



DEPARTMENT OF
ECOLOGY
State of Washington

Glass Packaging Summit

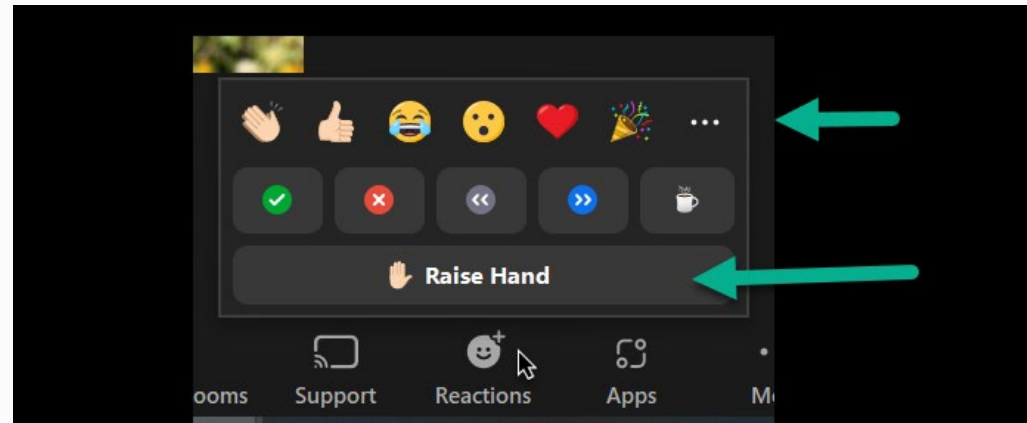
Recycling Market Development Center

Thursday May 2, 2024, from 9 am to 11:30 PST

Participating in this meeting:

Roles

- Zoom Host – Caleb
- Facilitator – Mya
- Note taker – Tina
- Chat monitor – Megan



Rules

- Be supportive and engaged.
- Cameras On if your bandwidth allows.
- Use reactions to keep it interactive.
- Use the chat to connect with each other.
- Questions, please raise your hand or type them in the chat box.
- I will call on you or we can read your question from the chat.
- Use the chat to message the team if you are having technical issues.
- Closed Captioning is available if you enable it.

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



Welcome and thanks for coming

Agenda

- 9:00 Welcome & updates – Mya Keyzers
- 9:25 Wine bottle packaging reduction – JJ Williams
- 9:50 Beer bottle packaging reuse – Matt Swihart
- 10:15 Wine bottle packaging reuse – Adam Rack
- 10:40 Glass to glass recycling – Scott DeFife & Chris Lueck
- 11:10 Discussion, connections, questions, roundtable - everyone
- 11:30 Wrap-up



Lightening the load of wine bottle packaging

JJ Williams from Kiona Vineyards on Red Mountain.



World Class in Lighter Glass

Kiona Vineyards and Winery - Red Mountain AVA

JJ Williams - General Manager

We Are a Big Little Winery

National + International, but not owned by Hedge fund

- We sell wine in ~40 states
 - Consolidation warehouses in Seattle and Sonoma
- Canada, England, Denmark, Japan
- We are the ~30th largest winery in Washington
- BUT, we are one of the largest high-end grape growers in Washington



Weight

= Quality

(Traditionally)



Glass manufacturers happy to oblige

CAPACITY (ml)	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
WEIGHT (oz/g)	12.00 340	12.00 340	14.00 397	14.00 397	16.50 468	16.50 468	21.00 595	21.00 595	19.40 550	18.10 513	22.40 635	22.40 635	22.47 637	22.63 642	22.98 651	23.35 662	23.88 677	23.50 666	24.86 705	31.92 905
HEIGHT (in/mm)	10.55 268	10.87 276	11.44 291	11.44 291	11.63 295	11.63 295	11.63 295	11.63 295	11.69 297	11.61 295	11.61 295	11.61 295	11.61 295	11.52 293	11.57 294	11.65 296	11.65 296	11.93 303	12.00 305	11.97 304
DIAMETER (in/mm)	3.22 82	3.18 81	3.11 79	3.10 79	3.21 82	3.20 81	3.25 83	3.27 83	3.23 82	3.37 86	3.46 88	3.47 88	3.46 88	3.48 88	3.48 88	3.46 88	3.43 87	3.37 86	3.34 85	3.48 88
CLOSURES	Cork	Stelvin*	Cork/ Bartop	Stelvin*	Cork	Stelvin*	Cork	Stelvin*	Cork	Stelvin*	Cork	Cork	Stelvin*	Cork	Cork	Cork	Cork	Stelvin*	Cork	Cork

June 28, 2021

Make Announcement

- “World Class in Lighter Glass”
- All wines, regardless of price, would go into 468-gram “Ecoglass” bottles
- Standard mold across manufacturers
- COVID - sourcing HARD



NO CAPSULE

YOU'RE JUST GOING TO CUT IT OFF

55 11 CLARET

12.43 LBS PER CASE (EMPTY) WHICH IS

- 33% LIGHTER THAN OUR PAST RM CABERNET BOTTLE
- 34% LIGHTER THAN OUR PAST RM OLD BLOCK BOTTLE
- 47% LIGHTER THAN OUR PAST RM RESERVE BOTTLE

IT HOLDS THE SAME AMOUNT OF LIQUID.

STANDARDIZED

ALL KIONA PRODUCTS WILL USE LIGHTER GLASS BOTTLES.

IT SAVES CO2. THEY'RE EASIER ON OUR EMPLOYEE'S BODIES. OUR CUSTOMERS WILL PAY LESS FOR SHIPPING.



Kiona

WORLD CLASS IN LIGHTER GLASS

In Freedom Units, please.

