



Recycling Market Development Center Advisory Board Meeting

Mattress Recycling

October 9, 2024, 9am – 11:30am PST

Agenda



9:00 Welcome

9:05 Ecology and Commerce updates

9:30 Board roundtable

9:50 Select board chair & co-chair

10:00 Bio Break

10:10 Mattress Recycling Presentations

- Alex Erzen – King County Solid Waste Division
- Mike Zachman – Arlington Recycling Warehouse
- Mike O'Donnell – Mattress Recycling Council

11:30 Wrap Up

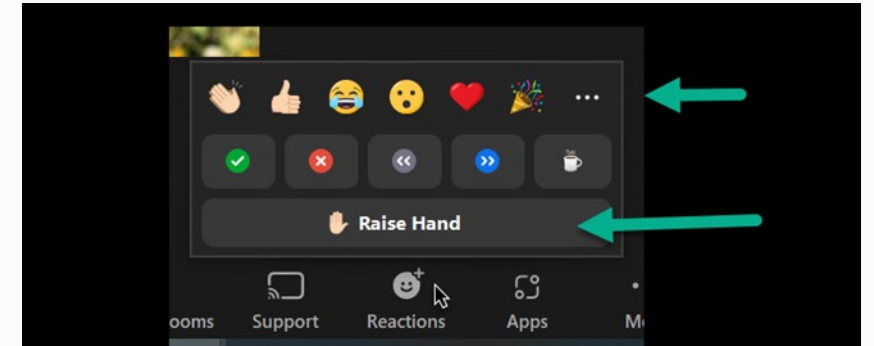
Participation in this meeting:

Roles

- Host-Caleb
- Facilitator-Mya
- Note taker/chat monitor-Tina

Roles

- Cameras on
- Board members and presenters may unmute themselves
- Questions? Please raise your hand or type them in the chat
- I will call on you or I can read your question
- Use reaction to keep it interactive



Note: we are not recording this meeting, meeting notes will be posted on the Advisory Board website.

Agency updates

Tina Schaefer, Mya Keyzers,
Megan Davis



DEPARTMENT OF
ECOLOGY
State of Washington

Kirk Esmond



Washington State
Department of
Commerce





Report to the legislature



Posted on the Board website



Required every 2 years



Comments due October 11th



Email recdevcenter@ecy.wa.gov

REPORT TO THE LEGISLATURE



Recycling Market Development Center Legislative Report for 2023 and 2024

Introduction

Ecology and the Washington Department of Commerce (Commerce) conduct the work of the Recycling Market Development Center (Center). The Center provides or facilitates basic and applied research and development, marketing, and policy analysis in furthering the development of markets and processing for recycled commodities and products.

This report updates the Legislature on the Center's progress and activities as required by (Revised Code of Washington (RCW) [70A.240.030\(3\)](#)¹):

The center must perform the following activities:

(k) Report to the legislature and the governor each even-numbered year on the progress of achieving the center's purpose and performing the center's activities, including any effects on state recycling rates or rates of utilization of postconsumer materials in manufactured products that can reasonably be attributed, at least in part, to the activities of the center.

The Center team includes staff at Ecology and Commerce who work in collaboration with a diverse advisory board. The Center's work focuses around the following four pillars:

- **convene** discussions
- supporting **innovation**
- conducting **research**
- providing business **assistance**.

Summary and next steps

The Center continued to bring people together on a variety of topics at board meetings, facility tours, and summits on glass recycling. The Center invested in innovations, completed research into glass, plastics, and textiles, and provided a wide range of business assistance.

Impacts to Washington's recycling economy in the past two years included the closure of two paper mills and one glass manufacturing operation due to impacts from international markets and lowered domestic demand. Recyclable paper continues to be collected and processed by Washington's other paper mills. Residential glass collection has ceased in some communities along the I-5 corridor while alternative end markets are established.

¹ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.240.030>



NextCycle Washington

Cohort 3

- Applications open through November 4th
- Virtual application party October 22nd 5pm – 6:30pm

2024 PITCH SHOWCASE

September 23, 2024 | Seattle Central Library

The Pitch Showcase is the culmination of NextCycle programming. After months of business and technical research, mentoring, and planning, teams deliver a summary of their projects using a concise 5-minute business pitch format. An audience of business, recycling, reuse, government, non-profit and investment professionals attend the event, learning about project descriptions, funding plans, impact projections and investment/support opportunities.

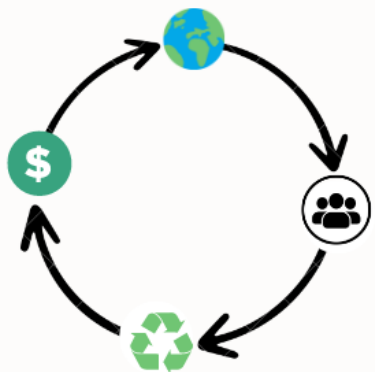
Congratulations go out to this year's winners:

- Best Pitch – Launch Group: **NaturallyContained**
- People's Choice – Launch Group: **NaturallyContained**
- Best Pitch – Innovation Group: **Revino**
- People's Choice – Innovation Group: **Revino**
- Best Pitch – Community Group: **Furniture Repair Bank**
- People's Choice – Community Group: **Reclaim Project Recovery**





RMDC Business Outreach



- Circular States Network – Meets Quarterly
- Internal Circular Business Outreach committee
- Business Connections:
 - Washington Small Business Fair (September 21)
 - Washington Procurement Connect (October 8)





RMDC Textiles Update



- Presentations
 - NERC “Extending the Life Cycle of Textiles”
 - CalRecycle’s Zone Works
- Textile Tours
 - Holy Lamb (October 9)
 - Ridwell
 - Looptworks
- Textile Web series: Early Spring
- EPP/State Contracts – Textile Pilot



RMDC additional funding

\$200,000 in additional funding allocated to 4 projects

- \$100,000 add NextCycle Washington Cohort 3 teams (RRS)
- \$25,000 initial work on Reuse Impact Calculator (via RRS)
- \$50,000 to Seattle Good Business Network (SGBN) for Precycle Material Forum and marketplace research
- \$25,000 to Seattle REconomy for the Reuse Commons

Washington State Circular Economy

RECYCLING MARKET DEVELOPMENT CENTER, ADVISORY BOARD MEETING
— COMMERCE UPDATES —
OCTOBER 9, 2024

Kirk Esmond | Circular Economy Development Director

Office of Economic Development & Competitiveness | Washington State
Department of Commerce

