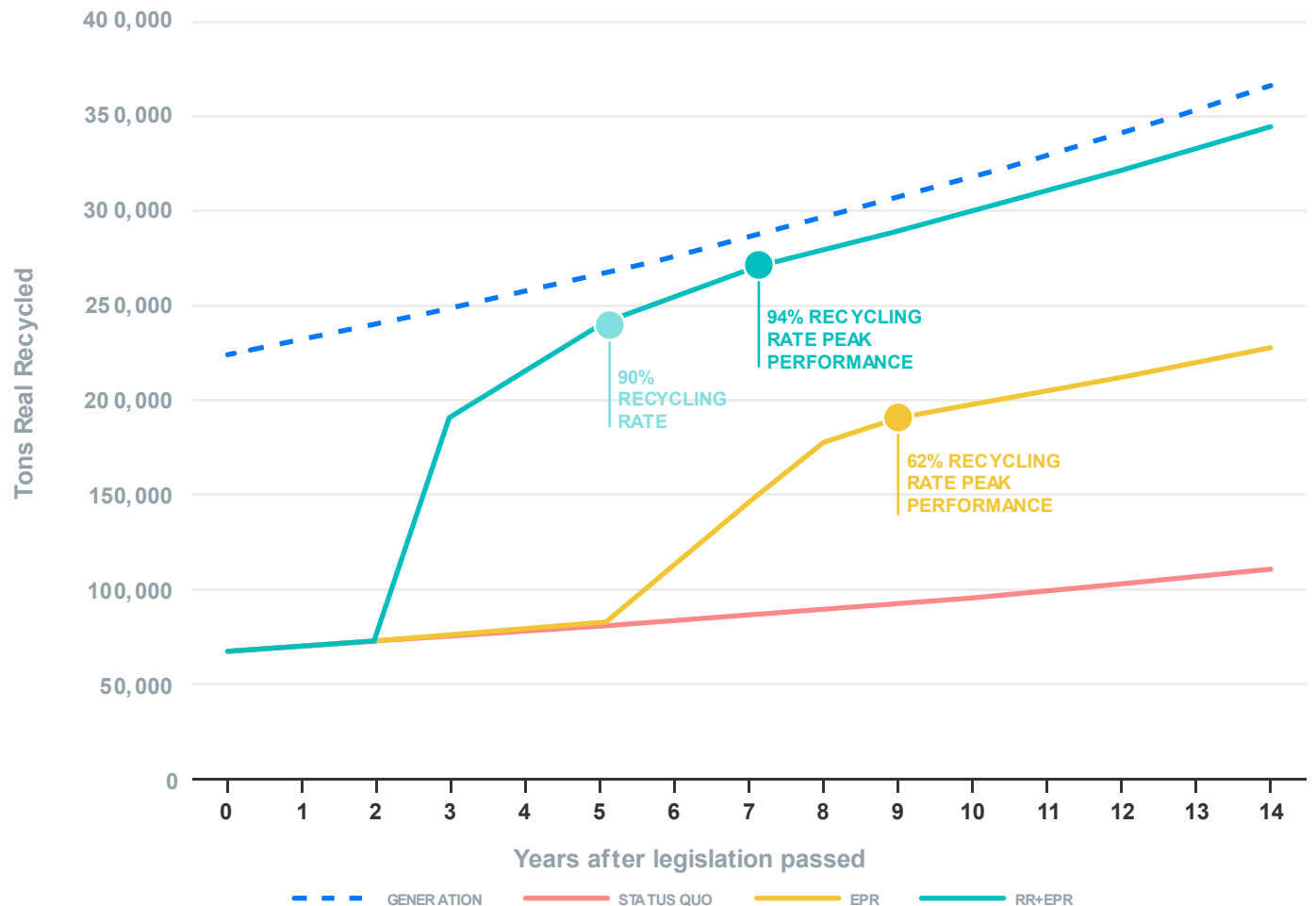
EPR alone is estimated to achieve a peak recycling rate of 62% within 9 years

However, RR+EPR leads to accelerated progress:

- 90% recycling rate by year 5
- 94% recycling rate by year 7

Due to the implementation timeline differences – RR would recycle approximately 411,000 more tons of packaging material before the full effects of EPR investment are realized.

