



Amplifying Reuse Systems in Colorado

June 4, 2024



Ryan Call



Melissa Jung



Juri Freeman



**Ashwin
Ramdas**



**Becky
Goyton**



**Tomi
Hulkko**



**Amber
Barbella**



Network of returnable reusable containers



Single-use packaging is a major climate problem



561 billion foodservice
disposables thrown out
per year in the US

Packaging makes up
almost 30% of municipal
waste—82.2M tons' worth

Reuse is a solution to the climate crisis and everyone wants it **now**

Reuse mandates already passed in Germany, France, Portugal, Austria, Spain, and the Netherlands

Lawmakers will continue to pass common sense legislation

New infrastructure makes reuse cheaper than disposable

Tech makes reverse logistics easy

Businesses dealing with inflation and supply chain issues

Customers proven willing to adopt behavior change, like bringing bags to grocery store

Single-use packaging will become as weird as smoking in a restaurant

We understand the barriers that have long prevented reuse from becoming mainstream

1

Returns

2

**Capex
intensive**

3

**Feels
daunting**

We make reuse an easy, convenient and climate-friendly choice



Shared network of reusable containers makes use of existing ordering channels, APIs, logistics networks, and infrastructure.



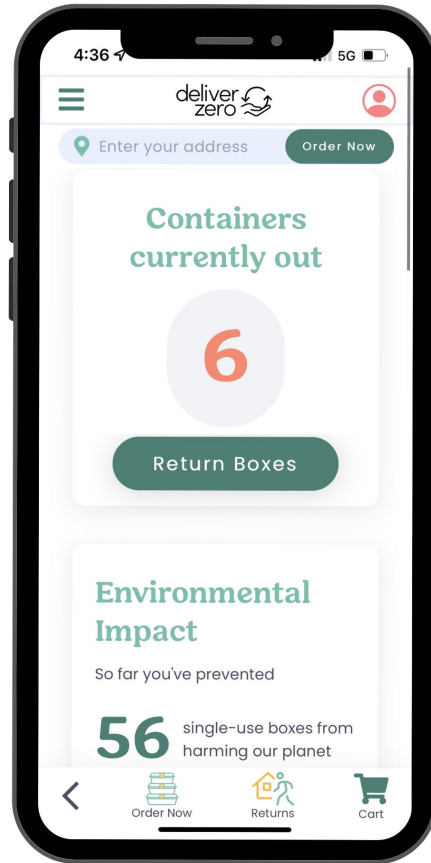
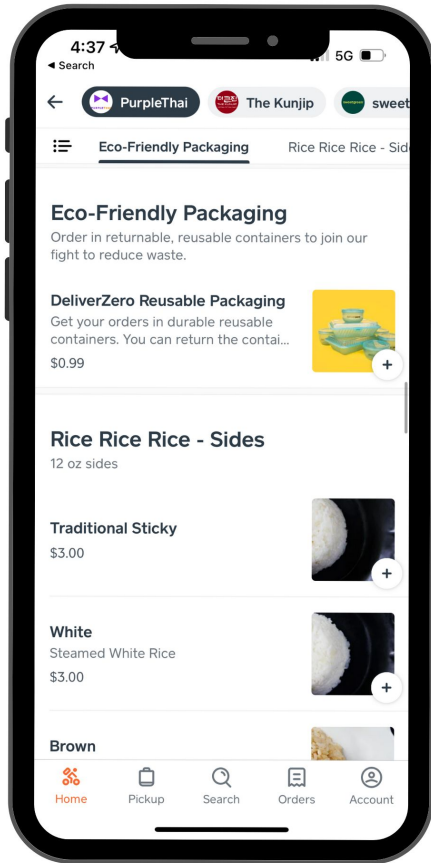
98% return rate



Understand packaging and reduced costs by manufacturing our own



We make it easy for customers to opt-in to reusables



Opt-in with one click or at the counter



Easy returns



No sign up necessary



SMS updates with each order

Our unique differentiator delivers high value customers



Customers who opt-in to our containers spend \$10-11 more per order than those ordering from the same vendors

86% of our customers order from a restaurant they never tried before because of DeliverZero and post about us on social media without prompting