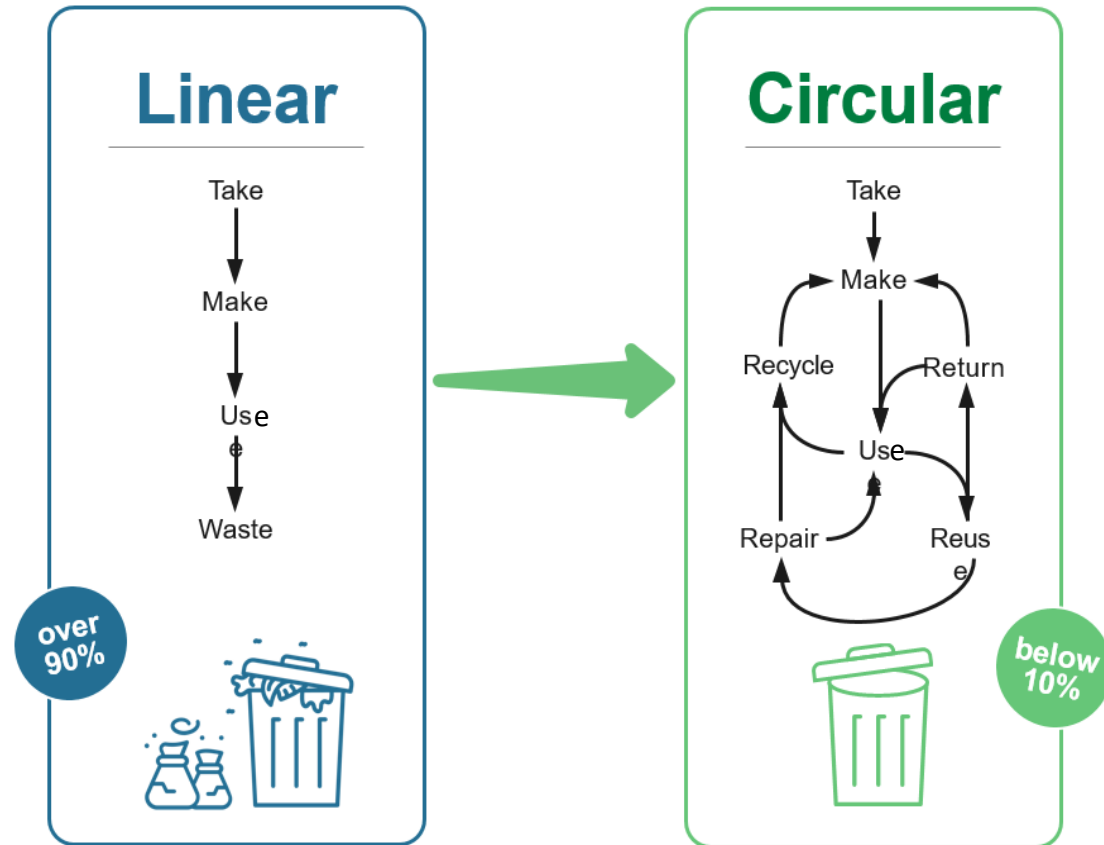


Washington State
Department of
Commerce

Circular Economy Growth

Key initiatives and projects underway

- **Circular Economy Development Unit**
 - Industrial Symbiosis Grant Program – supporting innovation
 - Strategic planning – Circular Economy as an emerging economic sector
 - Stakeholder engagement – local, regional, statewide, national, international
- **Commerce Decision Package**
 - Requested \$5M/year increase in ongoing funding through the legislature
 - Cross-collaboration within sectors and ‘sibling’ agencies and other statewide entities
 - Expansion for flagship programs plus additional multi-level grant programs
- **International Presence and Continued Knowledge-sharing**
 - International Industrial Symbiosis Alliance (focus: importing and exporting of innovation)
 - Pilot projects in WA state (E.g. eco-industrial park models)
 - Upcoming Trade and Study Mission in Brazil (focus: green transition and bioeconomy)



Highlight:

Knowledge-sharing

Delegation from the Republic of Estonia – August 2024

Commerce partnered with Seattle Public Utilities to host 21 Estonian delegates representing waste management, materials recycling, packaging collection systems, biogas production companies and national associations.

- Exploring economic development programs, regulations and initiatives
- Exchanging circularity knowledge
- Industrial symbiosis definition and examples
- Innovation and geographic considerations
- Advancing a strong, more circular economy



Highlight:

Industrial Symbiosis Program (ISP)

Funding opportunity – Turning waste into value

- **2024 grant application period is now open!**
- Competitive grant process via Commerce
- Up to \$2.85M available for eligible projects (\$150-\$500k per project)
- Applications accepted through November 1
- Since 2021, \$1.85 million awarded
- Learn More: [ISP webpage](#), [RCW 43.31.625](#) and [RCW 43.31.635](#)





Washington State
Department of
Commerce

www.commerce.wa.gov



Thank you!

Kirk Esmond

CIRCULAR ECONOMY DEVELOPMENT DIRECTOR

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Agenda



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11:30 Wrap Up

Board Roundtable



Allen Langdon



Jocelyn Quarrell



Carly Mick



Karl Englund



Heather Trim



Matthew
Thurston



Jay Simmons



Preston Peck



Jon Smieja



Sara
Holzknecht



Jeff Zillich



Tim Shestek

Give us an update and your best answer to what does the acronym EPP stand for in the procurement world?



Board Administrative Business

Select a board chair & co-chair

- Any board member is eligible
- No official extra work but would want them to lead board specific discussions
- Potential sounding board for board topics and planning.