- 470 Gram Bottle = **12.43 pounds** per case empty
- 700 Gram Bottle = **18.52 pounds** per case empty
- 880 Gram Bottle = **23.28 pounds** per case empty
- There are bottles out there that are over 1,200 grams per bottle = **31.75 pounds**

- 470 vs 880 Gram Bottle = **Each 56-case pallet is 607.6 pounds heavier**

Bottles Move Around A Lot

Lots of Links in the Supply Chain

- Glass manufacturer -> Glass brokerage warehouse
- Glass brokerage warehouse -> Kiona
- Kiona (filled) -> Consolidation warehouse (Seattle or Sonoma)
- Consolidation warehouse -> Distributor warehouse
- Distributor warehouse -> Retailer/Restaurant
- Retailer -> Home to Consumer End Point

Better for Consumers

Save on Direct-to-Consumer Shipping Costs

- Shipping a 34.5 lb case from Benton City to Boston, MA on December 21, 2021:
 - **\$31.71**
- Shipping a 45 lb case from Benton City to Boston, MA on December 21, 2021
 - **\$36.94 = 16.5% more**

Started to Get Attention

Quieting the “but what about this” crowd



Wine Industry Starting to Pay Attention

Reviewers, Importers, & Buyers

The Washington Post
Democracy Dies in Darkness

The Washington Post
Democracy Dies in Darkness

GREAT VALUE

Jezebel Pinot Noir 2022

★★★☆☆ (3 stars)

Oregon, \$22

Jezebel is a label of Oregon's Willful Wine Co. crafted in a fruit-forward style. Dark cherries and blackberries seasoned with baking spices

the palate with a pleasant and juicy, jammy finish. ABV: 13.5 percent. BW: 480 grams (Light).

Distributed locally by [Salveto](#).

Clean Slate Riesling 2021

★★★☆☆ (3 stars)

Mosel, Germany, \$13

Peach, apricot and a hint of honey give this off-dry riesling depth. It's a delicious introductory wine for people unfamiliar with the Mosel, Germany's most famous wine region. The clever name only hints at the possibilities for exploring the various slate soils of the Mosel and how they express themselves in the wine. Alcohol by volume: 10.5 percent.

Bottle Weight: 580 grams (Average).

Imported and distributed by [Winebow](#).

Wine Industry Starting to Pay Attention

Reviewers, Importers, & Buyers

Tim James: Those not so green bottles

By Tim James, 22 February 2021

SHARE:    

 3



Early adopters of the ultra-heavyweight embossed Stellenbosch bottle.

Pretentiously massive wine bottles, designed to proclaim the high quality of their contents, are not the prerogative of the New World. Well, not entirely. The first time I can remember becoming aware of a ridiculously excessive lavishing of



Jancis Robinson

15 Feb 2021

FREE FOR ALL

PACKAGING

BOTTLE WEIGHT



Bottle weight – goodies and baddies



7 April 2021 See [this report by Alder](#) on Nomen, a new American wine brand deliberately packaged in high quality plastic bottles.

22 February 2021 See [Tim James's discoveries](#) when weighing bottles of South African wine. Worst offenders are the proudly 'masculine' special bottles for Stellenbosch Cabernets.

15 February 2021 Readers' reactions to our new bottle-weighing policy. (Note that, for practical reasons, we weigh bottles when they are full and that most bottles contain 750 ml)

World Class in Lighter Glass

We're Down with Lightening Up



Napa Valley
Register

"Lighter Bottles - At Last"

"Winery Shrinks Their Environmental
Footprint With Lighter Weight Bottles"

Sip
MAGAZINE

"Kiona Vineyards Lightens its (Glass)

Load - While Doing Its Part for the
Planet"

Rolling Stone

"What Is Next For Sustainability In The
Drinks Industry?"

In 5 years, heavy bottles will be seen as over-the-top, garish, and conspicuously wasteful.





Questions?

jj@kionawine.com

@kionawine



Beer bottle packaging reuse

Matt Swihart from Oregon's Double Mountain Brewery.



Photo credit [Double Mountain Brewery](#)



Wine bottle packaging reuse

Adam Rack from Revino.





REVÍNO

THE REVINO TEAM



Keenan O'Hern | Adam Rack | Callie Edwards

Experienced team in: Wine Management, Supply Chain, Reuse Systems, Reusable Bottle Program Management, Production, Startups, and Marketing & Sales



**We will revive the reusable glass
bottle ecosystem, cleaning the
planet *one bottle at a time.***

REVINO



THE PROBLEM TODAY

1. Glass packaging: Responsible for **30-60%** of overall winery emissions.
2. Glass is a negative commodity in recycling.
3. Glass is the *only* **inert packaging material** for wines.



INCONGRUITY



Bottles

Estimated 70% go to landfill.

VS

Glassware

Cherished item with unlimited reuse potential.

SAME
MATERIAL

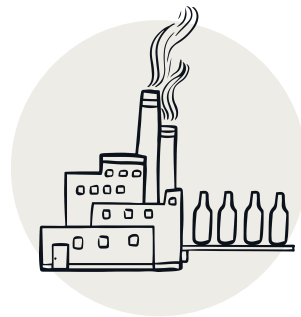


The UNITED STATES remains one of the only industrialized nations lacking commercial scale return and reuse bottle infrastructure.

98% of beer bottles sold in Ontario returned and reused in 2023



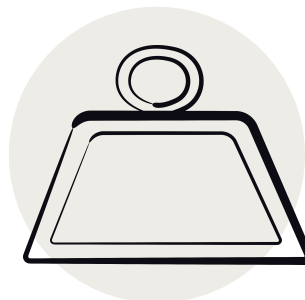
WHY REUSE MATTERS



Unstable glass import markets.