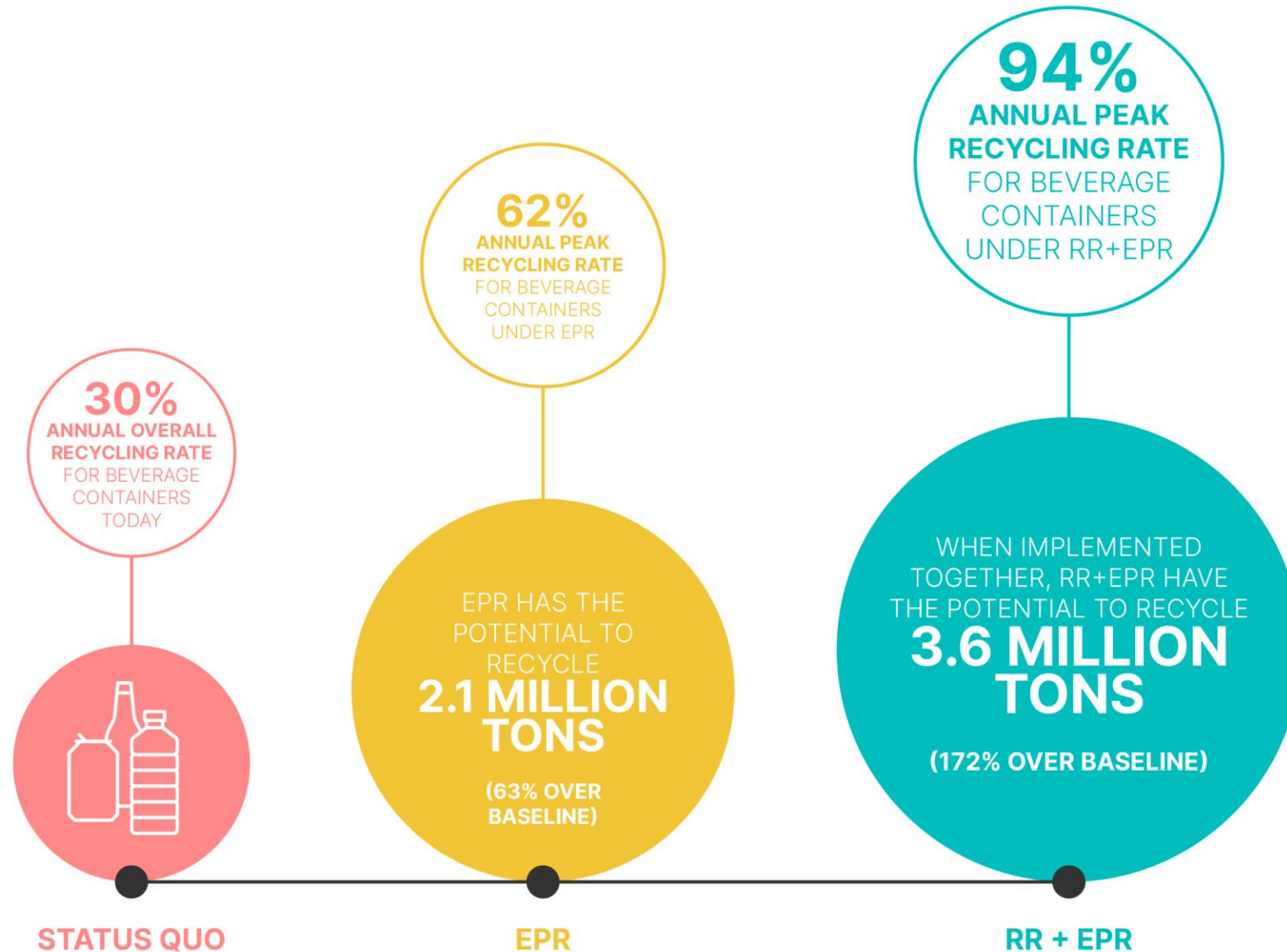
## Impact of Policy on Beverage Container Recycling in Washington