**Let's take a
10 minute
break**



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King County Mattress Disposal & Recycling

Alex Erzen

King County Solid Waste Division



Mattresses and King County SWD

Oct. 9, 2024
Ecology RMDC



Alex Erzen



King County

Department of
Natural Resources and Parks
Solid Waste Division

Serving
Community

Protecting
Environment

Operating
Excellence

Mattress disposal

- 2022 King County waste study: **8,834 tons** of mattresses/box springs *disposed* per year
- 1 cubic yard of landfill airspace each
- Average weight of 55lbs each

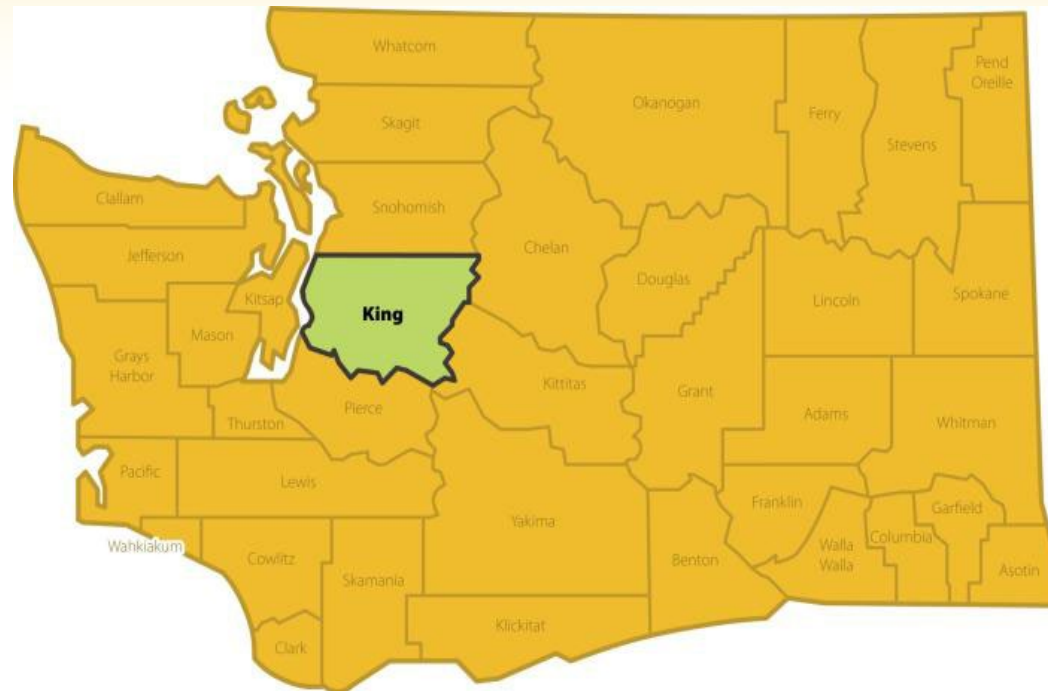


Where can I *recycle* a mattress?

- **Retailer** take back (pickup with a new purchase)
- Drop off at a **mattress recycler**
- **Hauler bulky item** pickup or special collection
- Drop off at a **transfer station**

King County Solid Waste Division

Operates 8 transfer stations, 2 drop boxes, 1 landfill



Puget Sound mattress recyclers

- Recycle Warehouse in Mukilteo
- UpTekk in Pacific
- DTG



Former mattress recyclers

- **Correctional Industries** (WA Dept. of Corrections, Monroe): 2014
- **R5 Systems, Inc.** (Tukwila): 2014
- **A Plus** (Auburn): 2015
- **NW Furniture Bank** (Tacoma): 2023



Mattress recycling at transfer stations

- City of Tacoma recycling with NW Furniture Bank (fka Spring Back) 2014 until COVID
- City of Seattle so. station piloted 2015-16
- King County single transfer station (Bow Lake) pilot began June 2017
 - expanded to 5 stations 2019-22 (Bow Lake, Shoreline, Enumclaw, Vashon, Factoria)
 - established \$30 handling fee Jan. 2022

KCSWD mattress market development

- Transfer station mattress recycling is an interim step towards a more equitable statewide mattress EPR system
- Summits in 2011, '14, '17
- Research, outreach, surveys, direct mail
- RFI, RFP, pilot



Mattress EPR

- Laws in Conn., Calif., Rhode Island, Oregon
- France since 2013
- British Columbia in '25?
- 2012 US Conference of Mayors signed resolution in support of mattress EPR:
Mayors of Auburn, Everett, Mukilteo,
Redmond, Seattle, Spokane, Tacoma



Mattress Recycling and Reuse in WA

Mike Zachman
Arlington Recycle Warehouse



Arlington Recycle Warehouse - Everett











There Is More To Every Mattress

Mike O'Donnell
Mattress Recycling Council



There
is more
to every
mattress



Mattress Recycling Council®

WA Recycling Development Center: October 9, 2024

How and Why

ISPA created the Mattress Recycling Council (MRC) in 2013 to develop and implement recycling programs in three states that each passed similar mattress recycling laws. MRC created Bye Bye Mattress as a consumer-facing brand for its programs.



Industry Obligations

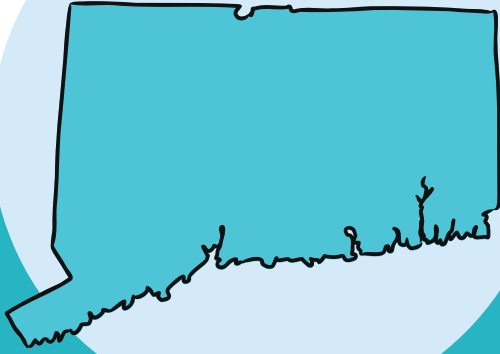
We are program administrators

- Program plans
- Recruit collection sites
- Supply chain management
- Annual reporting
- Marketing
- Accounting
- Audits
- Research