Stabilizing factor in glass costs for ALL of us.



Scarcity of raw materials

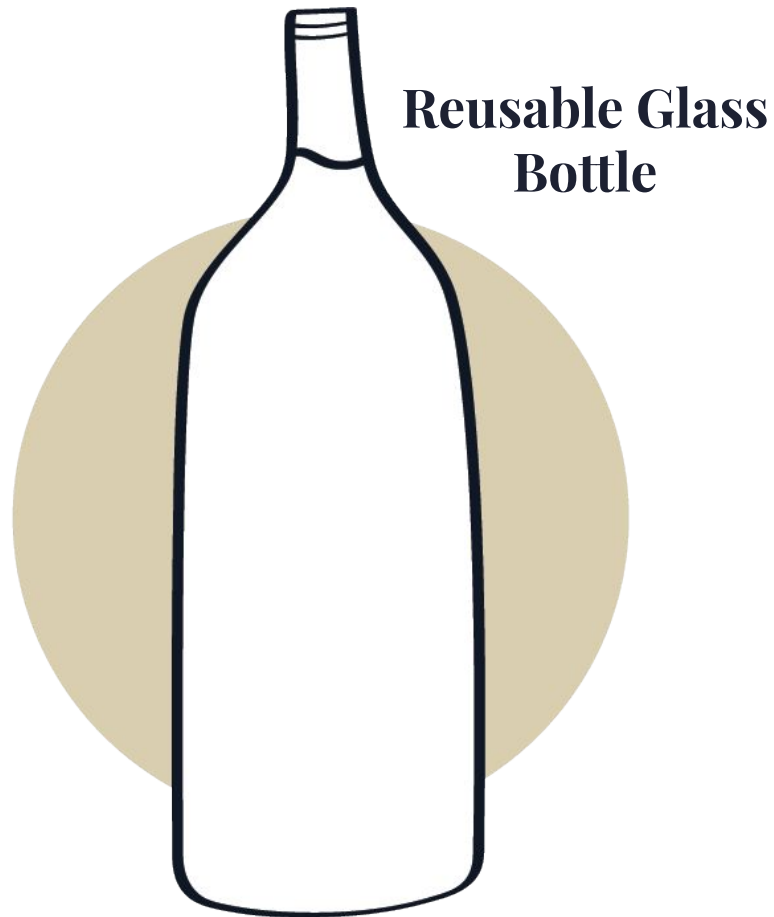


Our only sustainable (wide definition) option.



REUSE = MOST SUSTAINABLE

CO₂ emissions reusable glass bottles vs. single-use containers.



VS.