8% of customers download a new third-party app to order in our containers

Current partners

amazon



otter

Uber Eats

toast

caviar

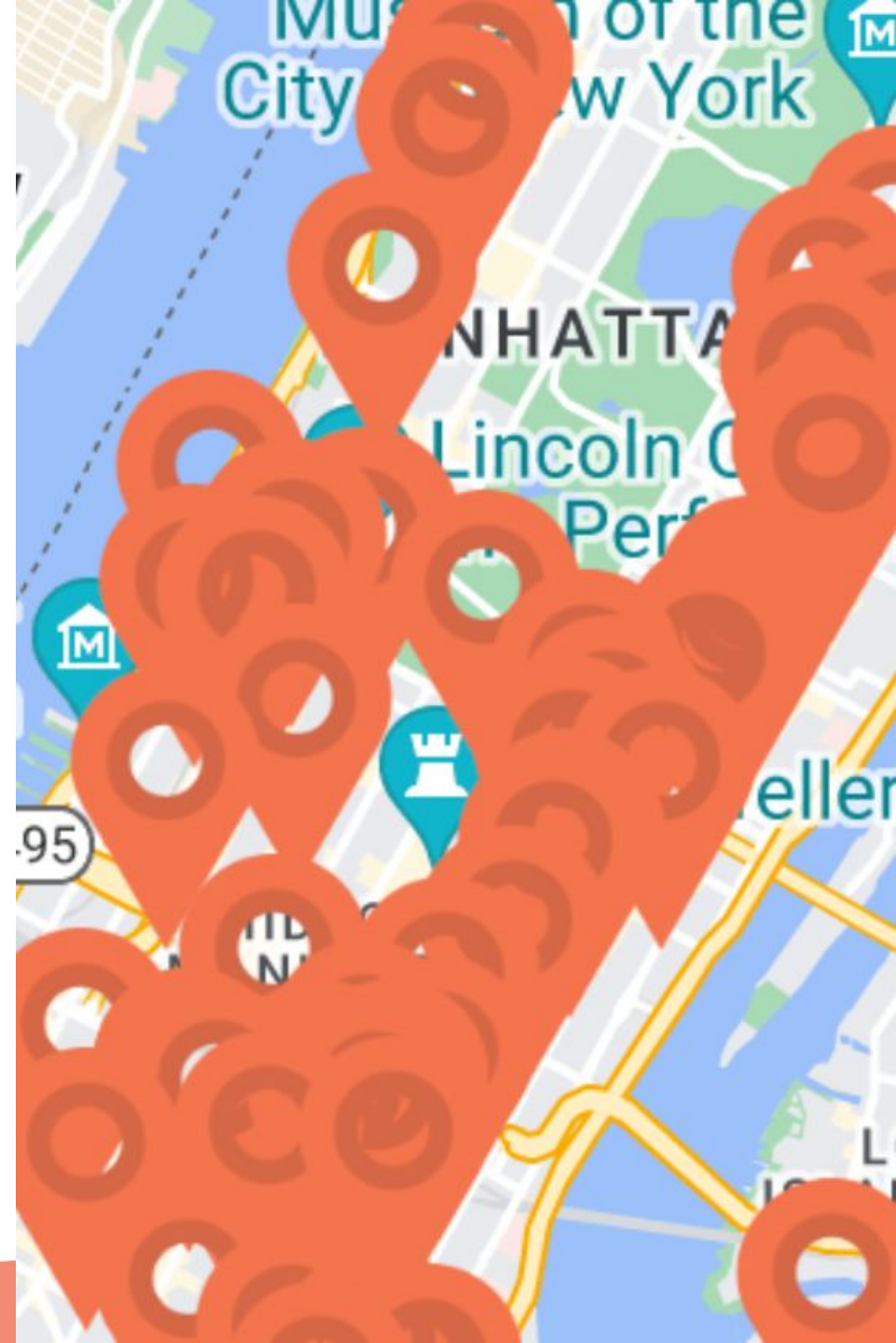


DOORDASH

We're ready to enable reuse at scale

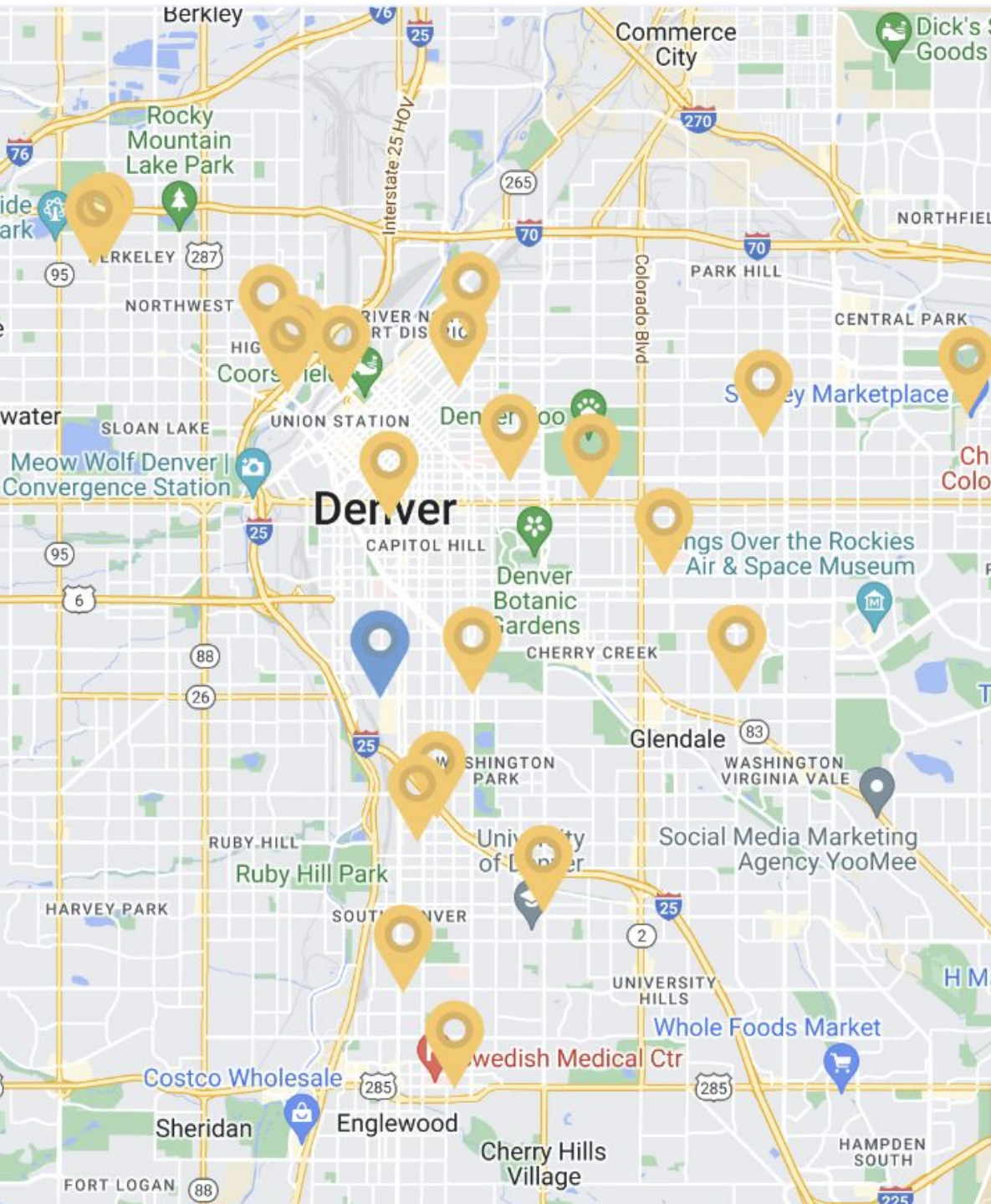
Our offering is the first reusable system seamlessly integrated into the ordering experience

- ☑ Built tech
- ☑ Integrate with DoorDash, Toast, Uber Eats, Deliverect, Grubhub, Otter, Cuboh, Olo, SpotOn, and ItsaCheckmate
- ☑ Manufacture our own containers and cut our costs by 65%



Local policy has helped us make impact

- ❑ Grant funding through Boulder RFP and FRWD grant
- ❑ Positive incentives for restaurants to adopt reuse
 - ❑ Boulder offered to cover a restaurant's first \$1,500 in usage
 - ❑ Similar policy in Longmont for \$1,000
- ❑ What policy will most effectively catalyze reuse?
 - ❑ Mandate a reusable option at all points of sale
 - ❑ Disincentivizing single-use
 - ❑ Allocate waste management funding to collection



Impact in Colorado

57 restaurants in Colorado

8,823 containers diverted from Chook Chicken chain of restaurants

62,737 containers diverted in Colorado

300,000+ containers diverted across system

Colorado Whole Foods Pilot

Pilot lasted from March 2023 – May 2024

Reusables for hot bar, salad bar, deli, pizza, and more

Available at 5 stores in Denver, Boulder, & Longmont

19,093 single-use containers replaced by reusables



The rails on which the reuse economy will run



By creating the software that allows for the best reusable asset tracking, we set ourselves up to **take a piece of all transactions that include reusable packaging**

Pilot partners using our software to track their own reusable packaging

As the market for reusable tracking solutions grows, we are positioned to become **the dominant tracking provider**



Leading Reuse in Colorado

r.world Hello Colorado. Goodbye Waste.

We believe in a future without mountains of garbage and oceans of trash.

That's why we're building the national reuse infrastructure, platform, and movement needed to create reuse at scale. And we're doing it city by city, and state by state.



The Planet's Single-Use Waste Crisis Can Be Solved!



By the numbers...

1 TRILLION+ single-use items tossed annually¹

120 BILLION+ disposable cups every year (US) =
363 single-use cups per person²

16 BILLION+ single-use coffee cups are thrown out
annually³

4 BILLION+ single-use cups are thrown out at live
events each year (in the US alone)⁴

Only 9% of plastic is recycled annually

**Reuse eliminates single-use waste,
reduces CO2 emissions, and slows
down climate change**

1. <https://www.earthday.org/fact-sheet-how-much-disposable-plastic-we-use/>;

<https://upstreamolutions.org/blog/reuse-wins-report>

2. <https://www.freedoniagroup.com/industry-study/cups-lids-3445.htm>; <https://www.rethinkdisposable.org/resources>

3. <https://foodprint.org/blog/environmental-impact-coffee-cup/>

4. Estimate of single-use cups used each year in the U.S., based on attendance/drink averages at live events.
<https://upstreamolutions.org/reuse-wins-at-events>



Building The National Reuse Infrastructure



How to Build a Movement: Be Trusted by Industry Leaders

AEG
PRESENTS


AQUARIUM
OF THE PACIFIC
A non-profit institution

aramark 


ACM
GLOBAL

BBC
barbeverage catering

BON JOVI

**CAMP
FLOG
GNAW
CARNIVAL**

 Centerplate

 CLOSED
LOOP PARTNERS

THE
Coca-Cola
COMPANY


DENVER MUSEUM OF
NATURE &
SCIENCE

DMB

El Rey
THEATRE


FARM AID
People. Profits. Planet.


FIDDLER'S GREEN
AMPHITHEATRE

GREEN
SPORTS
ALLIANCE

**WEDD
in the
CLOUDS**
WEDD & ASSOCIATES

I.M.P.

Jack Johnson

*Kevin
Lyman
Group*

100
L.A. MEMORIAL
COLISEUM

 LEGENDS

Levy

**MADISON SQUARE
GARDEN**

Magpie Rogers

m s a
music sustainability
association

RADIOHEAD

ROD STEWART



The Showbox

sodexo*

 SPECTRA

U2

 Upstream

**WAMU
THEATER**
PART OF LUMEN FIELD

THE WARFIELD





rworld Who We Service

- Music Events
- Sports/Games
- Corporate Campuses
- Convention Centers
- Venues (500+ capacity)
- Arenas
- Stadiums
- Festivals
- Movie Theaters
- Schools
- Studios/TV/film productions
- Restaurants/cafes/ breweries
- Government agencies
- Performing Arts centers
- Aquariums
- Museums
- Zoos
- Food Courts
- + more!

*Anywhere that wants to eliminate single-use
foodware waste*



Optimized for Environmental and Operational Excellence.



We serve businesses and crowds of every size—from 300 to three million—and we're equipped to support whatever you need.