Collection, transportation and recycling – all outsourced



Where We Are



CONNECTICUT

Launched: 2015

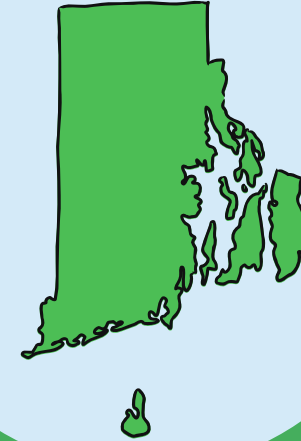
Fee: \$11.75



CALIFORNIA

Launched: 2015

Fee: \$10.50



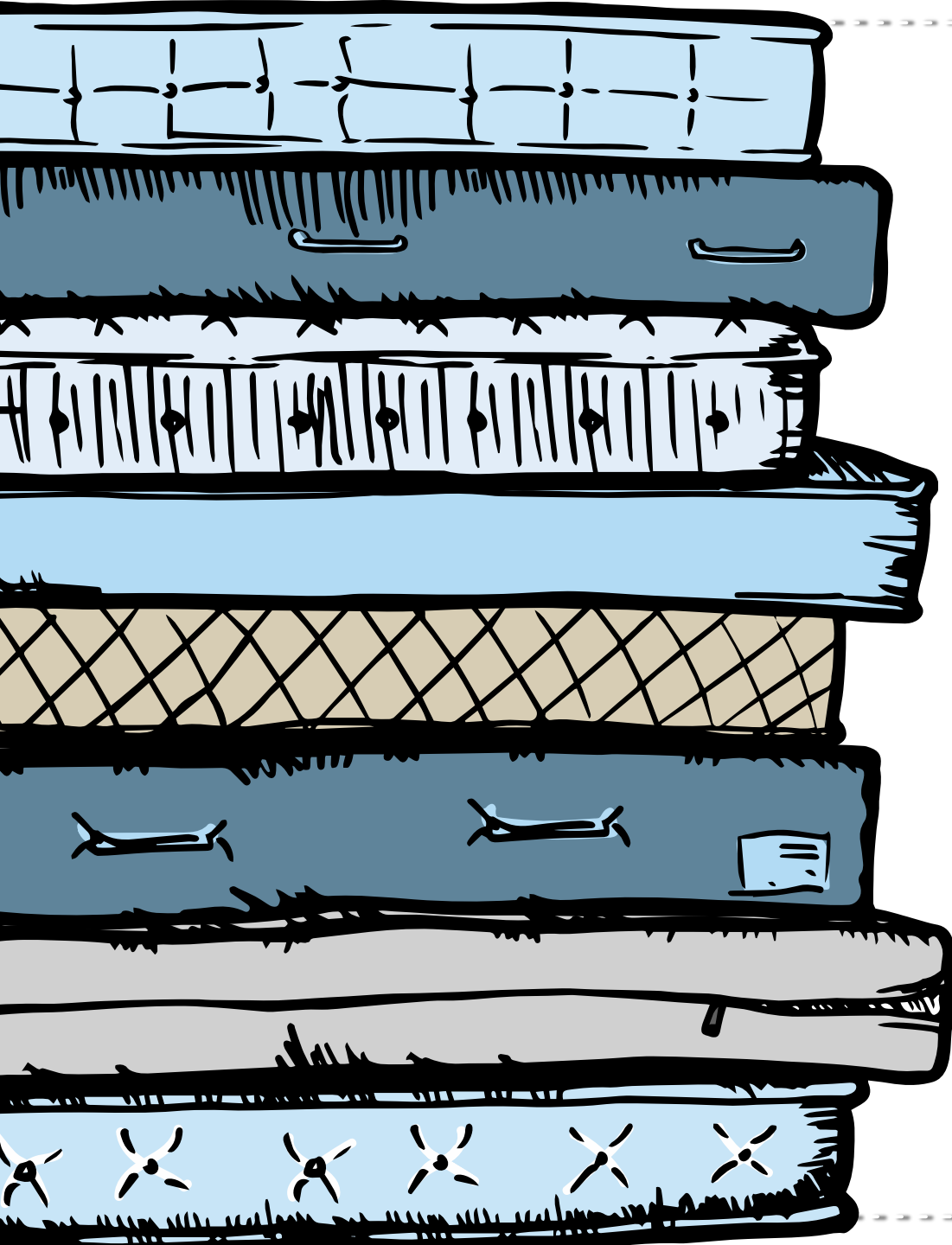
RHODE ISLAND

Launched: 2016

Fee: \$20.50

How We Work



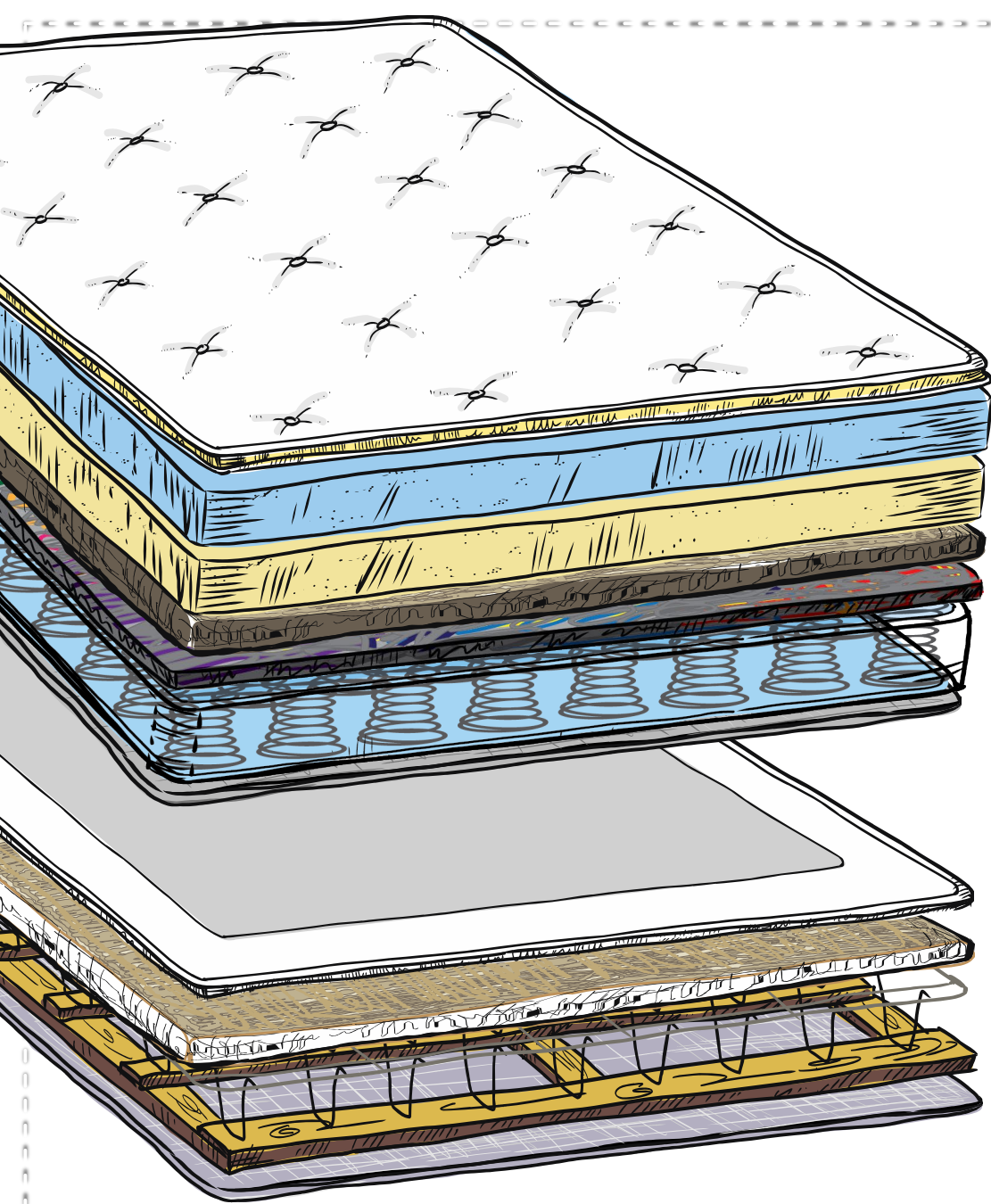


Program Numbers:

13 million
units recycled

13.3 million
cubic yards

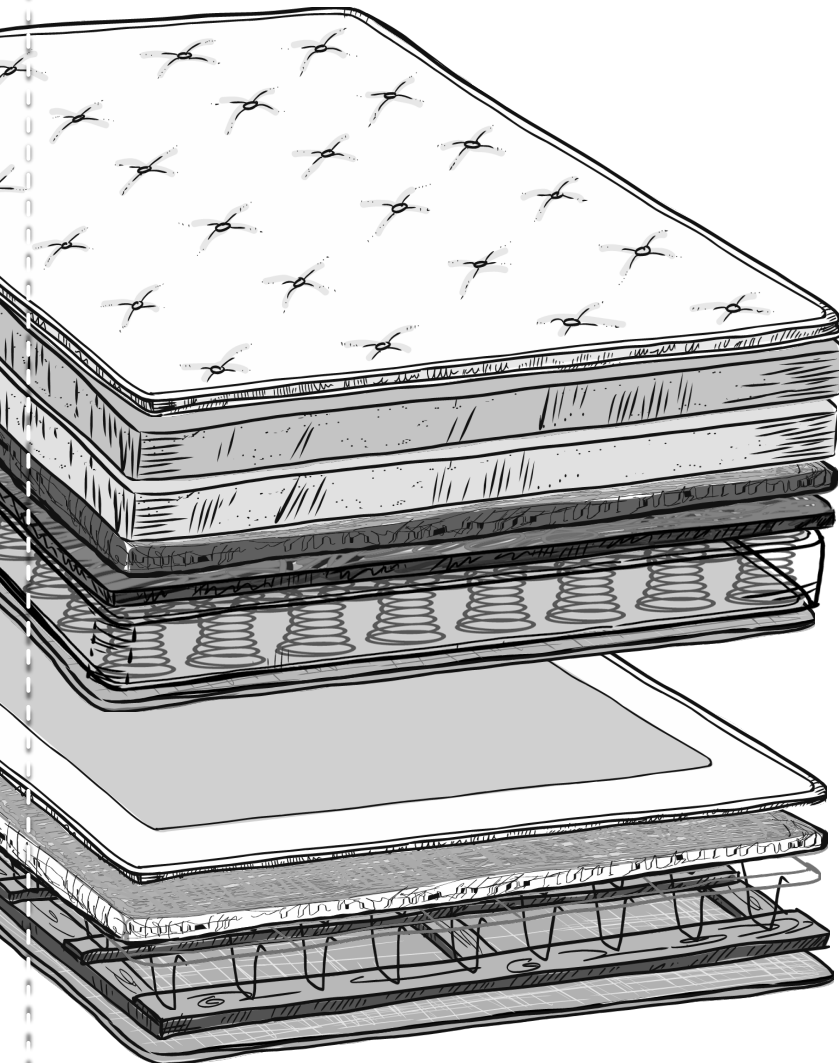
500 million
pounds



75%
OF A MATTRESS
IS RECYCLABLE

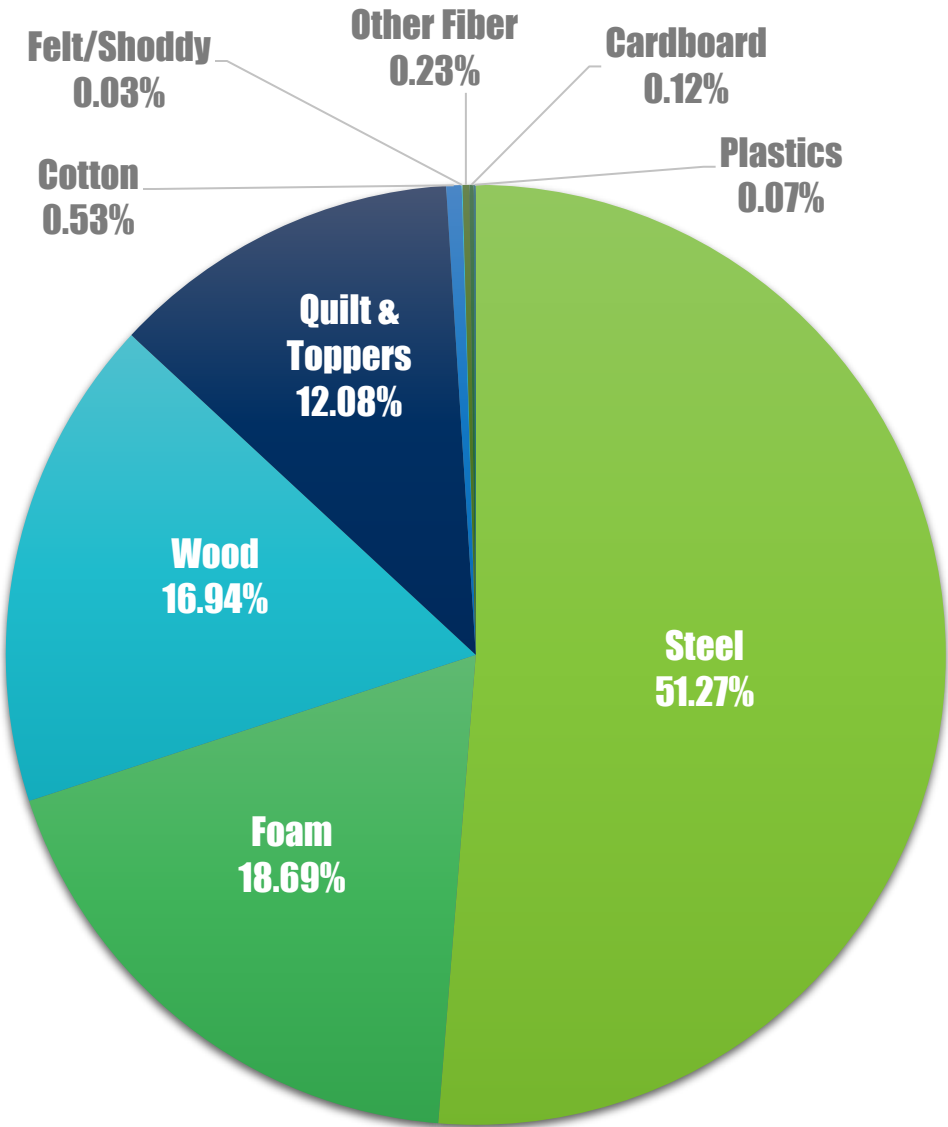


2023 California Total Materials Recycled

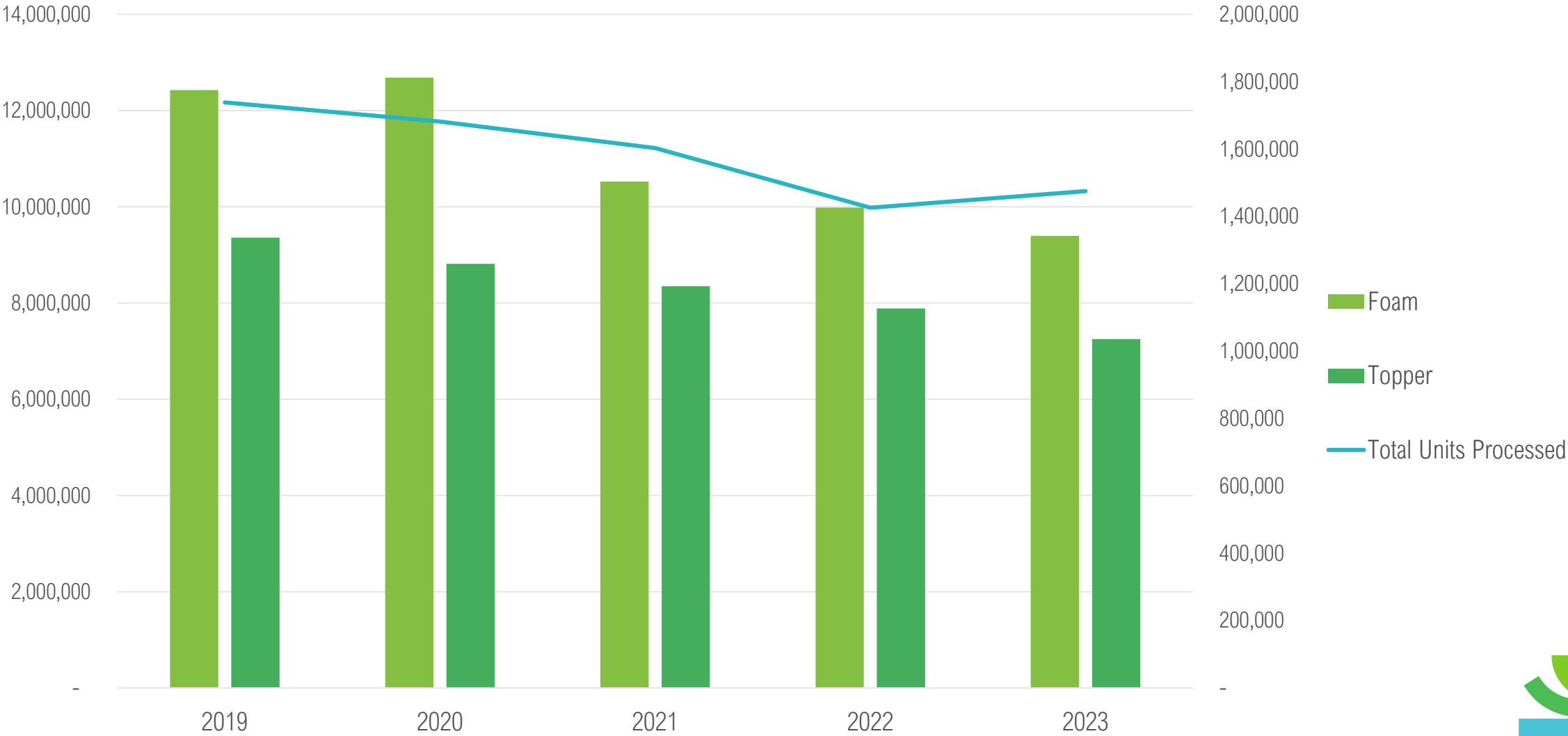


Material	Pounds
Steel	30,772,607
Foam	11,219,440
Wood	10,165,966
Quilt & Toppers	7,251,564
Cotton	316,240
Other Fiber	136,212
Cardboard	89,787
Plastics	44,390
Felt/Shoddy	15,100
Other Materials	13,689
Commodities Subtotal	60,024,995
Whole Mattresses Reused/Renovated Subtotal	724,075
Grand Total Materials Recycled	60,749,070

2023 California Materials Recycled



California Foam & Quilt Volumes 2019-2023



Quilt Panel Bales

- Polyester/Cotton blends
- Sewn into foam comfort layer
- Rebond is primary end use
- Visually contaminated or wet panels are landfilled



Foam Bales

- PU, Visco, Latex
- Rebond is primary application
- Reuse
- Chemical Recycling (EU)
- Vitrimization?



Rebond Alternative Uses

- Carpet Underlayment
- Seating Surfaces
- Mattress core (Mexico)
- Furniture



Rebond Quality Control

- Staples
- Microcoils
- Handles and hog rings
- Damp, mold
- Plastics
- Zippers

NO CONTAMINATED FOAM ESPUMA NO CONTAMINADA



STAPLES



STAPLES



MICRO COILS



SHREDDED COILS



HANDLES



PLASTIC HANDLES



METAL VENTS



ZIPPERS



WET/MOLDY FOAM

Foam Vitrimers

- 2-year project
- Heat and Pressure
- Not chemically recycled
- Wide commercial applications including shoe soles, gaskets and phone covers