85% Less Emissions
than Single-Use Glass



70% Less Emissions
than Single-Use PET



57% Less Emissions
than Single-Use Cans

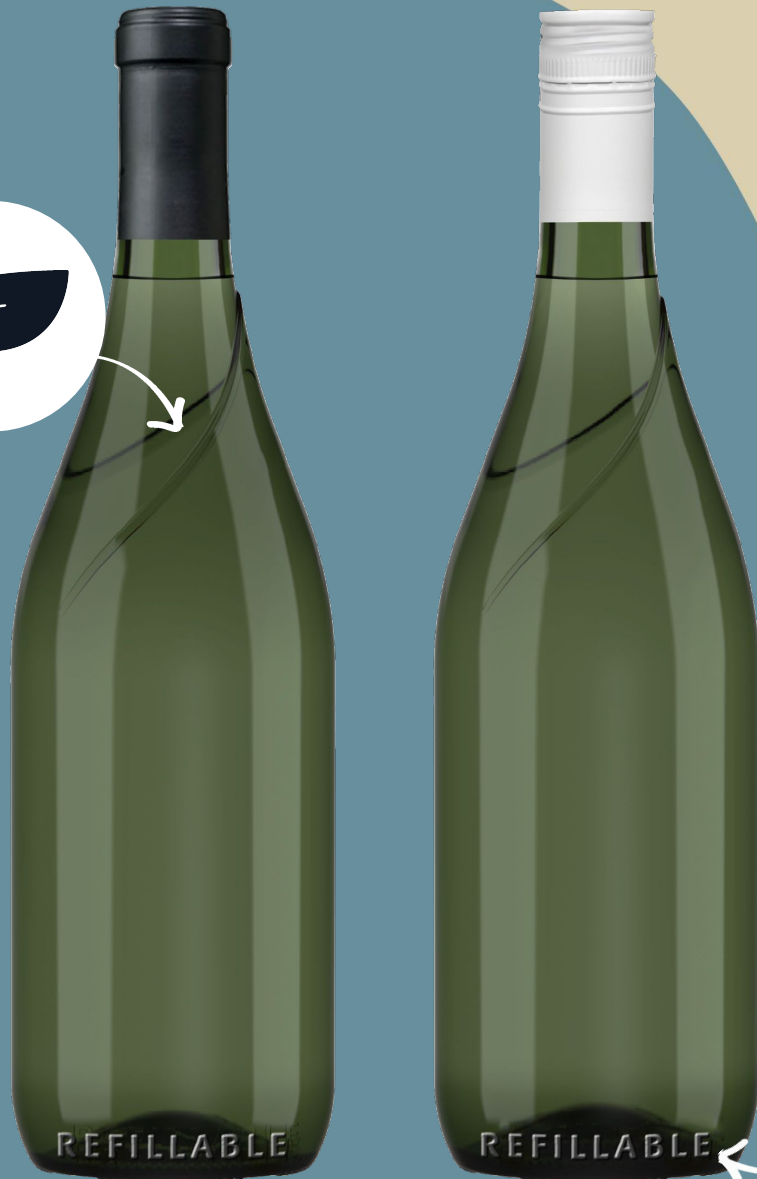


START WITH THE BOTTLE

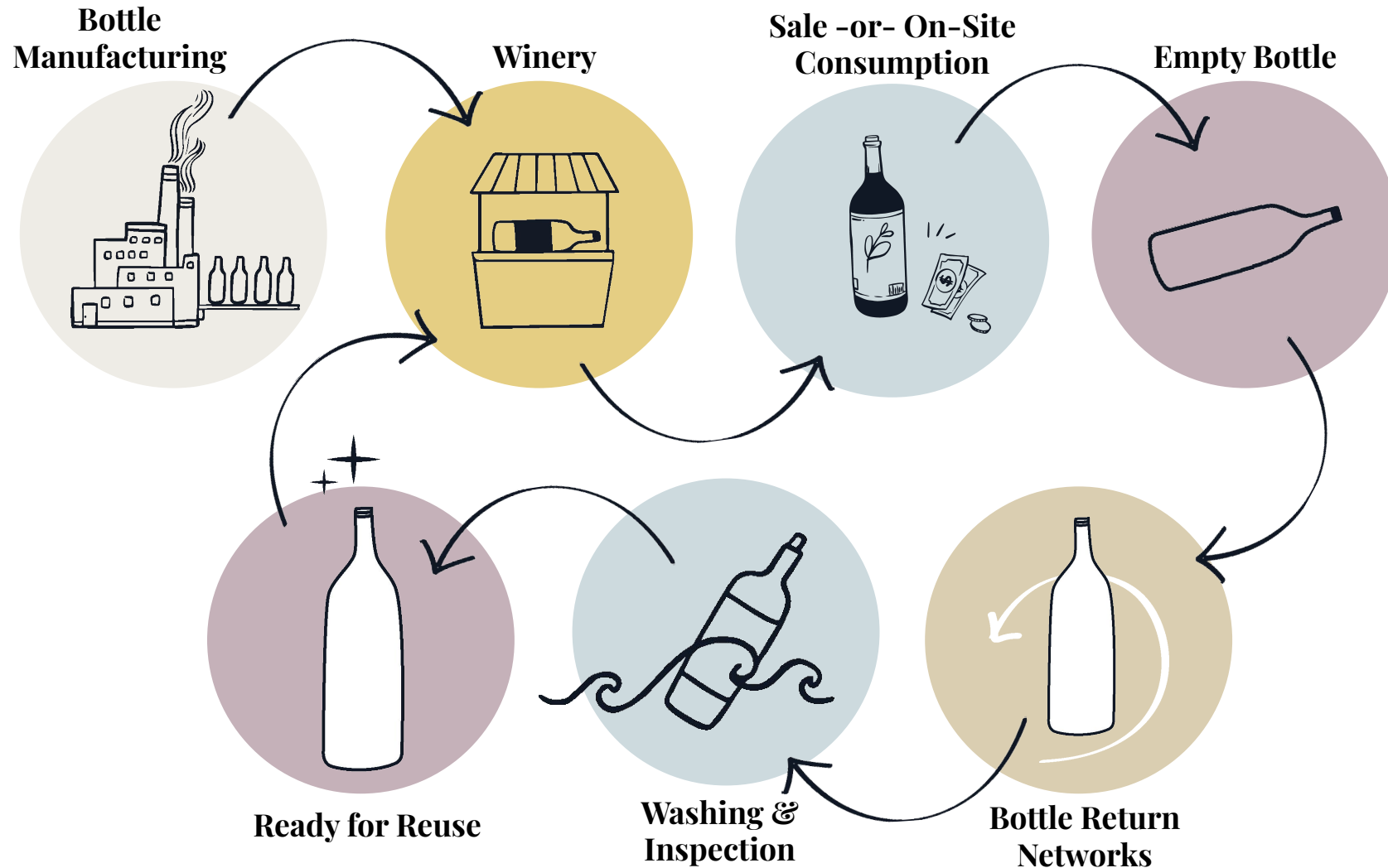
Elegant & Identifiable

Designed by wineries, for wineries.

- Sortable in optical sorting systems.
- Compatible with standard bottling, washing & inspection equipment.
- Comparable cost to similar bottles.
- Carrier/Branding of sustainable values.



LIFE OF A BOTTLE





OUR COLLABORATIVE ECOSYSTEM

Revino has first mover advantage and established relationships with wineries

Industry

Pinnacle of sustainable packaging.



INTERNATIONAL WINERIES FOR CLIMATE ACTION



the PORTO PROTOCOL

Retailers & Consumers

Interactive packaging and sustainable shopping.



EREWHON

Bottle Manufacturing

Production & end of life recycling.



REVINO

Environmental Advocates, NGOs, & Policy

Launchpad for reuse policy language & POC showroom



Distribution Networks

Environmental leadership and standout service



Bottle Return Infrastructure

Network access and material acquisition



recyclops

HOW TO ENGAGE

Select reusable bottles for:

- All DTC and West Coast focused wines.
 - A replacement for all bottles over 500 g
-

Share **forecasted volumes** and **bottling dates** for refillable bottles.

Engage your network: Talk about packaging!

Tell us what you need for success.

- Next bottle types and colors.
- Educational materials, pickup changes, ect.
- Data and success stories



BORDEAUX DEVELOPMENT



Design Process: Starting in May

Facts

- **Engineered for Reuse**
- **Design and Manufacturing:** O-I Glass
- **Manufacturing Plant:** Tracy, CA -or- Portland, OR

2025 Release

- Punt will feature newly voted PR3 reuse symbol, infinity sign.



