

Recycling Steering Committee Meeting

Friday, January 17, 2020



Recycling Steering Committee

Modernizing Oregon's recycling system with support from Oregon Consensus

Infrastructure research update

Brian Stafki (DEQ)

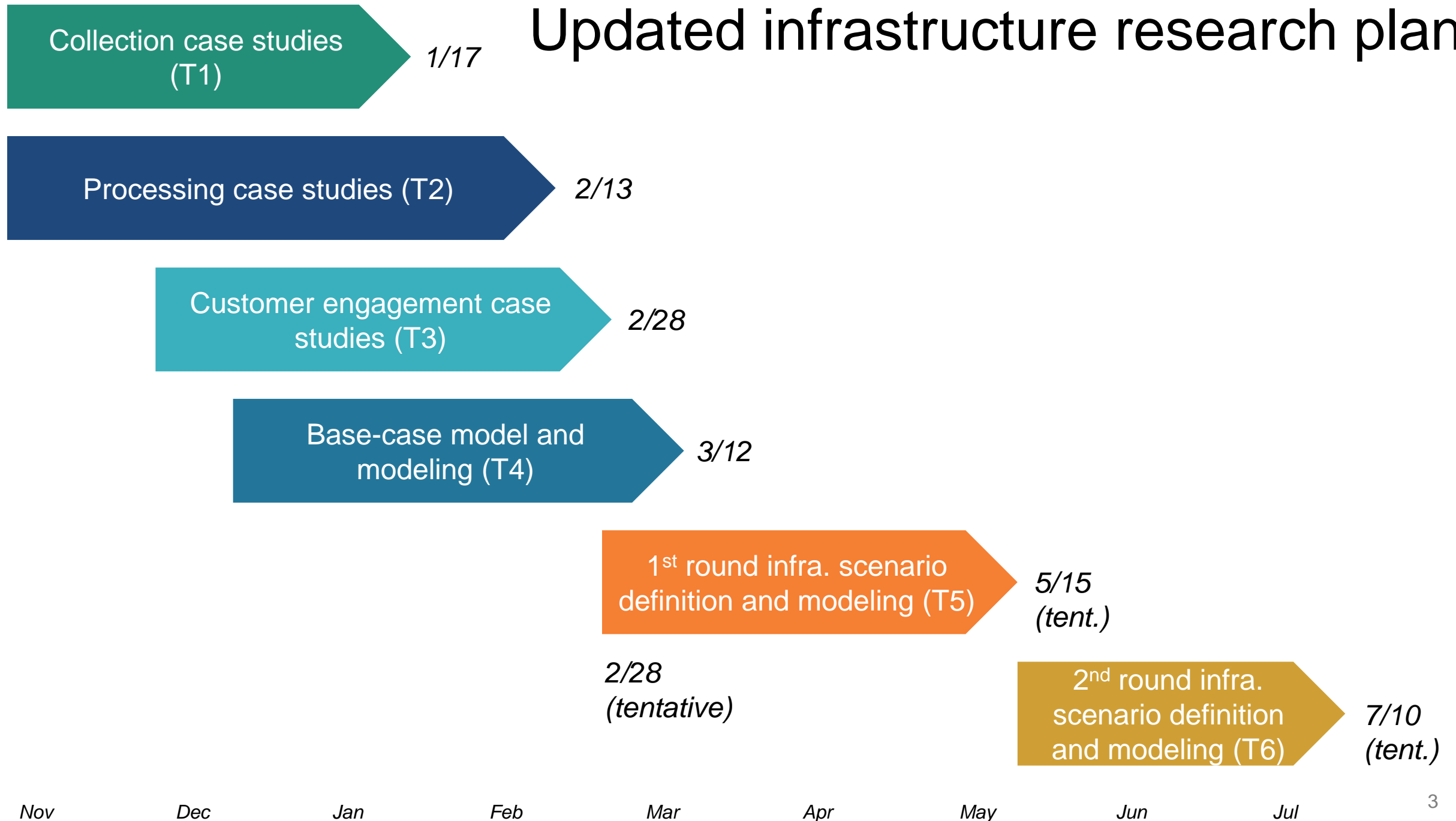
Infrastructure Research Subcommittee chair