THE 50 STATES OF RECYCLING



# IMPACT OF POLICY ON CUMULATIVE BEVERAGE CONTAINER TONS RECYCLED OVER 15 YEARS



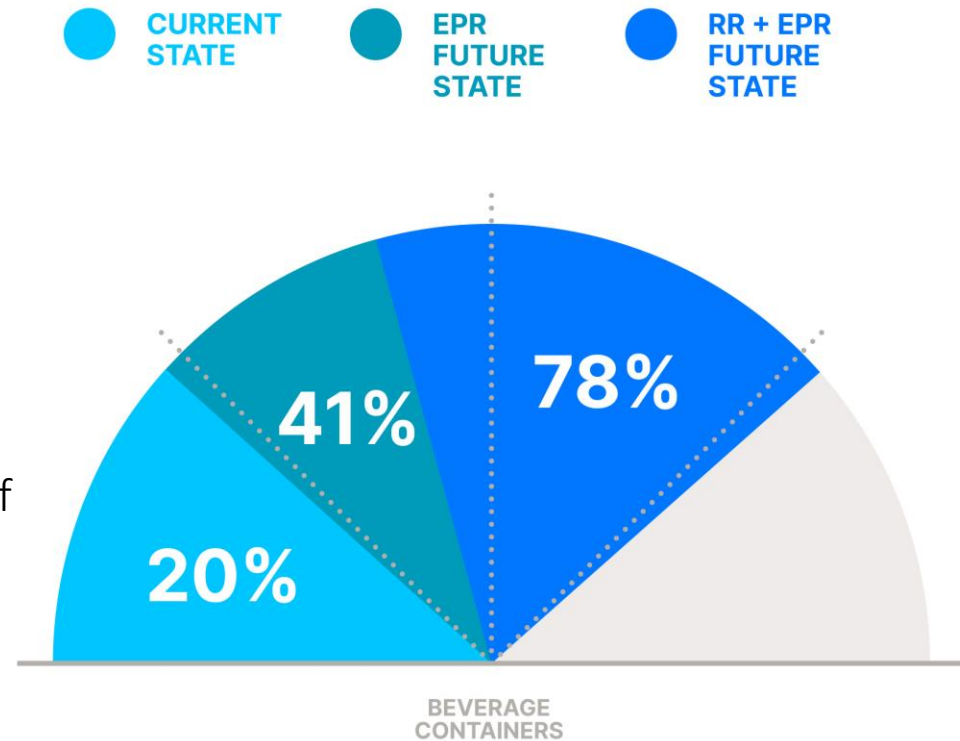
# ADDITIONAL ENVIRONMENTAL BENEFITS

## Increases Closed-Loop Recycling

- EPR alone could achieve a 41% Closed-Loop Recycling Rate
- RR+EPR could achieve a 78% Closed-Loop Recycling Rate (3x the tons in the status quo)