WASHINGTON MARKET - NextCycle

Tasting room programs

- Drive foot traffic & encourage return visits.
- Divert bottle waste from on-site use.

Long term

- Retailer Partnerships
- Bag Drop Systems, reuse 'rates and dates'
- Deposit Return Depot

Help scale reuse

- Connect with us.
- Choose reusable, sortable bottles.
- Share the message.





“the reality is that it is working at a huge scale”

– Matt Littlejohn, Senior Vice President, Oceana.

“This is the future of the wine industry”

– Eric Asimov, Reporter, New York Times.

“If you don’t join now, you’ll be dragged along when consumers demand it”

– Jess Pierce, Winemaker and Producer, Pierce Wines.

Revino Featured In:



FAST COMPANY

salon

SevenFiftyDaily



WINEENTHUSIAST

KGW8



PORTLAND BUSINESS JOURNAL

QUESTIONS

Looking forward to working with you as stewards towards a more sustainable industry!

Contact:
adam@revinobottles.com
keenan@revinobottles.com

The Revino logo, featuring the word "REVINO" in a white, stylized, sans-serif font. The letter "V" is replaced by a silhouette of a wine bottle. Below the text is a white, curved line that resembles a smile or a swoosh.

REVINO

RESOURCES

Research & Studies

[ZWE Oct20218 Case-Study Consumption-and-Production reWINE.pdf](#)

[zwe_reloop_report_reusable-vs-single-use-packaging-a-review-of-environmental-impact_en.pdf.pdf_v2.pdf](#)

[Willamette Valley Facts and Figures | Willamette Valley Wineries](#)

[Economic Impact](#)

[GPI: Glass import backlogs do not equal US glass "shortage" - Glass Packaging Institute](#)

[Research - Google Docs](#)

[Is Plastic Recycling A Lie? Oil Companies Touted Recycling To Sell More Plastic : NPR](#)

[California Investigating Oil Companies For Alleged Plastic Recycling Deception : NPR](#)

[Promises on fighting climate change are falling far short : NPR](#)

[Mckinsey Sustainability in Packaging Five Key Levers For Significant Impact](#)

Supporting Articles

[Refillable Bottles Offer Benefits to Breweries | BeerAdvocate](#)

[Bay Area wineries will soon ask you to return bottles](#)

[Coca-Cola plans to use more refillable bottles. Why aren't all soda bo](#)

[Home page - The French Agency for Ecological Transition](#)

[2023 wine predictions: Higher prices, new zero-alcohol options and more - The Washington Post](#)

[2022 Year In Review: M&A Market Remains Active in 2022 in California and Pacific Northwest](#)

[Department of Environmental Quality : Oregon's Evolving Bottle Bill : Recycling : State of Oregon](#)





Glass to glass recycling via Hub & Spoke model

Scott DeFife from Glass Packaging Institute and Chris Lueck from BIG Recyclers



BOTTLE-TO-BOTTLE RECYCLING VIA CLOSED LOOP CIRCULAR ECONOMY IN EASTERN WASHINGTON

CHRIS LUECK, BIG RECYCLERS & SCOTT DEFIFE, GPI



**LACK OF GLASS
RECYCLING
INFRASTRUCTURE**

**DISTANCE TO END USE MARKETS
& DISAGGREGATION OF VOLUME**

**90K TONS NEEDLESSLY
LANDFILLED ANNUALLY**



OPPORTUNITY TO IMPROVE GLASS RECYCLING IN EASTERN WASHINGTON

- Home to more than 500 wineries and craft beverage producers
- Opportunity to fill gaps in Washington's circular economy



HISTORY

Started out in 2019 as Ground2Ground Glass

A small group of wine producers and concerned residents were fed up with the lack of glass recycling options in Walla Walla. We bought a glass pulverizing machine, started collecting bottles every week from 24 wineries, and turned 1 ton of glass bottles into glass sand every week.

Hoping we were on to something, we tried persuading public works, parks and recreation, wastewater treatment, and landscape companies they could use this material instead of quarried sand. But it fell on deaf ears, and in 2022, we shut down our operations.



GO *BIG* OR GO HOME

Every week during the busy tourist season, Walla Walla tasting rooms throw out more than 4+ tons of glass. We needed to find a way to get more glass to the factories over in Portland and Seattle.

But how?



It was at this same time GPI was looking at Eastern Washington as an untapped market for recycled glass for their three manufacturing facilities in Seattle and Portland. We started collaborating, bringing into the discussion Strategic Materials Inc., Basin Disposal Inc., Glass to Glass, Ardagh Glass, Pioneer Packaging, and Owens Illinois. Through NextCycle Washington, everyone was able to collaborate to make the dream a reality.