- Tested, proven, and refined
- Built on state-of-the-art technologies:
 - Proprietary sanitization technology from Ecolab®
 - AI Quality Assurance System
 - QR and RFID technology

**Process Built By Operators,
For Operators**

Our Customized Reuse Program includes:



- Logistics
- Sanitizing
- Deliveries and Pick-ups
- Quality control
- Training
- Inventory Management
- 24-7 Service
- Automated ordering and delivery
- Accounting
- Environmental Impact Reporting
- And more...all customized to you

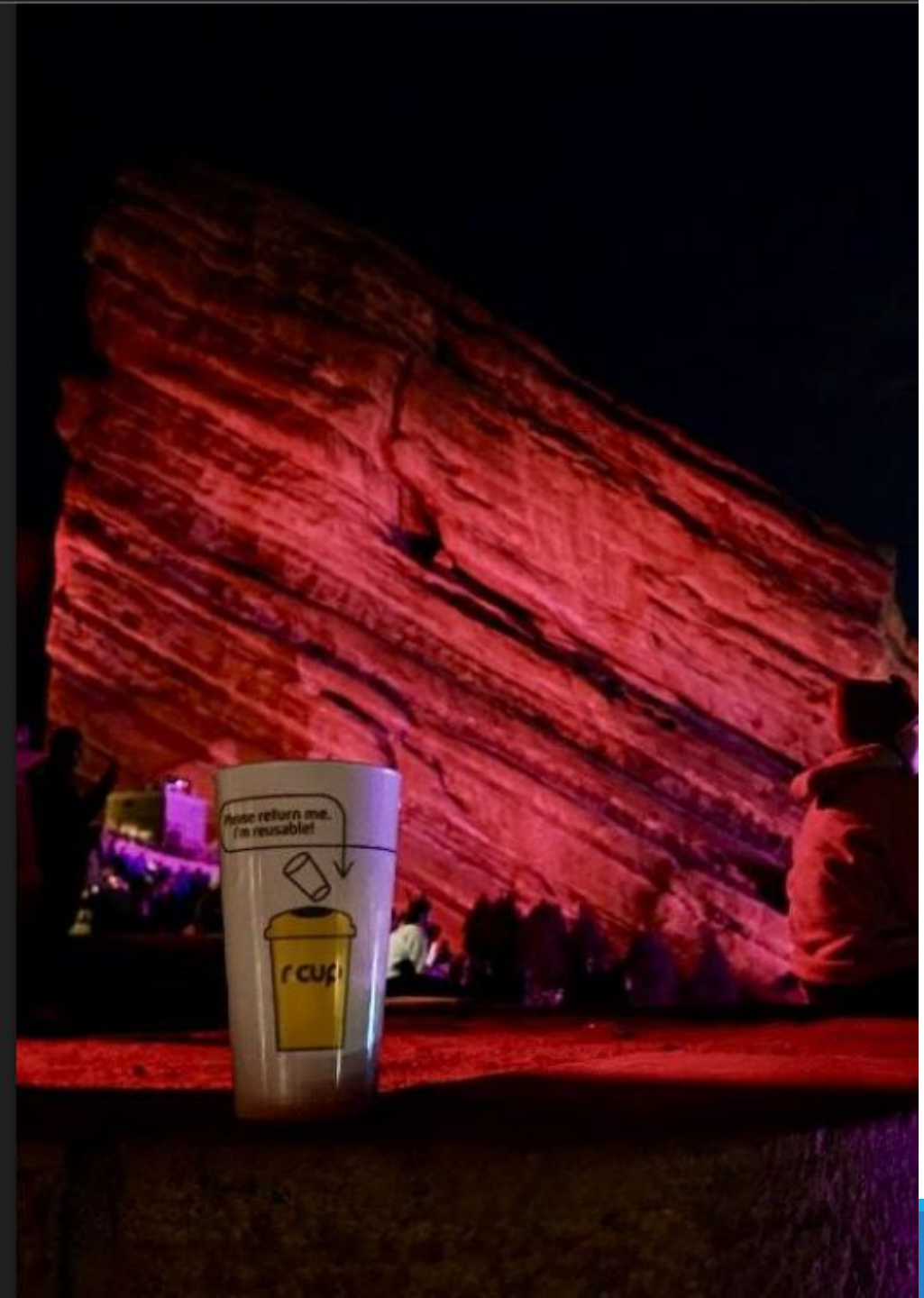
*The r.world Turnkey program not only reduces waste but saves money on waste removal.
Less dumpsters = Less Cost*

CO Impact So Far

To date, **r.World impact** includes:

- **3+ million single-use items eliminated** from Colorado's waste stream ...
- **267k+ lbs of CO2** eliminated ...
- **155k+ liters of crude oil** saved ...
- **460k+ kWh of electricity** saved ...
- **980k+ gallons of water** saved ...

... and counting!



2017
YEAR FOUNDED

30+ YEARS OF
SUSTAINABILITY
LEGACY

4,500+
EVENTS
SERVICED

50+ TONS
OF PLASTIC NOT
PRODUCED

8+ MILLION
SINGLE-USE ITEMS
DIVERTED FROM
LANDFILLS

The logo for 'rworld' is centered in the image. It features the word 'rworld' in a white, lowercase, sans-serif font. A yellow circle is positioned around the 'r', with a yellow dot at its top and a white dot at its bottom, connected by a thin yellow line. The background is a dark gray with a subtle grid pattern.

rworld

100% CUSTOMER
RETENTION RATE

DOZENS
OF CELEBRITY
ENDORSERS

35 STATES
150 CITIES
12 COUNTRIES

230+ TONS
of CO2
ELIMINATED

94%
AVERAGE
RETURN RATE



Tomi Hulkko

CO Regional Director

650.649.8488

tomi@rworldreuse.com



Reuse Denver

Pilot Program for Food Establishments

Making the Case for Reusables

- The food service industry uses nearly 1 trillion pieces of disposable food service ware each year.
- Studies show that reusables are better for the environment than any single-use product, no matter the material type.
- During a 3-year pilot in California, businesses averaged an annual savings of \$3K-\$22K depending on the size of their establishment.



Reuse Denver Goals

- Help small businesses save money and create a better dining experience for customers.
- Transition 35 retail food establishments to reusable service ware for onsite dining.
- Make the process customized and easy for business owners.
- Prioritize women and/or minority-owned businesses but encourage any establishment offering onsite dining in Denver with washing capabilities to apply.



Reuse Denver Program Details

- Partnering with Diversion Designers to provide technical support.
- Purchasing up to \$600 worth of reusable service ware for each participant to meet their operational needs and aesthetic.
- Collecting data on cost savings and reduction in disposables for each participating business.
- Allowable use for Disposable Bag Fee funds.



Reuse Denver Data Collection

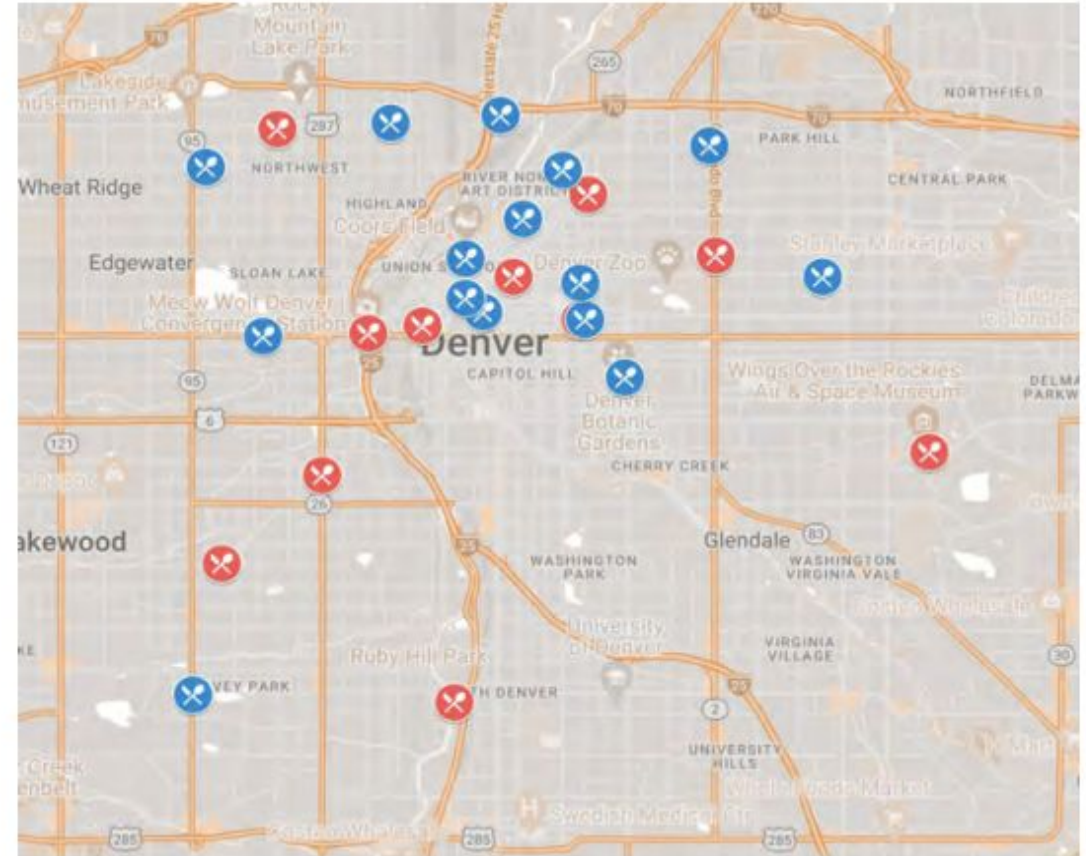
10 Denver food establishments participated in case studies to calculate Breakeven Points, Annual Cost Savings for Service Ware, and Annual Reduction in Disposable Service Ware Items.