California Life Cycle Analysis - 2021

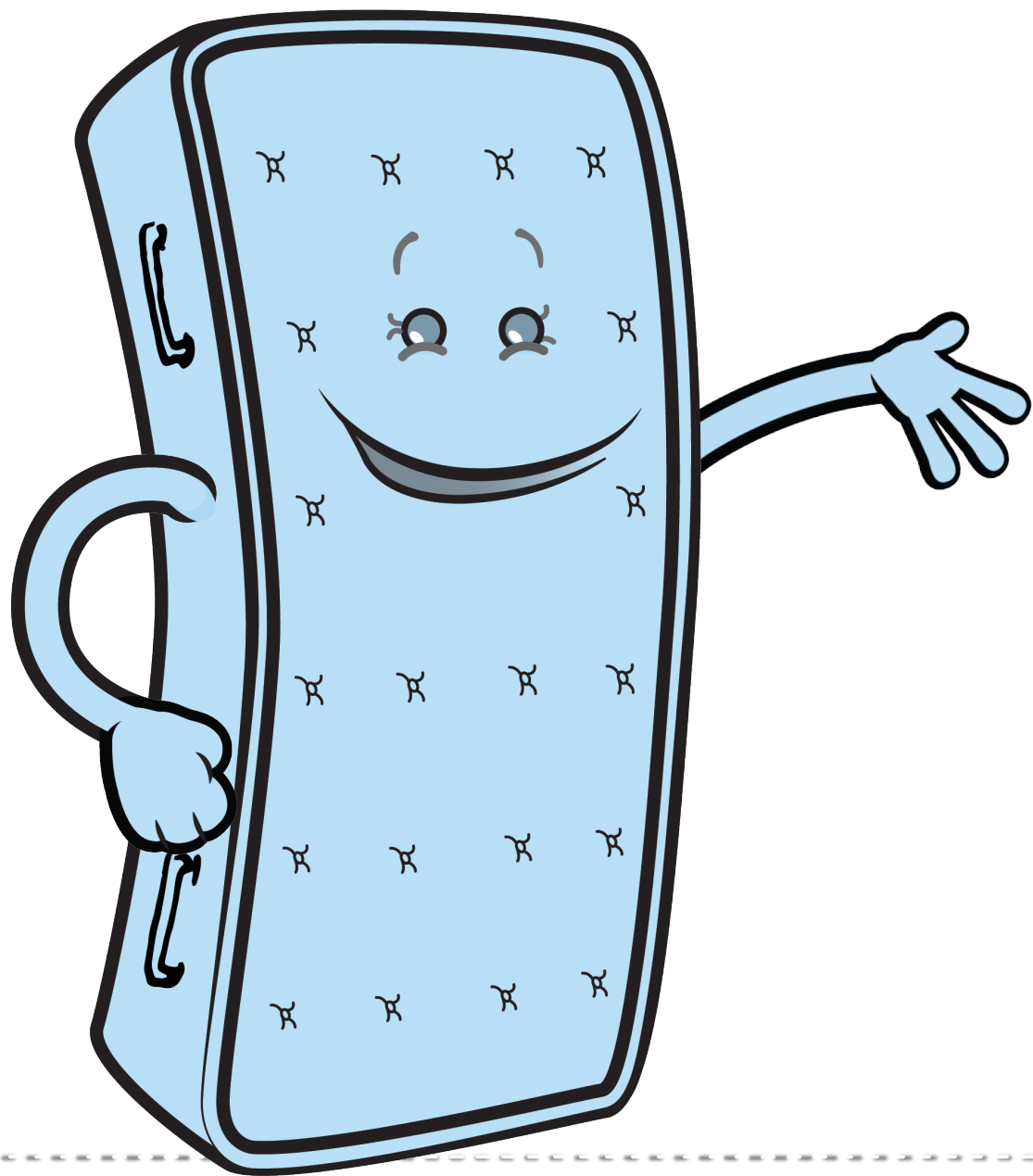
Why?

- Mature California program:
- 76% recovery rate by recyclers
- 80% statewide landfill diversion, 1.6M units recycled
- Reliable data across the program
- Scope: California collection, transport, recycling, end markets, disposal

Results?

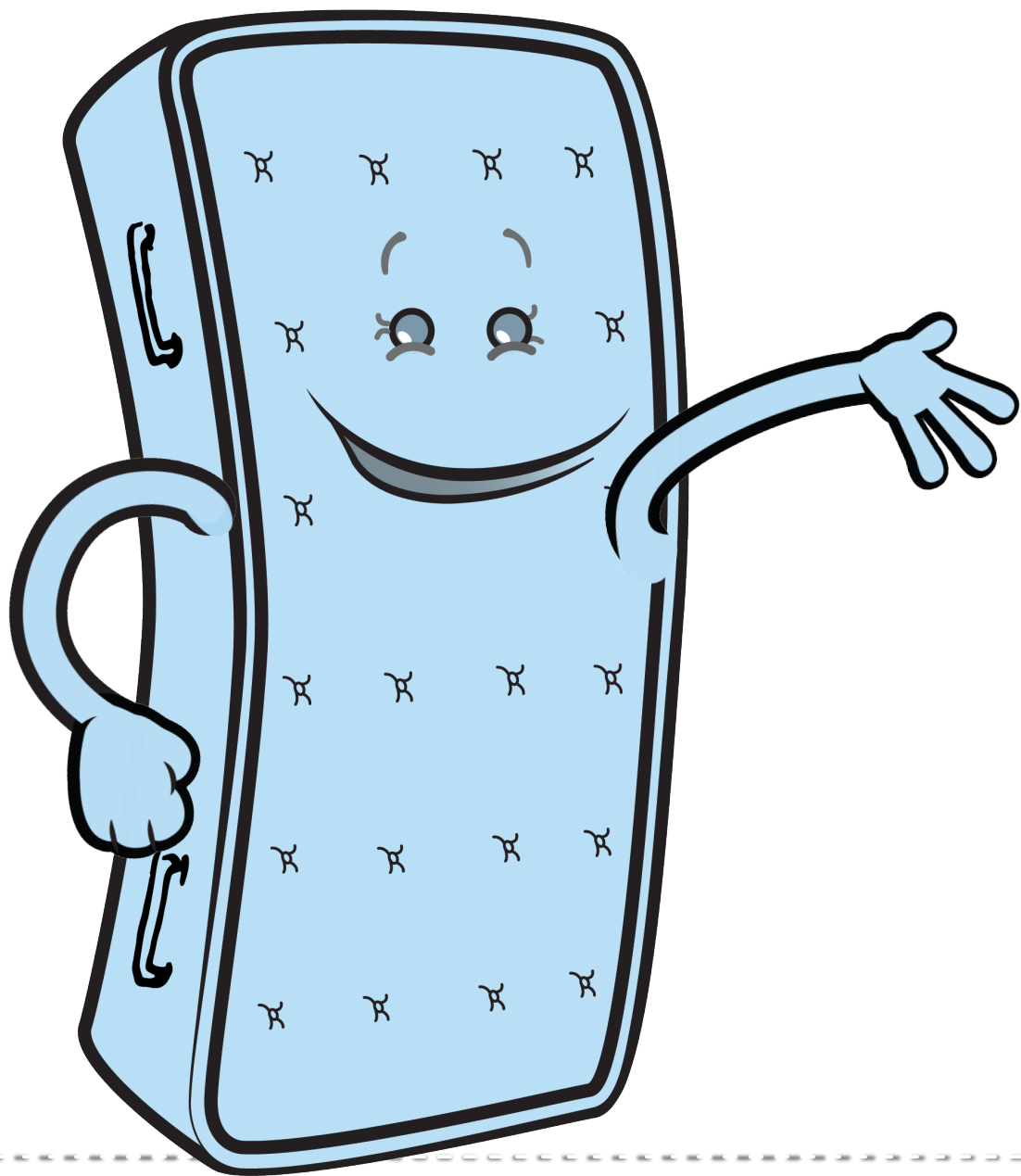
- Favorable!
- Foam, quilt and steel reuse/recycling driving environmental benefits
- Widely distributed in environmental press