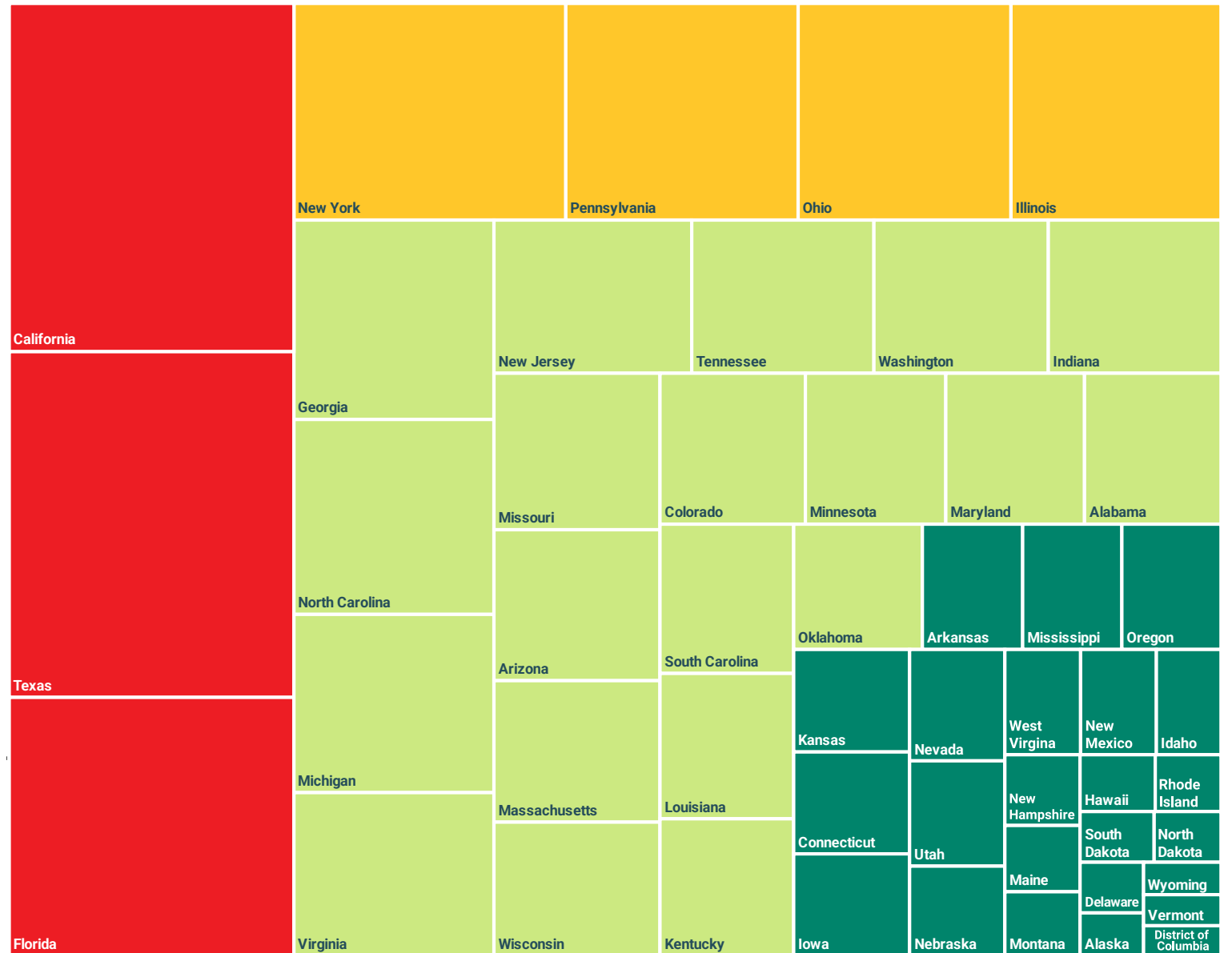
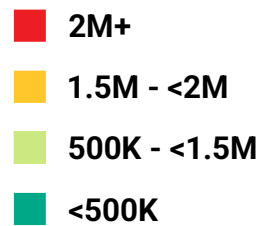
## Curtails Packaging Related Emissions by 70%

- RR+EPR curtail emissions linked to the creation, recycling, and landfilling of packaging materials 70% - a reduction of 282,000 MTCO<sub>2</sub>e.



# Tons Lost Per State Annually

An additional perspective on recyclable material lost by each state highlighting the states that lose the largest and smallest quantities of residential recyclable material in tons per year