- **Breakeven Point = Average # of uses before investment in a reusable service ware item is recovered.**
Average breakeven point for metal reusable utensils: 2-4 uses
- **Annual Cost Savings for Service Ware = (Annual cost of disposables - Initial cost of reusables)**
Annual cost savings from reusable service ware for 13 food establishments combined: \$43,530.68
- **Annual Reduction in Disposable Service Ware Items = (-) # of disposable service ware items previously purchased annually for dine-in customers**
Annual reduction in disposable service ware items by 13 food establishments: 299,655 items

Reuse Denver Participants

As of May 2024:

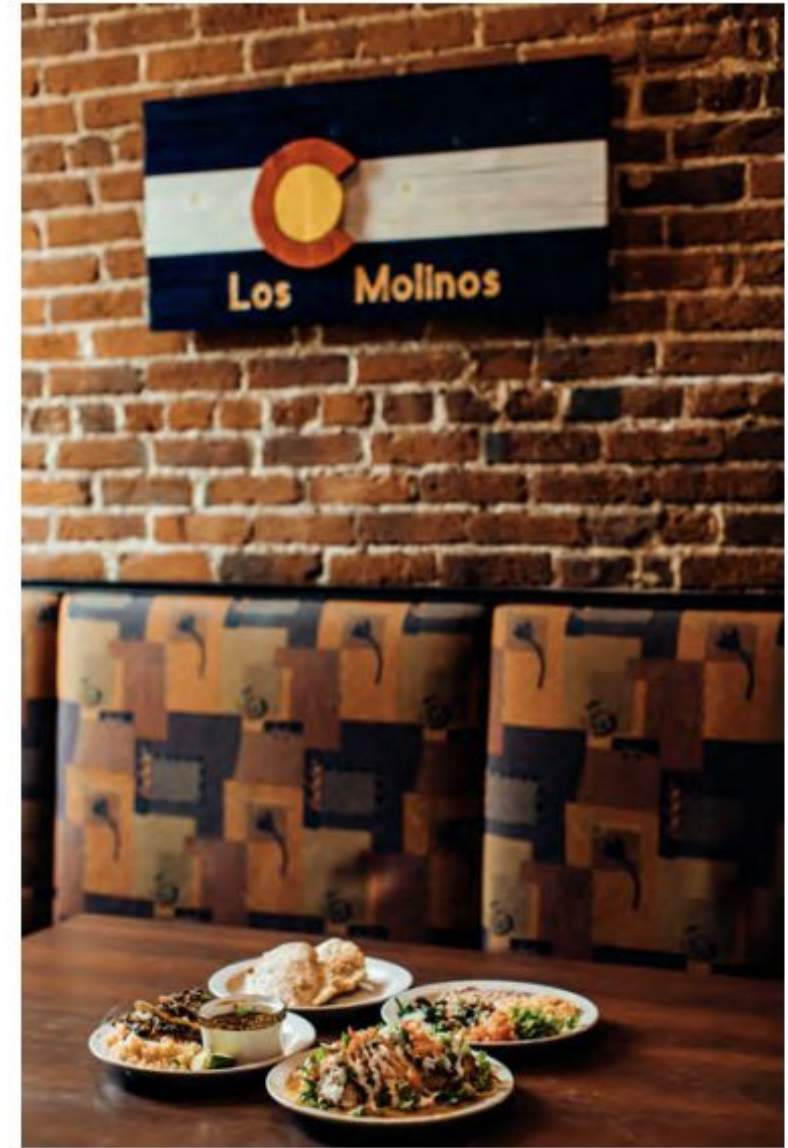
- 27 participating food establishments.
- 21 are women and/or minority-owned.
- Types of food establishments assisted:
 - Bar: 1
 - Bistro: 1
 - Cafe/Coffee Shop: 9
 - Casual: 6
 - Fast Casual: 8
 - Ice Cream: 2



❌ = Case Studies
❌ = Baseline Data Only

Highlights from Reuse Denver

- Developing 1-on-1 relationships with small business owners on the ground and supporting their individual needs.
- Understanding the full spectrum of costs and benefits to owners and employees when transitioning to reusables.



Challenges from Reuse Denver

- Recruitment
- Restaurant aesthetics and specific needs
- Increased labor vs. cost savings
- Dishwashing
- Vendors for reusables
- Shipping and logistics



Reuse Denver Contacts

Participants are still needed!

Easy application and FAQs can be found at [DenverGov.org/ReuseDenver](https://denvergov.org/ReuseDenver)

Becky Goyton

Circular Economy Specialist

Rebecca.Goyton@denvergov.org

Denver Office of Climate Action
Sustainability, and Resiliency

Amber Barbella

Owner/Operator of Diversion Designers

amber@diversiondesigners.com



Thank you!