PARTNERS



BASIN
disposal



ArdaghGroup



P **PIONEER**
PACKAGING

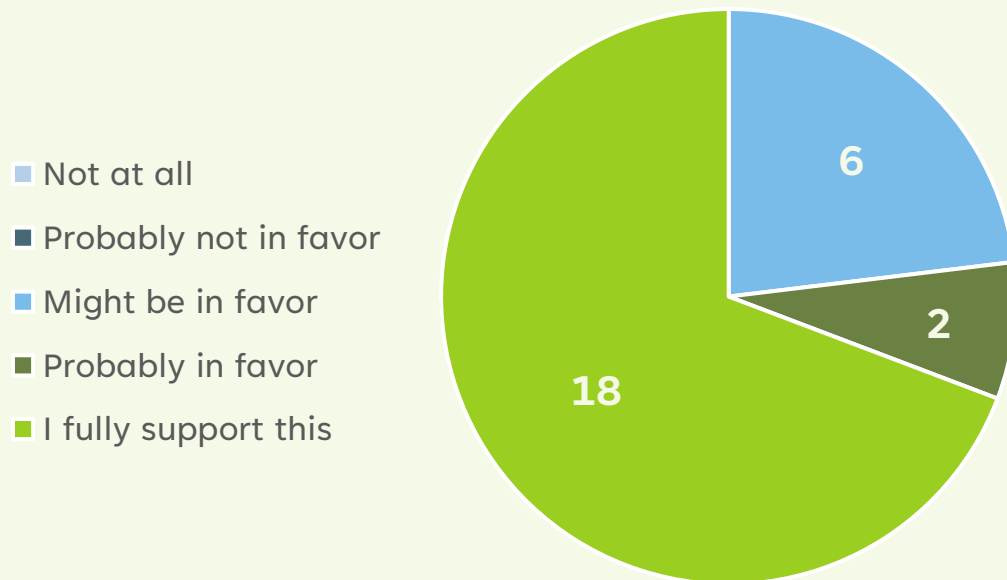


B**I****G**

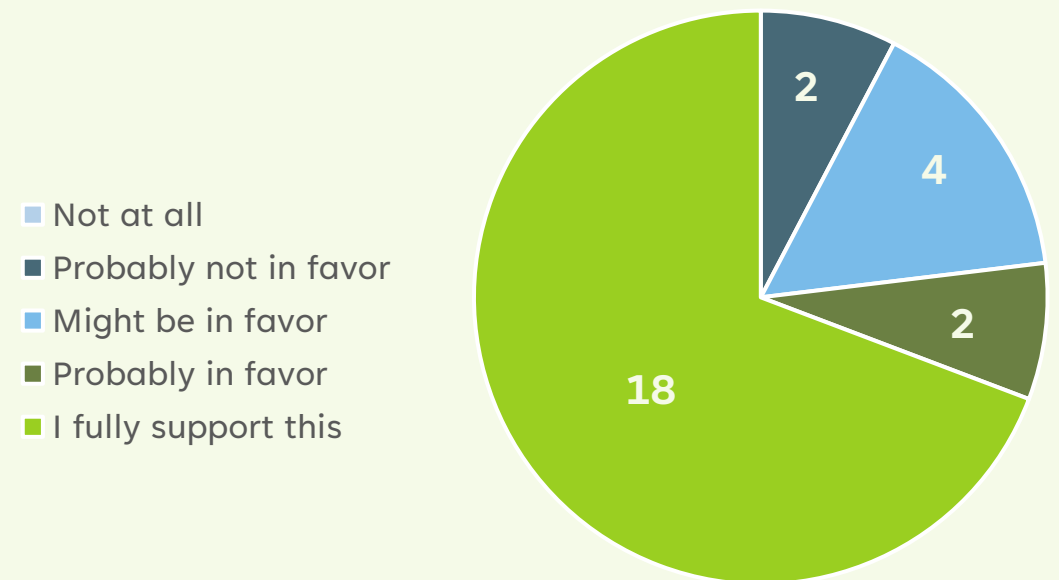
WINERY RESPONSES

- “Long overdue concept I am happy to support!”
- “We truly see this as a problem that we can help to solve.”

DOES YOUR WINERY SUPPORT RECYCLING EMPTY GLASS WINE BOTTLES?



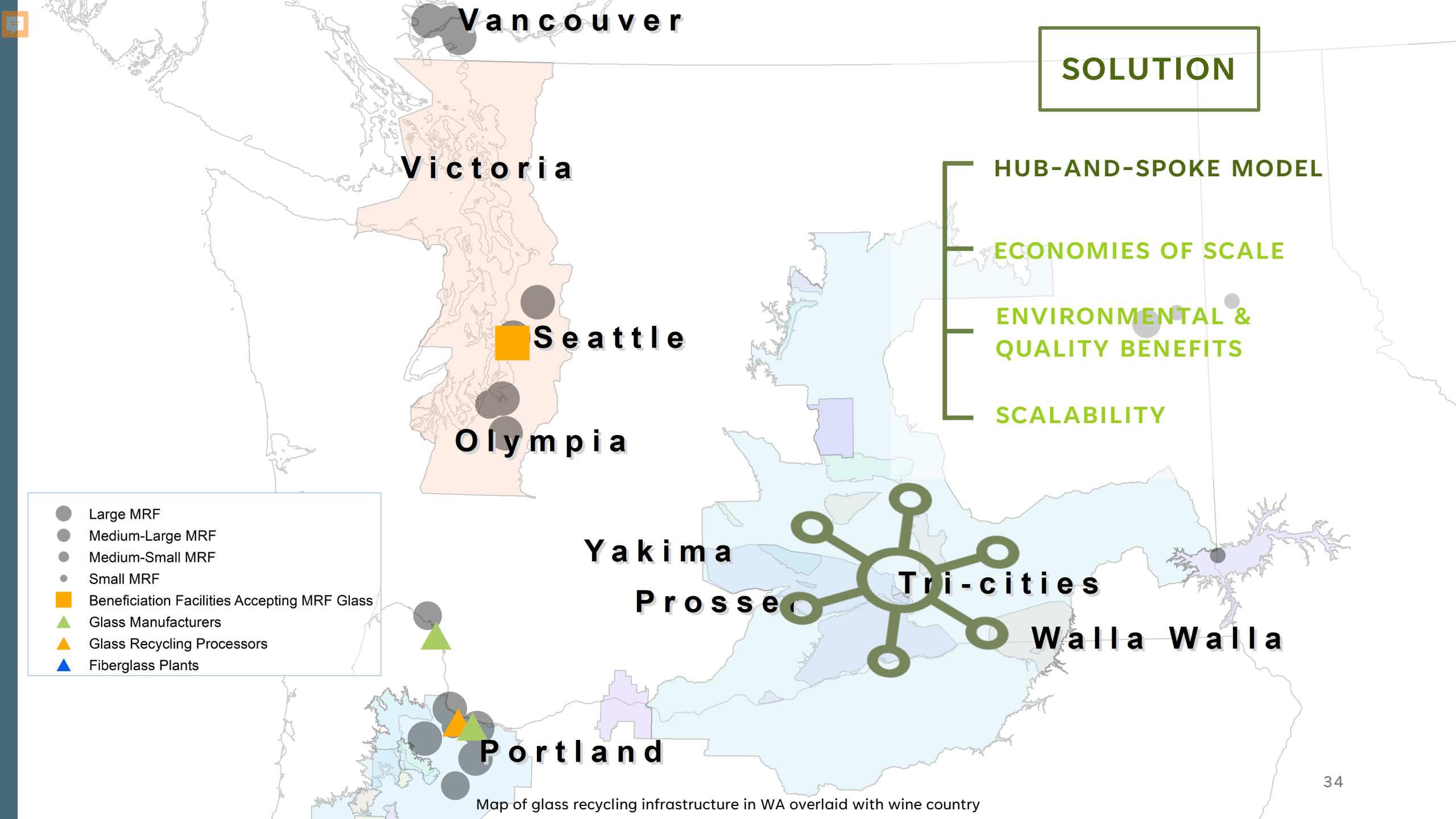
WOULD YOU BE PREPARED TO DROP OFF CLEAN AND EMPTY WINE BOTTLES AT THE AIRPORT SPOKE?