# State-by-State Residential Recycling Rates by Commodity

	Cardboard	Mixed Paper	Aseptic & Gabletop	Glass Containers	Steel Cans	Aluminum Cans	PET Bottles	Non-bottle PET	HDPE Natural Bottles & Jars	HDPE Colored Bottles & Jars	PP	Plastics #3,4,6,7	Bulky Rigid Plastics	Film
Missouri	21%	15%	5%	11%	13%	14%	13%	6%	17%	15%	6%	0.5%	0.1%	0.03%
Montana	18%	12%	1%	3%	11%	12%	10%	3%	12%	11%	2%	0.03%	0%	0.2%
Nebraska	18%	11%	6%	1%	11%	12%	11%	6%	14%	13%	5%	1%	0%	0.02%
Nevada	35%	25%	11%	22%	21%	23%	22%	10%	28%	25%	10%	1%	0.1%	0%
New Hampshire	29%	21%	4%	20%	17%	19%	18%	9%	22%	20%	7%	2%	0.4%	0.03%
New Jersey	37%	27%	7%	28%	23%	25%	24%	10%	30%	27%	7%	0.4%	0.2%	0.01%
New Mexico	32%	23%	10%	2%	19%	22%	20%	10%	25%	22%	9%	6%	6%	0.02%
New York	35%	26%	11%	57%	22%	61%	59%	10%	29%	25%	10%	1%	7%	0.02%
North Carolina	31%	22%	9%	21%	19%	21%	20%	6%	25%	22%	7%	1%	0.3%	0.001%
North Dakota	17%	12%	5%	10%	10%	11%	10%	5%	13%	11%	5%	1%	0%	0.02%
Ohio	31%	24%	12%	22%	20%	22%	21%	5%	26%	23%	8%	0.5%	0.03%	0.02%
Oklahoma	19%	14%	2%	10%	11%	13%	12%	5%	15%	13%	4%	0.4%	0%	0.1%
Oregon	42%	31%	10%	65%	26%	79%	75%	2%	34%	30%	9%	0.03%	0.4%	0%
Pennsylvania	33%	23%	6%	21%	21%	23%	21%	7%	27%	24%	6%	1%	0.1%	0.03%
Rhode Island	41%	30%	16%	31%	25%	27%	26%	14%	33%	29%	13%	0.1%	0%	0%
South Carolina	26%	19%	5%	12%	15%	17%	16%	5%	21%	18%	5%	0.4%	0.3%	0.03%
South Dakota	19%	11%	2%	11%	12%	13%	13%	5%	16%	14%	5%	0.3%	0%	0%
Tennessee	22%	16%	5%	8%	13%	15%	14%	5%	17%	15%	4%	2%	2%	0.01%
Texas	27%	20%	7%	16%	16%	18%	17%	7%	22%	19%	7%	2%	2%	0.04%
Utah	37%	26%	2%	2%	22%	25%	24%	8%	30%	26%	6%	0.4%	0%	0.01%
Vermont	27%	18%	0.3%	58%	16%	42%	40%	7%	22%	19%	6%	0.3%	0.4%	0.1%
Virginia	26%	19%	8%	12%	16%	17%	16%	3%	21%	18%	3%	0.2%	1%	0.1%
Washington	38%	28%	8%	21%	23%	25%	24%	7%	30%	27%	10%	0.1%	2%	0.1%
West Virginia	18%	14%	2%	5%	10%	13%	10%	3%	12%	11%	2%	0%	0%	0.2%
Wisconsin	36%	27%	11%	26%	22%	25%	23%	9%	29%	26%	10%	2%	0.2%	0.01%
Wyoming	22%	16%	1%	3%	12%	15%	14%	5%	17%	15%	2%	2%	0%	0.1%
National	32%	23%	8%	27%	19%	30%	28%	8%	26%	22%	8%	1%	1%	0.1%

Includes material captured through state deposit return systems

# Projected Impact of Potential EPR States

(Connecticut, Illinois, Maryland, Minnesota, New York, and Washington)

## Before implementation of EPR

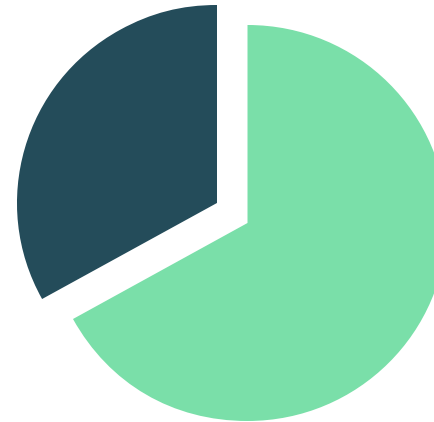


**26%** of material recycled

**2.1M tons**

of recyclables on average are recycled in Connecticut, Illinois, Maryland, Minnesota, New York, and Washington annually.