melissa@upstreamolutions.org

**Sign up for the Reuse Solutions
Network!**

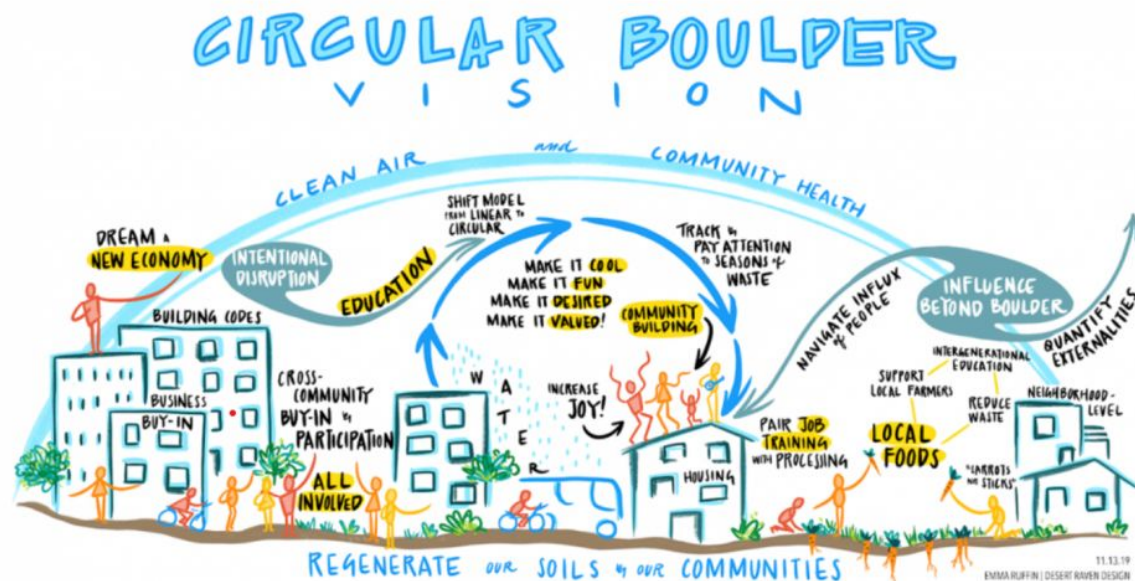
Upstream:
upstreamolutions.org/join



Reuse Systems in Boulder

Emily Freeman – Policy Advisor
June 4, 2024

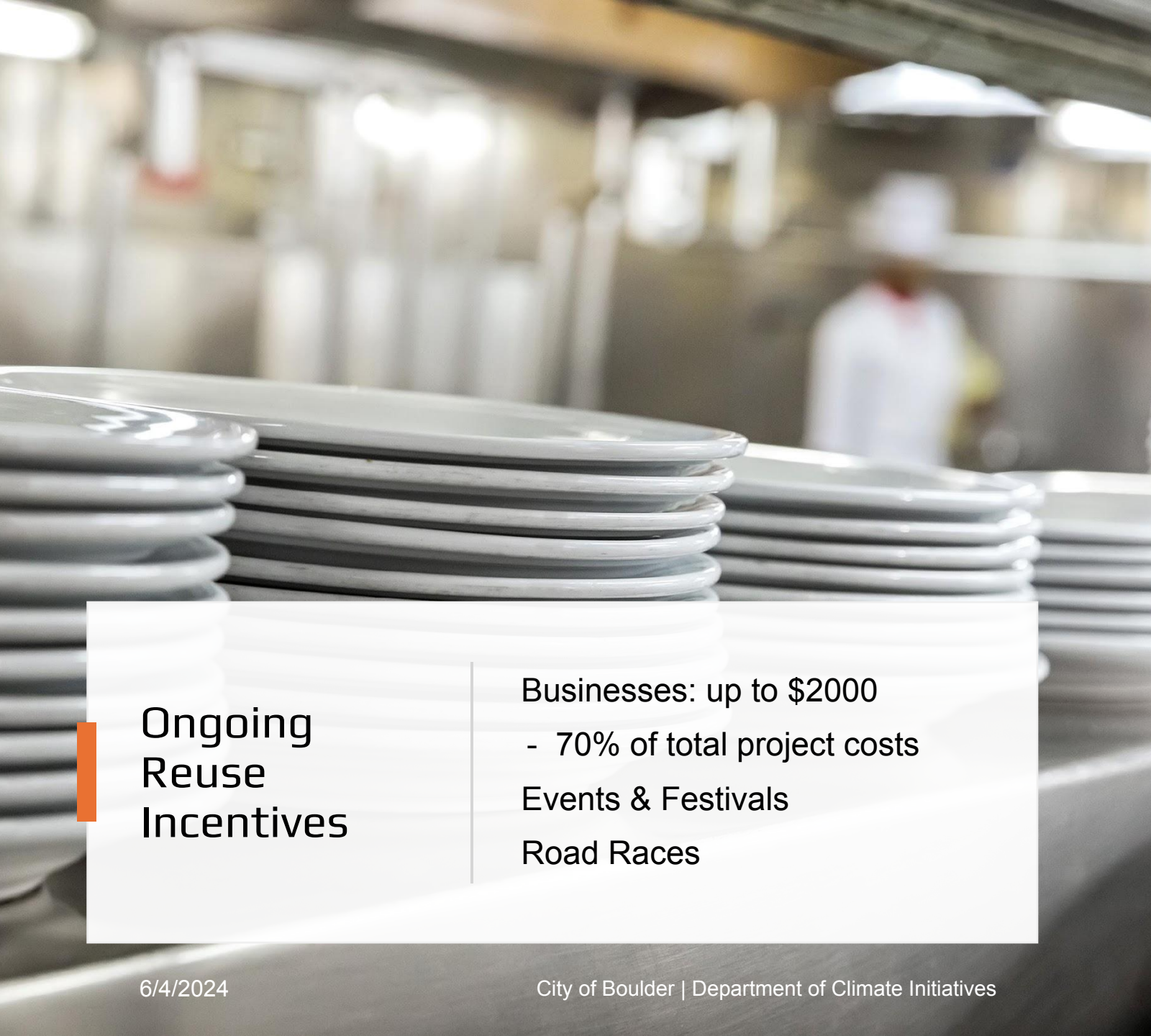




Reuse Objectives

- Systems change
- Increase reusable, returnable options / durables
- Increase public awareness & participation





Ongoing Reuse Incentives

Businesses: up to \$2000
- 70% of total project costs
Events & Festivals
Road Races



Collaborations

DeliverZero

2021 - Present



- 12 restaurants
- 2 Whole Foods locations
- 3 city-owned facility return locations



Single-use
containers avoided:
19,786



Landfill mass
reduction: 1000 lbs



GHG reduction:
2,500 kg



Water Saved:
8,275 gallons

Collaborations r.World

2023 – Present

- 7 events / festivals
- 2 event series
- 1 permanent venue



Total cups reused:
41,402



Waste diverted
from landfill: 395 lbs



CO2 eliminated:
2,886 lbs



Crude oil saved:
1,313 liters



Energy saved:
4,571 kWh



Water Saved:
8,275 gallons

Challenges

Early adopters

Fee vs. Free

Insufficient infrastructure access

Public awareness

Systems change

Single Use 'Plastics' Policy

- Achieve city's circular economy goals and targets
- Community priority
- Address plastic service-ware contamination
- New policy options available with PPRA's repeal of the local preemption
- Leapfrog compostables



Policy Levers

Bans & Fees

- Skip the Stuff
- Cup/Container fees

Catalyze Refill

- BYO – health code updates

Funding Systems & Infrastructure

- Reuse for on-site dining
- Reuse at events, lodging & venues
- Packaging EPR

Contact

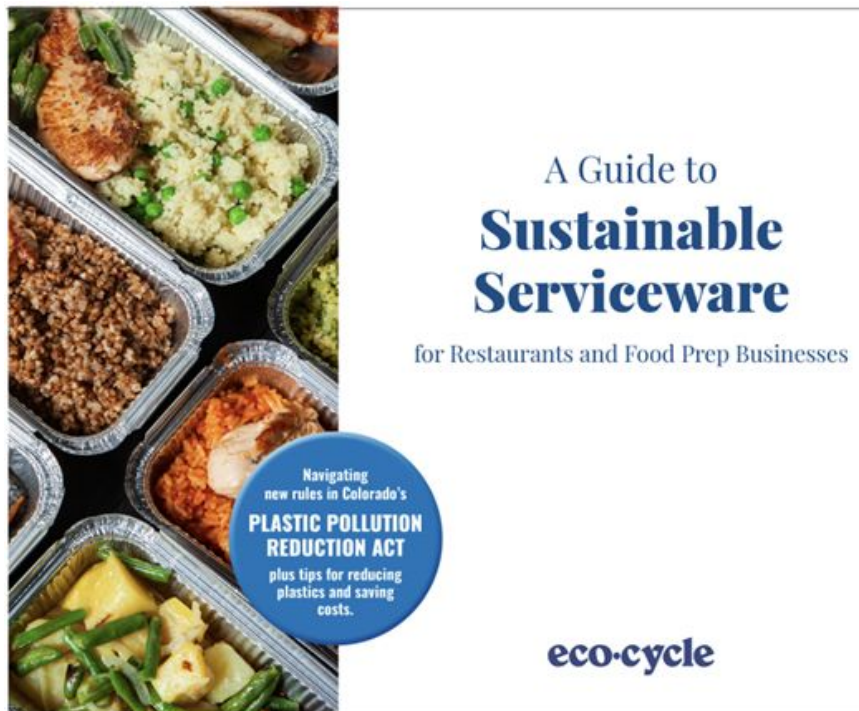
FreemanE@bouldercolorado.gov

303-441-1940







Eco-Cycle's Reuse Resources

Learn more at ecocycle.org/reuse
and ecocycle.org/reduce



How to REDUCE

As we go about our days, ordering take-out and making stops at coffee shops, it's easy to pick up unnecessary waste. These items may seem like innocent gestures of convenience, but each material has its own history of natural resource extraction, pollution, water consumption, and carbon impact. REFUSING single-use, wasteful products and REUSING durable, long-lasting items instead is key to living a Zero Waste lifestyle!
Here's our start-up guide for disposables to avoid and their reusable, durable alternatives.