recycling
one mattress
SAVES
500
gallons of
water

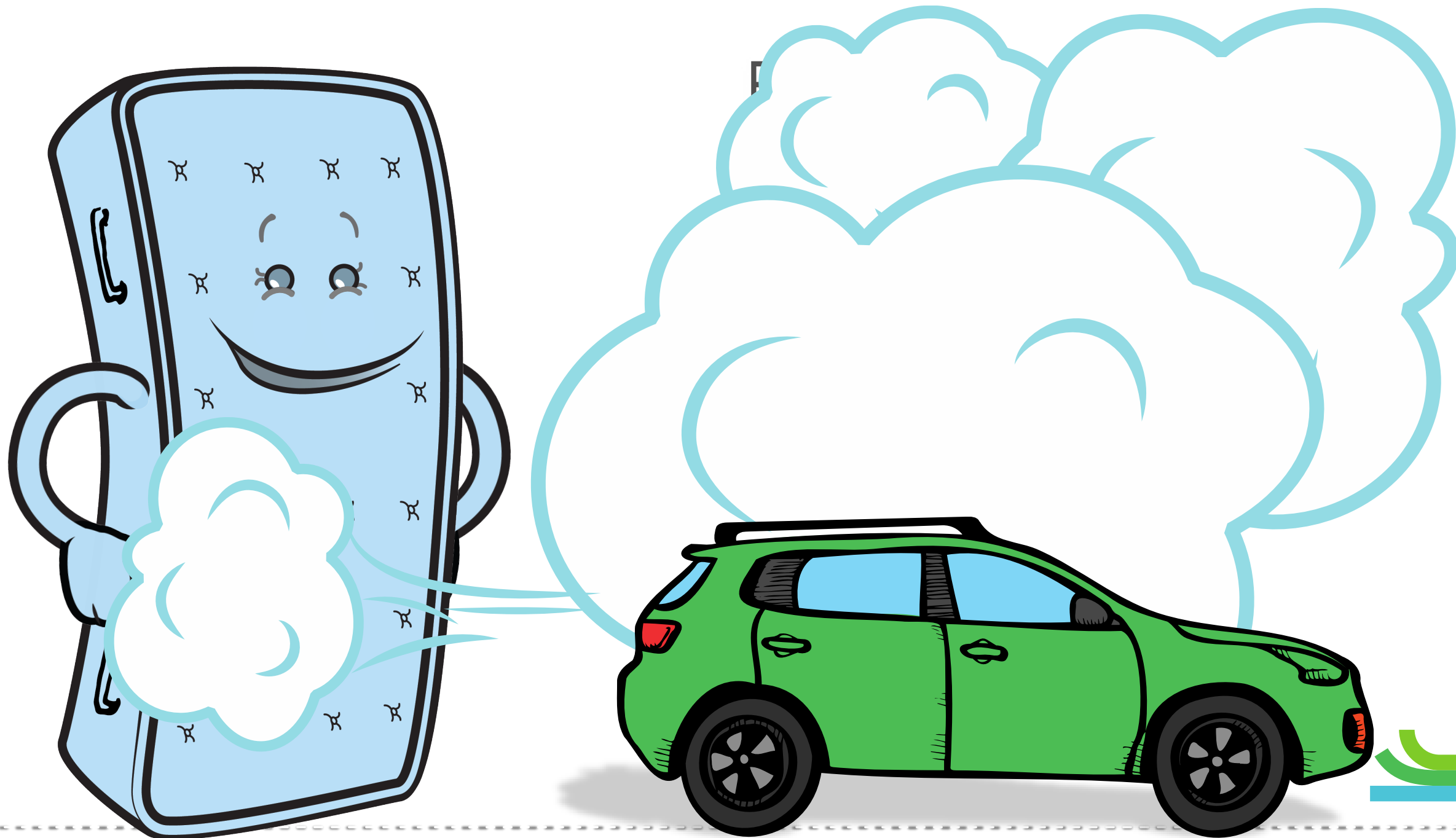




One mattress saves the amount of power needed to

Light a
HOME for
3 days







Sept. 25-26 | Charlotte, NC

<https://ispasustainability.com/>

MRC's Research Team

- Established in 2018
- 35 Completed projects
- Collection
- Transport
- Deconstruction
- End Market Development



Mike Gallagher

Director of Research and Innovation



Karl Haider

Research Consultant



Mattress Recycling Council®

Mike O'Donnell

Chief Operating Officer

mikeo@mrc-us.org

206.558.3303

Wrap Up



Tasks from today:

- Notes and slides from today will be posted to the Advisory Board website soon.
-



Next meeting:

- Wednesday January 8th, 2025
 - Zoom: 9 am to 11:30 am (PT)
-



Tours:

Jefferson County facilities (November 5th)
Holy Lamb, Oakville (October 10th)



NextCycle Washington:

- Cohort 3 applications open through November 4th
- Application Party October 22nd 5pm – 6:30pm (PT)



Thank you to our
speakers and
everyone that
attended!

See you all at the January 8th, 2025 advisory board meeting!



ADA Accessibility

The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188.

To request an ADA accommodation, contact Ecology by phone at 360-407-6831 or email at ecyadacoordinator@ecy.wa.gov. For Washington Relay Service or TTY call 711 or 877-833-6341. Visit [Ecology's website](#) for more information.