## After implementation of EPR



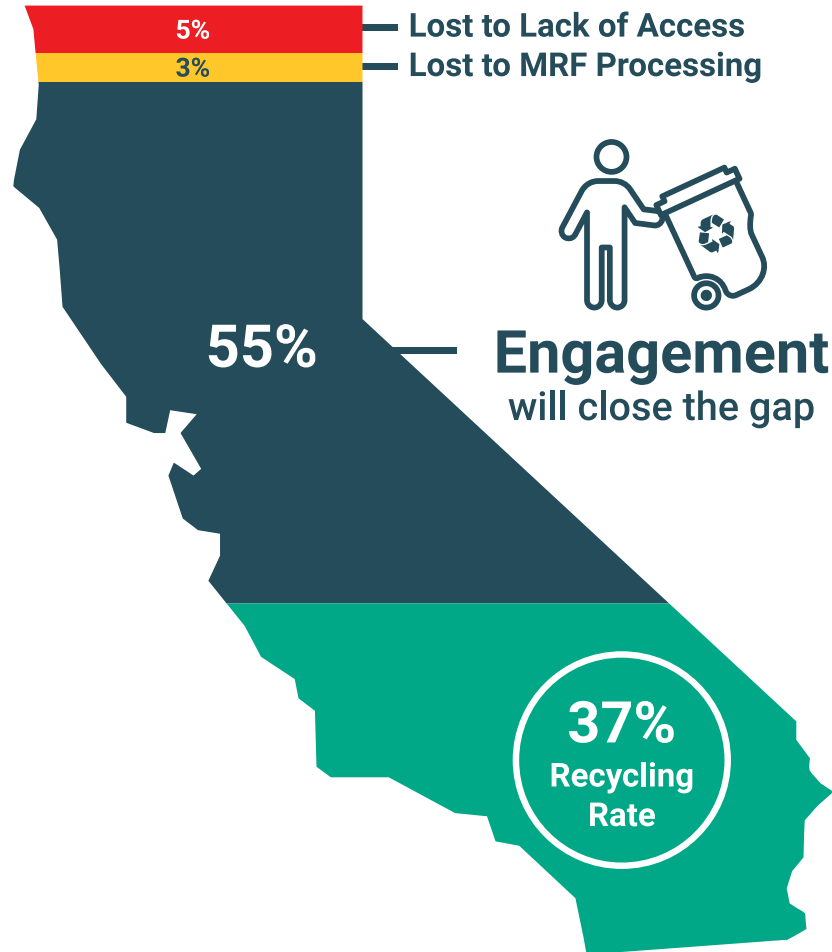
**67%** of material recycled

**5.4M tons**

of recyclables on average projected to be recycled in Connecticut, Illinois, Maryland, Minnesota, New York, and Washington annually.

Implementation of EPR Policies takes 3-5 years following passage of legislation

# State of California Impact of Recycling Engagement



Full engagement encompasses the ability to recycle all recyclable materials, including through material acceptance

# Catalyzing System Change

5 ELEMENTS OF AN EFFECTIVE RECYCLING SYSTEM



**Packaging Recyclability**

Harmonized Standards that Connect to an Evolving System



**Recycling Access**

Equitable Opportunities for Single-family and Multifamily Households



**Recycling Engagement**

Public Trust & Recycling Participation



**Processing and Sortation**

Modernized MRF Infrastructure



**End Markets**

Transparent Fate of Materials

**Increase the Residential Recycling Rate by 25% (2.6M New TPY) by end of 2026.**

DEPLOYMENT OBJECTIVES  
2023-2026



**Policy**

Advance EPR reaching 10M+ households.  
Advise states and PROs on policy implementation.



**State & Federal Partnerships**

Strategic partnerships to advance system change.



**Material-Specific Coalitions**

Scale Coalitions targeting 30% recycling rates.



**Innovation & Data Integration**

Collaborate with tech partners to advance digital solutions.



**Regional Systems Change Investments**

Launch and scale new regional coalitions reaching 5M+ households.