AVOID	USE INSTEAD
 PLASTIC BAGS	Americans dispose of more than 100 billion plastic bags every year, and only a fraction are ever recycled. Up to 100 MILLION barrels of oil are needed to make the world's plastic bags each year. Yet, typical usage of a plastic bag is just 20 minutes. Instead, stock up on reusable bags and totes. 
 FOAM CUPS & CONTAINERS	Polystyrene foam, commonly called Styrofoam, contains styrene, a known carcinogen that can leach chemicals into food and drinks. Because polystyrene is so light, it can easily blow away and crumble into microplastics that pollute soil and water for centuries. Instead, bring your own cups for beverages and reusable containers to hold leftovers or take-out. 
 PLASTIC WATER BOTTLES & PLASTIC-COATED PAPER COFFEE CUPS	Bottled water uses more than 17 million barrels of oil per year to produce, and is often just tap water sold at 10,000 times the price. An estimated 50 billion paper coffee cups are thrown away in the US every year; these paper cups are lined with plastic and are not typically recyclable. Instead, remember to bring your own water bottle and travel mug. 
 PLASTIC UTENSILS & STRAWS	About 40 billion plastic utensils are used in the US each year for just a few minutes before they are discarded and sent to the landfill because they are not recyclable. Lightweight plastics like utensils and straws often end up in the environment, polluting. Instead, carry your own set of reusable utensils with you. 

*Combine all the reusables listed on this page to create your own Zero Waste on-the-go kit!

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Summit for Recycling - Fort Collins, Colorado - June 3rd-5th, 2024

Announcing: Colorado Reuse Coalition!

1. Focus on WASTE REDUCTION and REUSE SOLUTIONS in Colorado
2. Regular meetings and local resources
3. Sign up for the list →



Denver Reuse Economy Study

2023 study of resale, repair, and rental businesses

Study's Reuse Economy Definition

Businesses working in resale, repair, and rental services, excluding the automotive and home repair sector. The study focused on identifying brick-and-mortar businesses.

Reuse economy extends the life of products, resulting in economic, environmental, and community benefits.



Purpose of Study

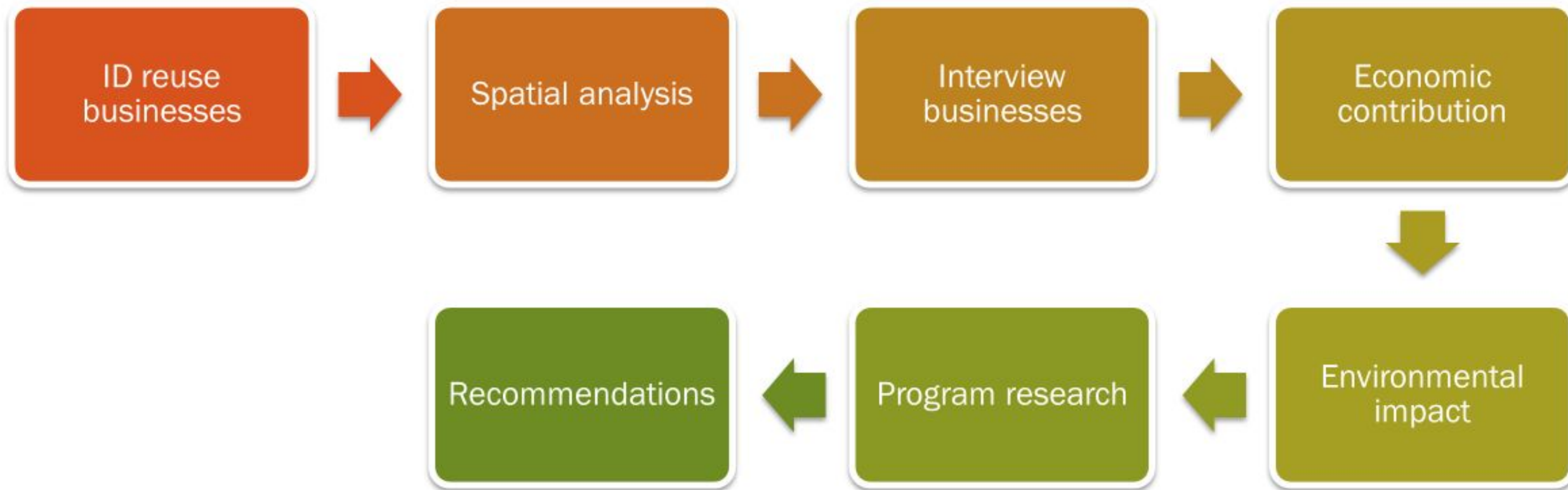
- Understanding of how reuse economy contributes to Denver's economy and greenhouse gas emission reductions, and the factors critical to equitable growth.
- Identify steps to support small businesses that keep goods in circulation for as long as possible.



A close-up photograph of a bicycle's rear fender and wheel. The fender is dark blue with white and yellow text. The wheel is silver with black spokes. The background is a blurred concrete surface.

Study Findings

Study Process



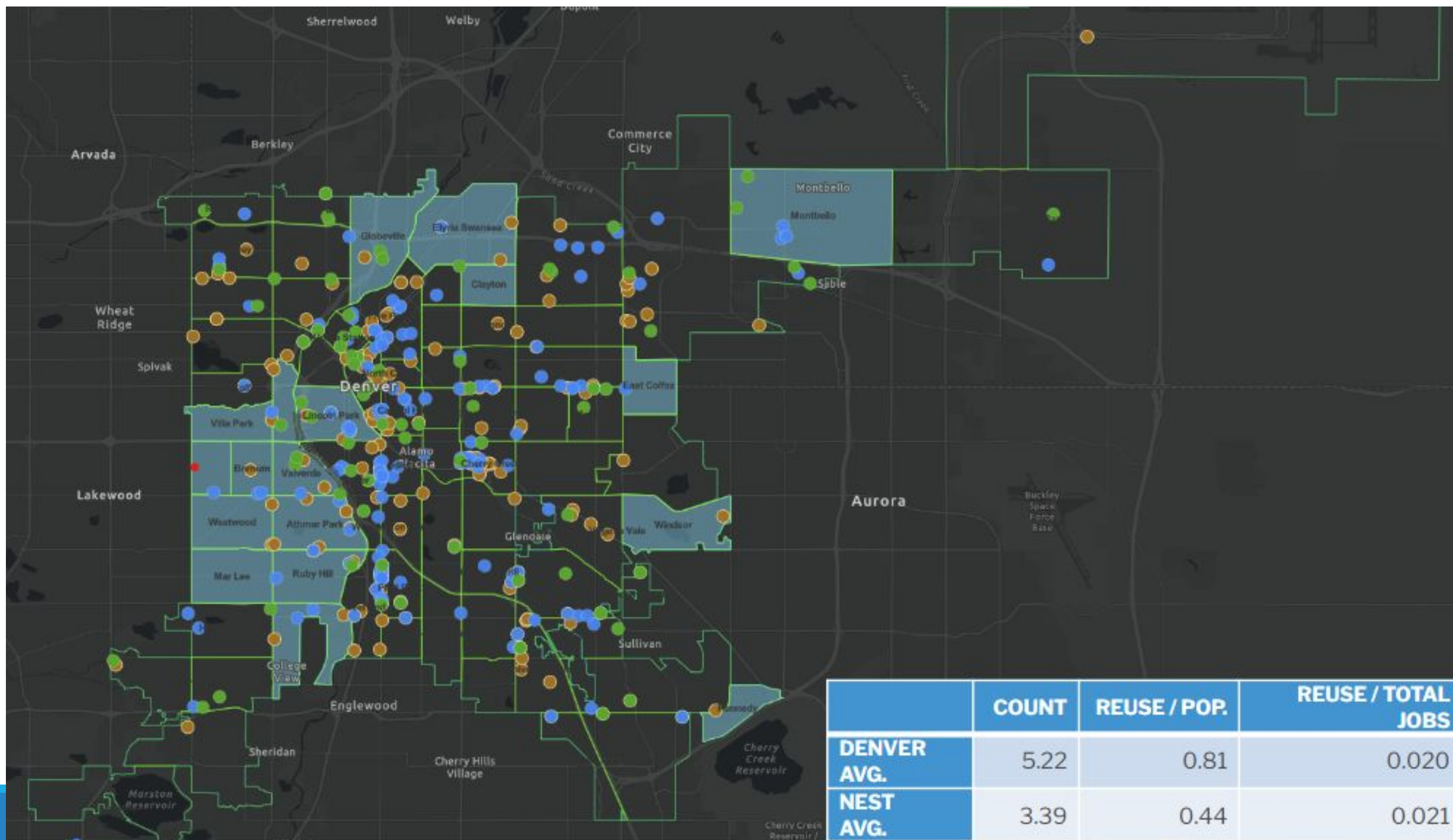
Identifying Businesses

409 total reuse businesses

1.5% of total employer establishments

13.1% of total retail trade (3,125 bus.)