Recycling Steering Committee

Modernizing Oregon's recycling system with support from Oregon Consensus

Updated infrastructure research plan



Infrastructure Research

Jessica Branom-Zwick
Senior Associate



Collection Research

January 17, 2020

Cascadia Consulting Group
Bell & Associates



Collection System Research Limitation and Considerations

- Every collection franchise / system will require additional research – operations, effectiveness and costs to determine what is the best collection method
- Research was meant to determine if these alternative methods are worthy of additional consideration
- Researched systems are snapshots in time



On-Route Collection

Dual Cart System

One roll cart for fiber / paper and the other roll cart for metal, glass, and plastics



Split-Cart / Split-Body Collection System

Roll cart with two compartments – one for fiber and the other for containers collected in a split body refuse truck



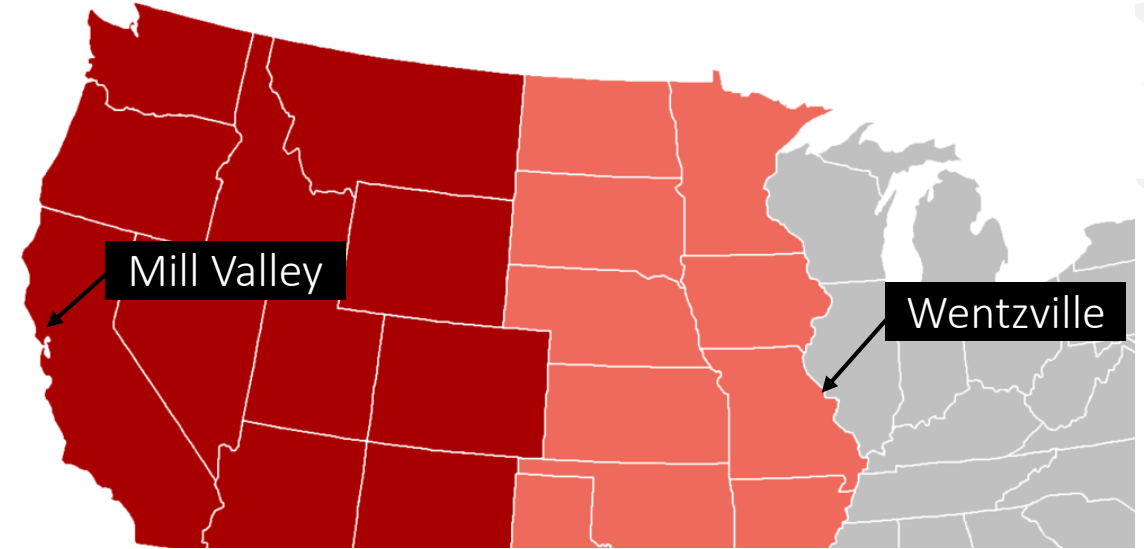
Commingled with Glass Separate

Commingled materials collected in one roll cart with glass collected separately



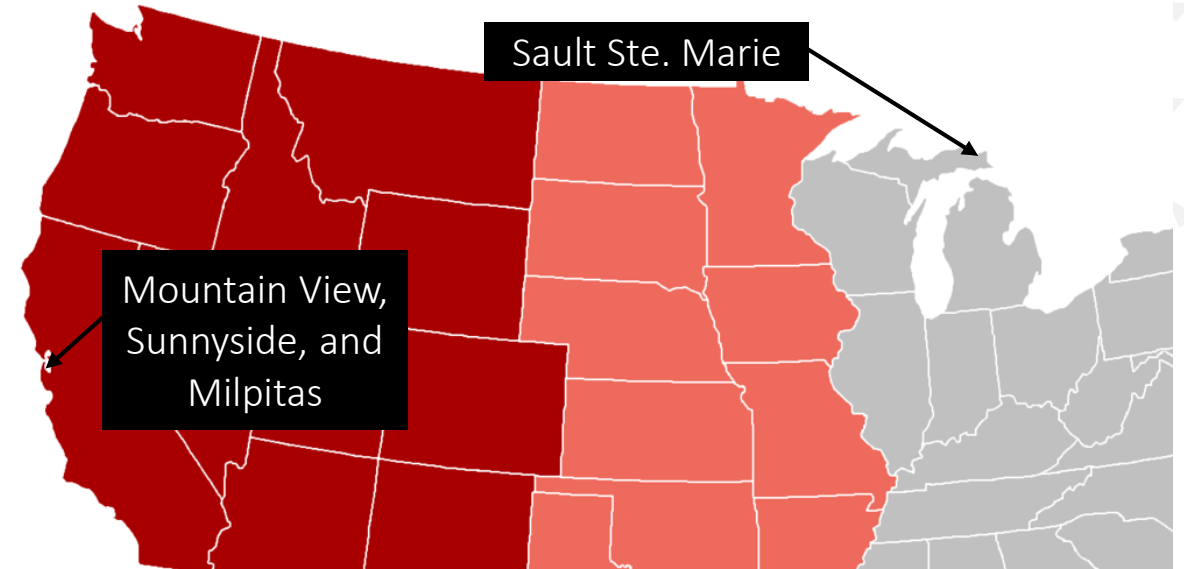
Dual-Cart Systems

- Changes in the recycling markets compelled both jurisdictions to change from commingling to dual stream recycling.
- Customers were provided a second cart to segregate fiber from rigid containers. Weekly collection was provided; however, the customers would set out only one of the carts.
- Mill Valley
 - Allowed the hauler to maintain a comparable level of service without increasing the collection rates.
 - Reduced the cost paid to process recyclables (\$40 per ton) / Savings from processing paid for the second cart
- Wentzville
 - Residents have EOW cart collection of rigid containers (metal and plastic). Glass collected at drop-off sites only. Fiber options are:
 - Drop off for free at the local recycling depots or pay additional \$2.50 per month for EOW fiber collection in second cart.