HUB AND SPOKE MODEL

- ❖ Our project is a small version of successful Hub & Spoke models already up and running throughout the United States. GPI has collaborated with metropolitan regions like Tucson/Phoenix, Atlanta, Ann Arbor, Michigan, Raleigh/Durham, and Chicago.
- ❖ Currently there are two spokes in eastern Washington. Walla Walla & Benton City. Walla Walla is hopefully expanding to the Dayton/Waitsburg area starting in June 2024.
- ❖ All glass collected at the Spokes end up at the Hub, located at the BDI Solid Waste facility in Pasco.





Vancouver

SOLUTION

Victoria

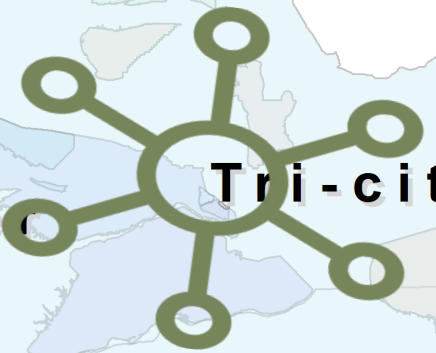
- HUB-AND-SPOKE MODEL
- ECONOMIES OF SCALE
- ENVIRONMENTAL & QUALITY BENEFITS
- SCALABILITY

Seattle

Olympia

- Large MRF
- Medium-Large MRF
- Medium-Small MRF
- Small MRF
- Beneficiation Facilities Accepting MRF Glass
- ▲ Glass Manufacturers
- ▲ Glass Recycling Processors
- ▲ Fiberglass Plants

Yakima



Tri-cities

Prosser

Walla Walla

●

Portland

Map of glass recycling infrastructure in WA overlaid with wine country

GLASS AGGREGATION BENEFITS

- ❖ Hub-and-spoke system beneficial for smaller or more rural communities. Can provide regional solution.
- ❖ Aggregation can range from solely aggregating glass to including sizing, fines removal, or full glass cleanup.
- ❖ Much smaller footprint than MRF.
- ❖ Can be co-located at places with bulk sand, concrete, grave or public works yards.
- ❖ Glass accepted usually is residential or commercial drop off but can also be from curbside collection.
- ❖ Typically, the quality for drop off glass is much higher.



2023 COLLECTION NUMBERS



- ❖ Total glass recycled from both sites = 158,000 lbs. (79 tons) in just six months!
- ❖ Walla Walla recycled 110,000 lbs.
- ❖ Benton City recycled 48,000 lbs.
- ❖ In 2023, 40 tons of our glass has been recycled through Glass to Glass in Portland. Another 20 tons is scheduled for westside end markets by end of May 2024.
- ❖ BDI does not charge us for the glass bunkers at the Pasco facility



SUSTAINABLE FUNDING

- ❖ Glass to Glass and SMI donate 3 trucks for glass p/u (\$800 - \$1,400 per 20 tons).
- ❖ Transportation is always the biggest financial hurdle but clean glass is in high demand.
- ❖ BIG Recycler's glass is fetching \$20/ton.
- ❖ Most expenses are covered by annual memberships (residential and commercial) and tip fees at the drop off sites.
- ❖ Grants from local foundations will fully fund the seasonal Glass Recycling events in Dayton/Waitsburg.

FUTURE PLANS – LOOKING FORWARD & BUILDING OUT



- ❖ Economies of scale are key for sustainability
- ❖ Future plans include building a 5-acre aggregation site at the Port of Pasco w/ rail access and the ability to store 1,000+ tons of glass (one truck of glass is around 20 tons; one rail car is 90+ tons)
- ❖ Need residential glass to be able to meet threshold volumes
- ❖ Regional collaboration between municipalities could help offset the financial costs, collect more glass, and build out more regional hub and spokes

GLASS RECYCLING IN THE GREATER EASTERN WA REGION

BIG RECYCLERS CAN HELP COMMUNITIES BUILD OUT HUB AND SPOKE MODELS WHEREVER INTEREST SUPPORTS THE NEED. HOWEVER, IT WILL BE UP TO THE COMMUNITY TO:

- ❖ Garner interest through business/residential questionnaires and other means;
- ❖ Find suitable hub and spoke locations;
- ❖ Fulfill applicable City, County, and State permits;
- ❖ Build a financially sustainable annual budget through memberships, grants, donations, and sponsorships, and;
- ❖ Build working collaborative relationships with local, regional, and state businesses, agencies, community groups, and grassroots organizations.