Business Interviews

- Strengthen community ties and neighborhood connections
- Tend to be locally owned and operated (92%)
- Reported increased growth in sales year over year (64%)
- Don't see themselves as 'green'
- Require a labor force with specialized training and skills.
- The largest barriers are labor costs, rent increases, and ability to hire skilled workers.

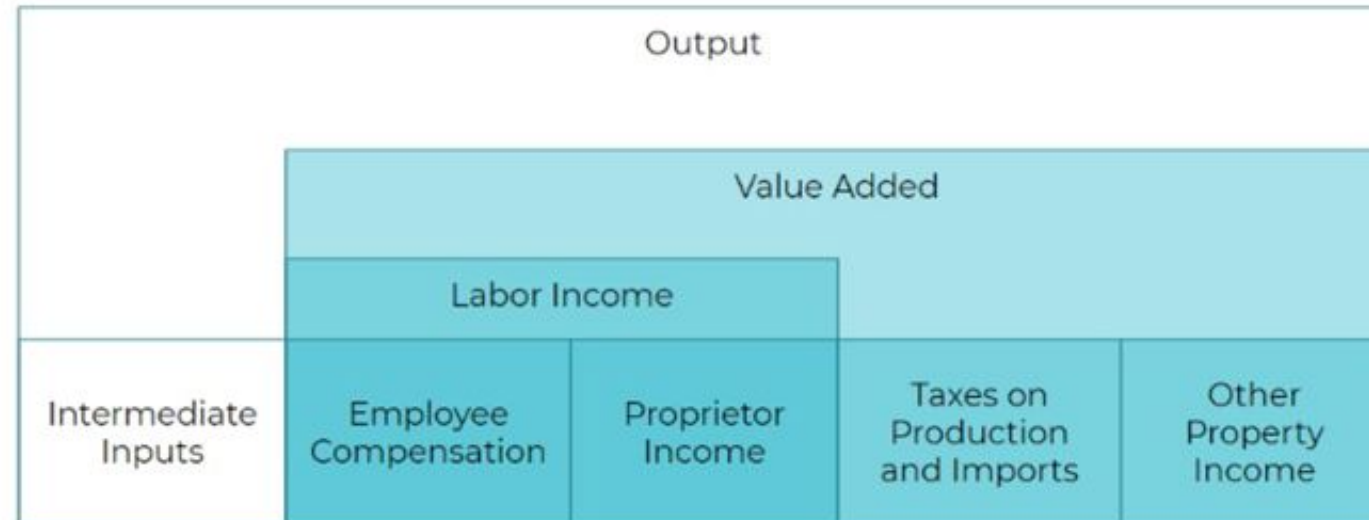


Economic Contribution

Identify Relevant Industry NAICS codes

Collect Data through Research and Surveys

Perform Economic Contribution Analysis with IMPLAN



Estimated economic contribution
of the resale, reuse, and repair
industry in Denver.



3,421 Jobs

in Denver



\$235M

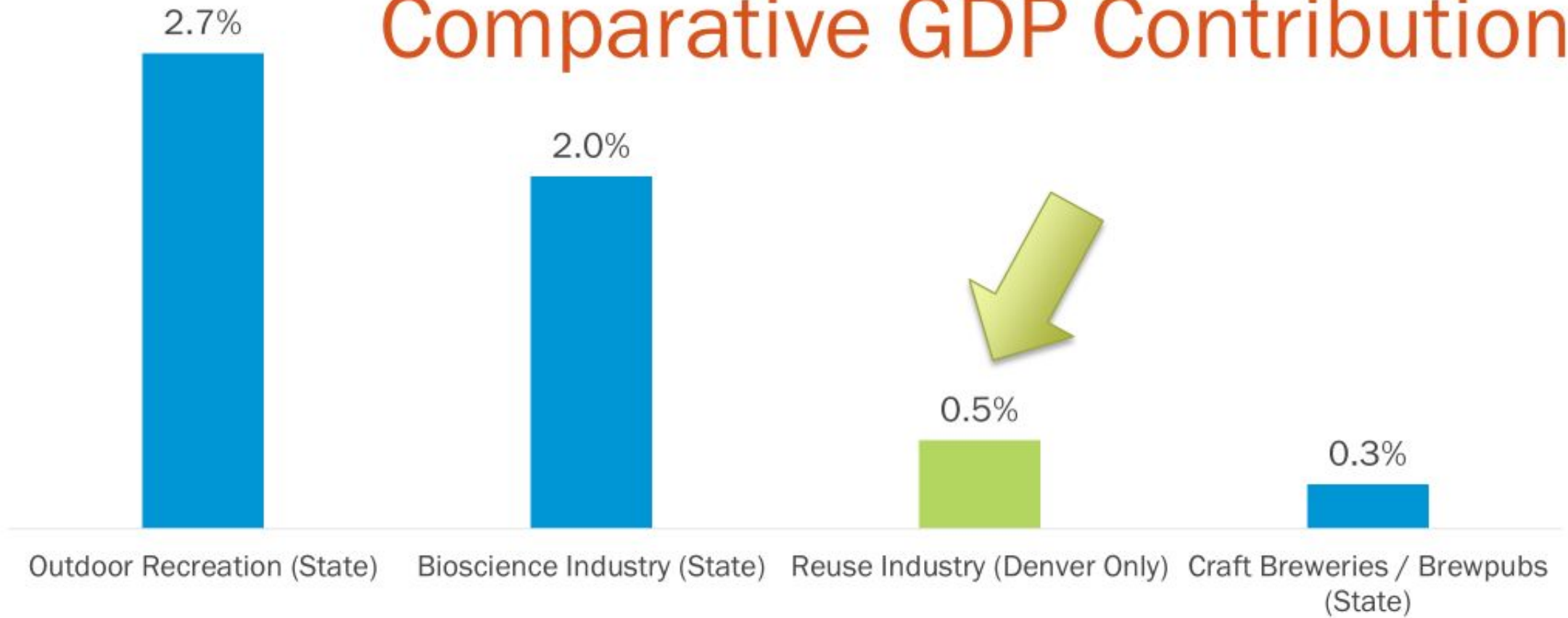
labor income



\$540M

total economic output

Comparative GDP Contribution



Environmental Impact Methodology



Thank You Greg!

Dr. Greg Norris, Director, Sustainability and Health Initiative

- Product categories tied to NAICS codes (interviews and research)
- USEEIO dataset was selected for product categories
- Results of economic analysis (jobs and sales) inputted
- Input-output modeling based on monetary flows of given supply chain for various industries

Estimated environmental benefit of
the resale, rental, and repair industry
in Denver.