Split-Cart / Split-Body Collection Systems

- Mountain View, Sunnyside, and Sault Ste. Marie all migrated from a 3 bin system to the split cart / spit body system.
- Collection provided by contracted haulers:
- Mountain View EOW in 96-gallon split cart
- Sunnyvale / Sault Ste. weekly in 64-gallon split cart
- Milpitas is the only city that converted from single-stream to dual-stream. The other jurisdictions converted from 3-bin recycle bins to the split-cart system.



Split-Cart / Split-Body Collection System

- Split-Cart System Cost
 - Cart costs range from \$83 to \$88 each
 - Split-body collection truck costs \$16,000 to \$25,000 more than single-body
 - The additional cost per customer per month for the equipment ranges from \$0.41 to \$0.45
- Potential Issues with Split-Cart System
 - Limited cart capacity for OCC, which requires drivers to manually collect material (10% to 20% in Mountain View)
 - Rain-soaked OCC when collected on the side
 - Reduced collection productivity due to manual cardboard collection and truck capacity
 - Reduced fleet flexibility because collection truck may not be compatible with other collection operations due to hopper configuration (see next slide).



Split-Cart / Split-Body Collection System



Summary of Additional Costs of Dual-Stream

Additional Cost	Weekly Two-Cart Dual-Stream vs. Weekly Single- Stream	Weekly Split-Cart vs. Weekly Single- Stream	Weekly Split-Cart vs. Weekly Two- Cart Dual-stream
Truck Capital Cost	\$0.00	\$0.07 to \$0.11	\$0.07 to \$0.11
Cart Capital Cost	\$0.65	\$0.99	\$0.34
Total	\$0.65	\$1.06 to \$1.10	\$0.41 to \$0.45

- Weekly two-cart dual-stream mean two carts, each collected on alternating weeks.
- Productivity is assumed to be equal for the all three of these scenarios
- For collection systems collecting single-stream recycling every other week, there would be an additional operational cost of \$4 to \$5 per customer.