THANK YOU TO THE 2024 SPONSORS & PARTNERS



LONG SHADOWS



SMOKY ROSE
CELLARS

NORTHSTAR

KONTO'S
CELLARS



FOLEY FAMILY WINES
Real Vineyards. Real Wineries. Real Wines.



CANVASBACK



L'Ecole
No. 41
WALLA WALLA VALLEY 40

MENTORS & COLLABORATORS



FOLEY FAMILY WINES
Real Vineyards. Real Wineries. Real Wines.



RED MOUNTAIN
AVA ALLIANCE



BASIN
disposal



TOGETHER, WE WILL MAKE A DIFFERENCE



Scott DeFife

President
Glass Packaging Institute
sdefife@gpi.org



Chris Lueck

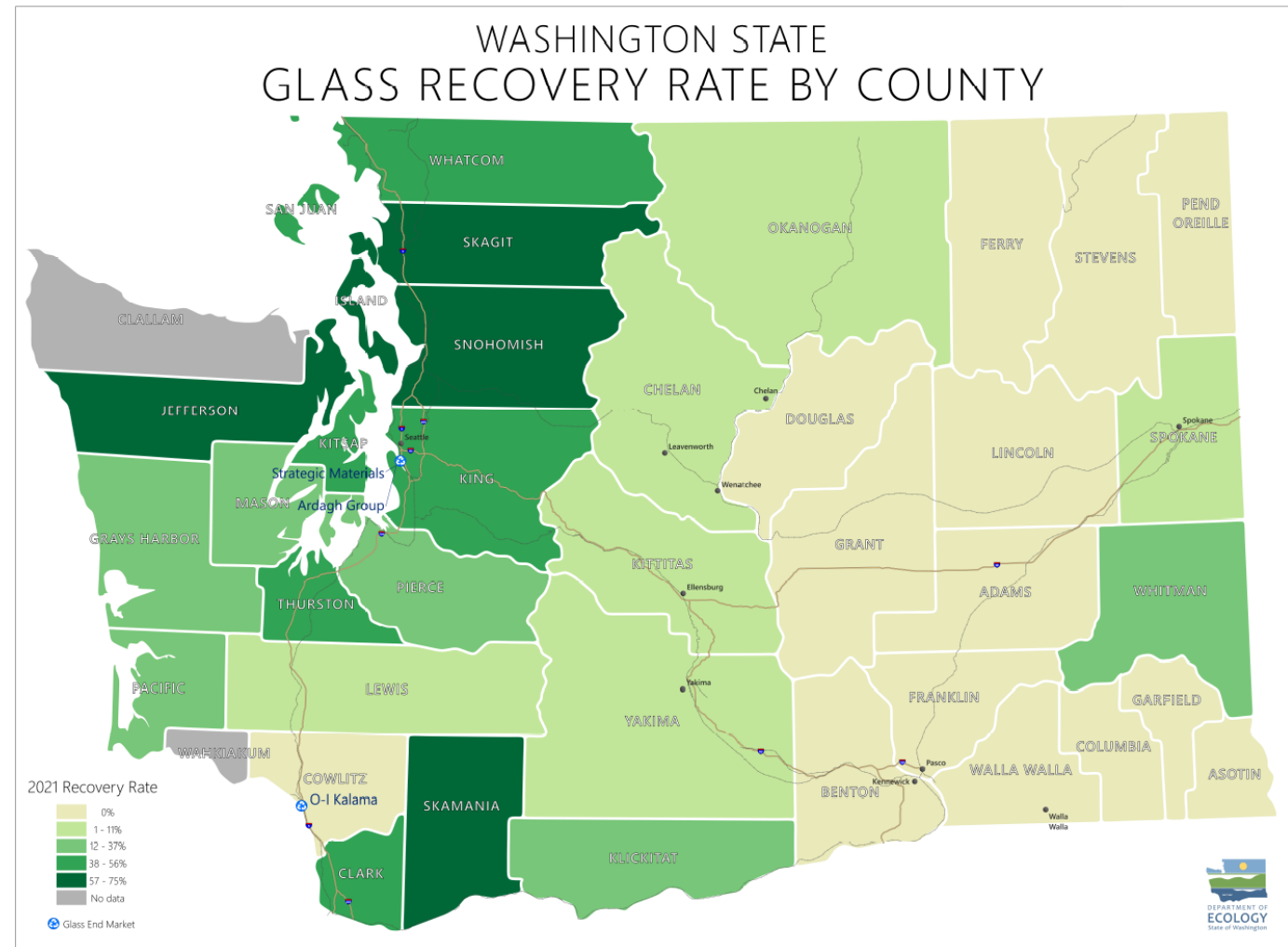
Chairman
B.I.G. Recyclers
vtwineguy@gmail.com



THANK YOU



The circular economy of glass in Washington State





That's a wrap & thank you for coming!

- Thank you to JJ, Matt, Adam, Chris, and Scott!
- Thanks to all of you for attending.
- We have a **post meeting Zoom poll** that Caleb is going to launch, we would appreciate you filling it out. We want to hear how it went for you.
- The slide deck & links will be posted to the RMDC's advisory board page next Monday 5/6/2024.
- Take care and have a great rest of your day.

Cheers!