Responsible for
223,700 MT CO₂e
annually avoided emissions

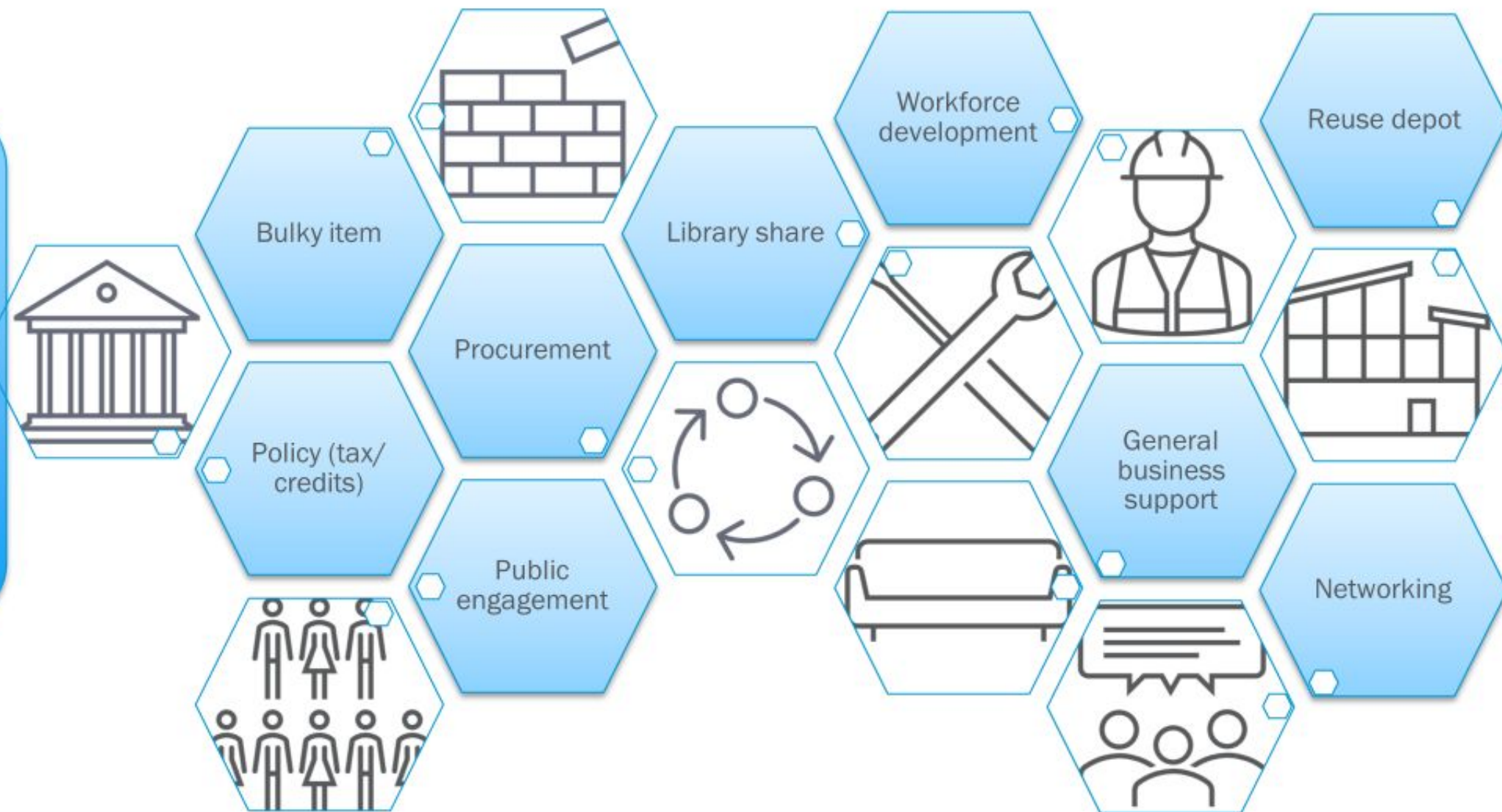


Equivalent to removing
50,000
gas powered vehicles
from the road per year



Equivalent to the GHG
emissions avoided by recycling
77,000 tons

Researched
~40 programs
around the
globe – from
CO, CA, TX, MA,
NY to SWE,
AUS, ENG, and
SCT



A close-up photograph of a bicycle fender, likely a rear fender, with the text 'MARF' and '40N' visible. The fender is dark blue or black. The background shows the spokes of the bicycle wheel and a white frame. A blue banner with white text is overlaid on the bottom left of the image.

Study Recommendations

Recommendations to Grow Reuse Sector in Denver

UPDATED SUSTAINABLE PURCHASING POLICY

Draft, adopt, and implement an updated sustainable purchasing policy (SPP) that favors reuse, repair, and durability over less sustainable options.

DEVELOP A REUSE DEPOT

Develop a permanent reuse depot in the city.

IMPLEMENT REUSE BUSINESS GRANTS

Administer mini-grants to support reuse business activities

PILOT A REPAIR VOUCHER PROGRAM

Pilot program that allows residents to redeem vouchers at in-network repair partners which are reimbursed by CASR.

ESTABLISH ONLINE REUSE DIRECTORY

Develop and promote an online directory of resale, repair, rental, and refill businesses operating in Denver

Establish Online Reuse Business Directory

JUSTIFICATION: Low-cost action with results that can be tracked annually, and addresses need identified by the stakeholders.

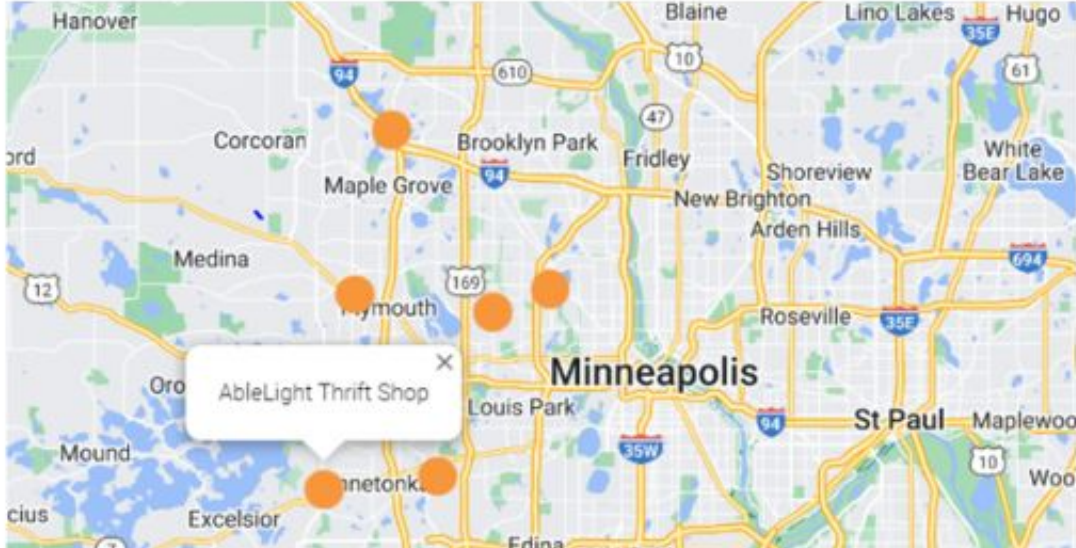
MODEL EXAMPLES: Austin Reuse Directory, Hennepin Choose to Reuse, Portland Repair Finder

NEXT STEPS: Launch directory as part of broader campaign aimed at normalizing reuse behaviors, sharing benefits learned from the study, and highlighting some of the reuse businesses.

Find where to donate, resell, buy responsibly, rent, and repair items, while supporting our local reuse economy.

Note: Select from left to right.

Looking To: Type of Items: Location:



The map displays the Minneapolis, Minnesota area, including surrounding suburbs like St. Paul, Edina, and Excelsior. Several orange dots are placed on the map to indicate the locations of reuse businesses. A tooltip box is open over one of the dots, identifying it as 'AbleLight Thrift Shop'. The map includes major highways such as I-94, I-35, and I-694, as well as local roads and neighborhood names like Brooklyn Park, Fridley, and Roseville.

Source: <https://austinreusedirectory.com/> and <https://www.hennepin.us/en/choose-to-reuse/learn-more>

Implement Reuse Business Grants

JUSTIFICATION: Will help tackle two hurdles identified by stakeholders (costs and workforce development) and can customize to prioritize women and/or minority-owned businesses and those in equity priority neighborhoods.

MODEL EXAMPLES: StopWaste Reuse and Repair grants, DEQ Repair and Reuse grant, Boulder Circular Economy Funding

NEXT STEPS: Additional surveying of stakeholders to determine needs and budget.



Update Sustainable Purchasing Policy

JUSTIFICATION: Denver's current Executive Order on Environmentally Preferable Purchasing is outdated, and this is an area where the city can leverage its buying power to support reuse and lead by example.

MODEL EXAMPLES: Toronto Green Procurement, Seattle and Portland Sustainable Purchasing Policy

NEXT STEPS: Convene internal city working group to determine policy framework, strategies for employee training and tracking, and staffing needs.



Pilot Repair Voucher Program

JUSTIFICATION: Program could drive local repairs, remove barriers to seek repairs, and build from other Denver models such as E-bike rebates and E-cycle coupons.

MODEL EXAMPLES: Vienna, Graz Austria, Portland OR

NEXT STEPS:

- Determine which items to focus on (ex: furniture would maximize environmental impact)
- Explore equity measures
- Learn from existing Denver programming
- Establish criteria for repair business network



Develop a Reuse Depot

JUSTIFICATION: High impact, needed infrastructure for long-term reuse solutions, support for complying with portion of Waste No More ordinance.

MODEL EXAMPLES:

- Houston (2009, \$150K, building materials)
- Sweden (2015, world's first reuse mall)
- Austin (2023 SWIFR grant, \$4M, furniture only)

NEXT STEPS: Feasibility study and securing funding



Questions?

Becky Goyton

Rebecca.Goyton@denvergov.org

Denver Office of Climate Action
Sustainability, and Resiliency

Juri Freeman

jfreeman@recycle.com

Managing Principal, RRS
www.recycle.com

Thank you & Contact info