Independent Studies to Compare Processing Systems

An Assessment of Single and Dual Stream Recycling in Ontario, HDR 2013

Single-stream collection generates higher volumes and participation with increased contamination

Assessment of the Impact of Single Stream Recycling on Paper Contamination in Recovery Facilities and Paper Mills, Duygu Yasar, 2017

- The difference between single stream recycling and dual stream recycling inbound contamination rates was found to be statistically significant

A Comparison of Single and Multi-Stream Recycling Systems in Ontario, Calvin Lakhan, 2015

- Commodities recovered from single-stream programs are of lower quality than those recovered from multi-stream systems

Conversion from Dual Stream to Single Stream Recycling Results in Nuanced Effects on Revenues and Waste Stream Amounts and Composition, David Tonjes, 2018

- The study found that while recycling set-out quantities increased significantly, the change was largely due to non-recyclable materials

Advantages and Disadvantages of a Dual-Stream System

Advantages

- Greater potential for quality control during collection
- Potential for less contamination by unsolicited materials
- Lower MRF capital and operating costs
- Potential for lower net recycling system costs on a per household and per ton marketed basis
- Potential for higher material market revenues through marketing of higher quality material and/or more effective material recovery during processing
- Higher glass recovery rates
- Potential for lower percentage of processing residue and reduced residue disposal costs

Disadvantages

- Potential for lower program participation / May be regarded as less convenient to customers
- Some potential to collect less materials (e.g. lbs./household) resulting in lower rates of diversion from disposal
- Potential for lower collection efficiency and higher collection costs as multi-compartment collection can reduce vehicle payload optimization compared to automated collection
- Potential for higher worker injury and compensation costs for manual collection of large cardboard set-outs
- More difficult to structure the collection system to allow for co-collection with other material streams

Include two-cart dual-stream as one alternative scenario.

- Dual-stream collection has the potential to reduce contamination collected at the curb.
- Additional collection cost could be offset by the reduced cost of processing.
- Collection would be weekly, but each stream would be collected every-other-week. A dual stream truck (pictured to the left) would allow glass to be collected weekly.
- Additional education and advanced processing systems, researched in other tasks, also have the potential to reduce or remove contamination to create clean commodities.



Research
Recommendation

Infrastructure scenario development and evaluation update



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Updated infrastructure research scope

Initial scenario definitions and modeling (T5)

- Define up to 4 scenario performance parameters

Secondary scenario definitions and modeling (T6)

- Define 2 new scenarios with results for further evaluation
- Model will document assumptions and sources (no final memo or report)



What's in a Scenario Definition?

- ▶ **Accepted materials — curbside and depots**
- ▶ Customer engagement approaches (education, compliance, incentives)
- ▶ Collection methods (containers, frequency, dual/single, access)
- ▶ Transfer methods between collection and sortation
- ▶ Sortation system (including geographic configuration)
- ▶ **Marketed materials**
 - **Type and quality of marketed materials**
- ▶ Likely location of end-markets

Evaluation Criteria

Modeling Inputs/Assumptions

- ▶ Quality of materials to reach markets and market prices
- ▶ Access to recycling opportunities
- ▶ Meets the needs of different generators (also qualitative output)
- ▶ Resiliency/adaptability

Quantitative Analysis

- ▶ Quantity of materials to reach markets
- ▶ Transactional costs
- ▶ Environmental outcomes and social costs of those outcomes
- ▶ Employment

Narrative Discussion

- ▶ Potential for stranded assets
- ▶ Worker safety/working conditions

Cost and Material Flow Modeling

- ▶ **Customer engagement methods** to increase quantities of recyclables and reduce contamination, such as education, incentives, and compliance programs.
- ▶ **Collection** methods for single-family residential pick-up, multifamily pick-up, commercial pick-up, and drop-off.
- ▶ **Consolidation and transport** including transfer between collection and sortation.
- ▶ **Sortation** methods such as various types and arrangements of MRFs, PRFs, and CRFs.
- ▶ **Marketing** including transport costs to ports or domestic mills and market price for first sale post-sortation.

Infrastructure scenario elements



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Infrastructure scenario element categories

- Variations (by types of geographies/groupings and different types of generators — e.g. single-family, multifamily, non-residential)
- Materials accepted (curbside and depots)
- Customer engagement
- Collection methods
- Processing methods
- Markets



Next steps



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Next infrastructure research steps

February 13 (*Infrastructure Research Subcommittee meeting*)

- Review results of processing case studies (T2)

February 28

- Review results of customer engagement case studies (T3)
- Review, adjust and confirm initial infrastructure scenario definitions (T5)

March 12 (*Infrastructure Research Subcommittee meeting*)

- Review base-case modeling (T4)



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Next infrastructure research steps (cont.)

May 15

- Review results of initial infrastructure scenario modeling (T5)
- Draft and confirm secondary infrastructure scenario modeling (T6)

Mid July *(to be scheduled)*

- Review results revised scenarios from initial modeling from T5
- Review results of secondary modeling (T6)
- Determine next steps for infrastructure



Getting a conversation started about equity in the recycling system

Sanne Stienstra (DEQ)

Stakeholder Engagement Subcommittee co-chair



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My role today



- Provide resources
- Guide discussion
- Provide space for conversation and inquiry



- Represent any identity or group that is not mine
- Answer all your questions



A note on “leading with race”

“Focusing on racial equity provides the opportunity to introduce a framework, tools and resources that can also be applied to other areas of marginalization.”

From the Local and Regional Government Alliance on Race & Equity



Principles to keep in mind for discussion

1. There is a difference between agreement and understanding.
When discussing complex social and institutional dynamics such as racism, consider whether “I don’t agree” may actually mean “I don’t understand.”
2. We don’t have to be aware of racism in order for it to exist.
3. Our racial position (whether we identify as white, a person of color, or multiracial) will greatly affect our ability to see racism.
For example, if we swim against the “current” of racial privilege, it’s often easier to recognize, while it’s harder to recognize if we swim with the current.
4. Racism goes beyond individual intentions to collective group patterns.

From Robin DiAngelo



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Justice, Equity, Diversity, Inclusion

Article for discussion: <https://theavarnagroup.com/wp-content/uploads/2019/05/New-vocab-and-equity-equality-justice-image.pdf>

Diversity: the differences between us based on which we experience systemic advantages or encounter systemic barriers to opportunities.

Inclusion: fostering a sense of belonging by centering, valuing, & amplifying the voices, perspectives & styles of those who experience more barriers based on their identities.

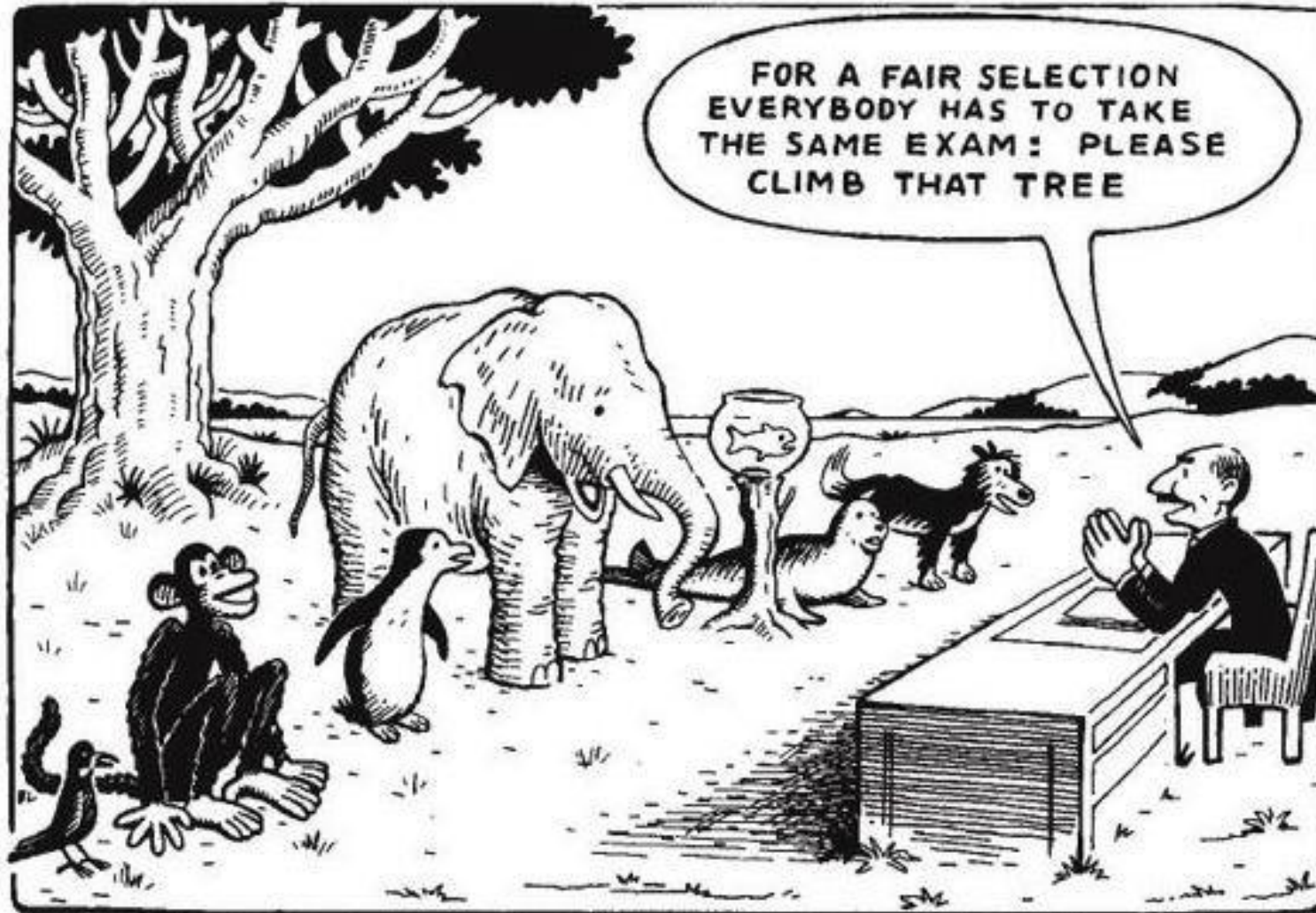
Equity: allocating resources to ensure everyone has access to the same resources & opportunities. Equity recognizes that advantages and barriers—the ‘isms’—exist. Equity is the approach & equality is the outcome.

Justice: is about dismantling barriers to resources and opportunities in society so that all individuals & communities can live a full & dignified life. These barriers are essentially the “isms” in society: racism, classism, sexism, etc.



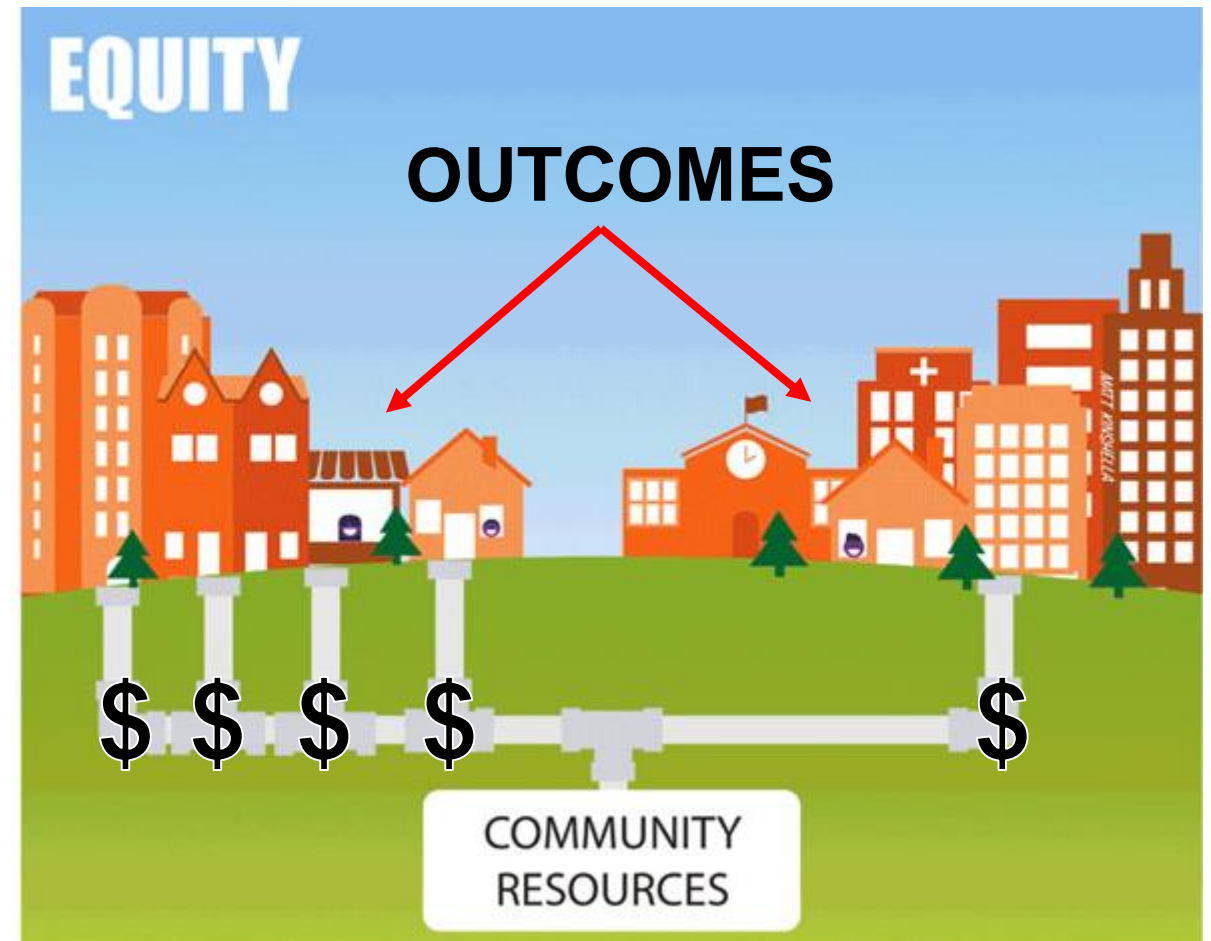
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From Matt Kinshella



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Discussion

Did anything in the homework leave an impression on you?

What do you have more questions about, or what would you like to explore further?

Where do you see possibilities to meet the desired function of equity on this project?

How do you see the RSC's role in advancing equity?



AOR Racial Equity Training

Leading with a Racial Equity Lens for Structural Transformation

Presented by Scott Winn

February 5, 2020, 2:00-5:30 p.m.

World Trade Center Portland

121 SW Salmon St, Portland, OR 97204



Price: \$45

<https://oregonrecyclers.wufoo.com/forms/z1t5ihix1548maw/>



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Stakeholder Engagement Update

Amy Roth, AOR

Sanne Stienstra, DEQ

Stakeholder Engagement Subcommittee co-chairs



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Info Session Participation

- Attendance:
 - In person: Sold out (84 capacity)
 - Webinar: 70 registrations
- Collectors, processors, legislators/legislative staff, producers, environmental orgs, state and local government staff, other states
- Follow up to non-RSVPs next week



Underrepresented Stakeholder Listening Sessions

- Purpose: To incorporate views of recycling system stakeholders who are underrepresented
 - Such as: Stakeholders who have historically lacked access to recycling and workforce interests
- Led by Stakeholder Engagement Subcommittee
- Hired consultant: Libby Barg Bakke, Barney & Worth



Credit: simonkr via Getty Images



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Underrepresented Stakeholder Listening Sessions

- **Phase I & II:** System users with access barriers (Jan-Mar)
 - First workshop: Trash for Peace (January 21)
 - Additional workshops:
 - Community recycling educators – Portland (date TBD)
 - Medford (February 18 at ACCESS office)
 - La Grande (date and location TBD)
- **Phase III:** Workforce interests (Apr-May)
 - TBD



Credit: Master Recycler Program




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Post-Info Session Survey

- Pre-testing with Stakeholder Engagement Subcommittee and DEQ staff complete
 - First round of revisions in progress
- Share with RSC on 1/23
 - Feedback due by Monday, 1/27 at 8 a.m.

**Recycling Steering Committee**
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Welcome to the Recycling Steering Committee's recycling frameworks survey!

The goal of this survey is to gather stakeholder feedback in order to inform committee deliberations later this spring.

Broken down into three sections, this survey will establish a baseline understanding of the current recycling system in Oregon, and also gather stakeholder input regarding the different possible frameworks for Oregon that were introduced during the January 31st info-session. This survey will take approximately 15 minutes to complete.

Below are links which provide additional information:

- [Key Functions of Future System](#)
- [RRS Research Memo](#)
- [DEQ Fact Sheet](#)

Thank you for taking the time complete this survey, your input is important for the effort to modernize Oregon's recycling system.

Participation in this survey is voluntary, and respondents may withdraw at any time.

Next →



Legal and Relational Frameworks Update

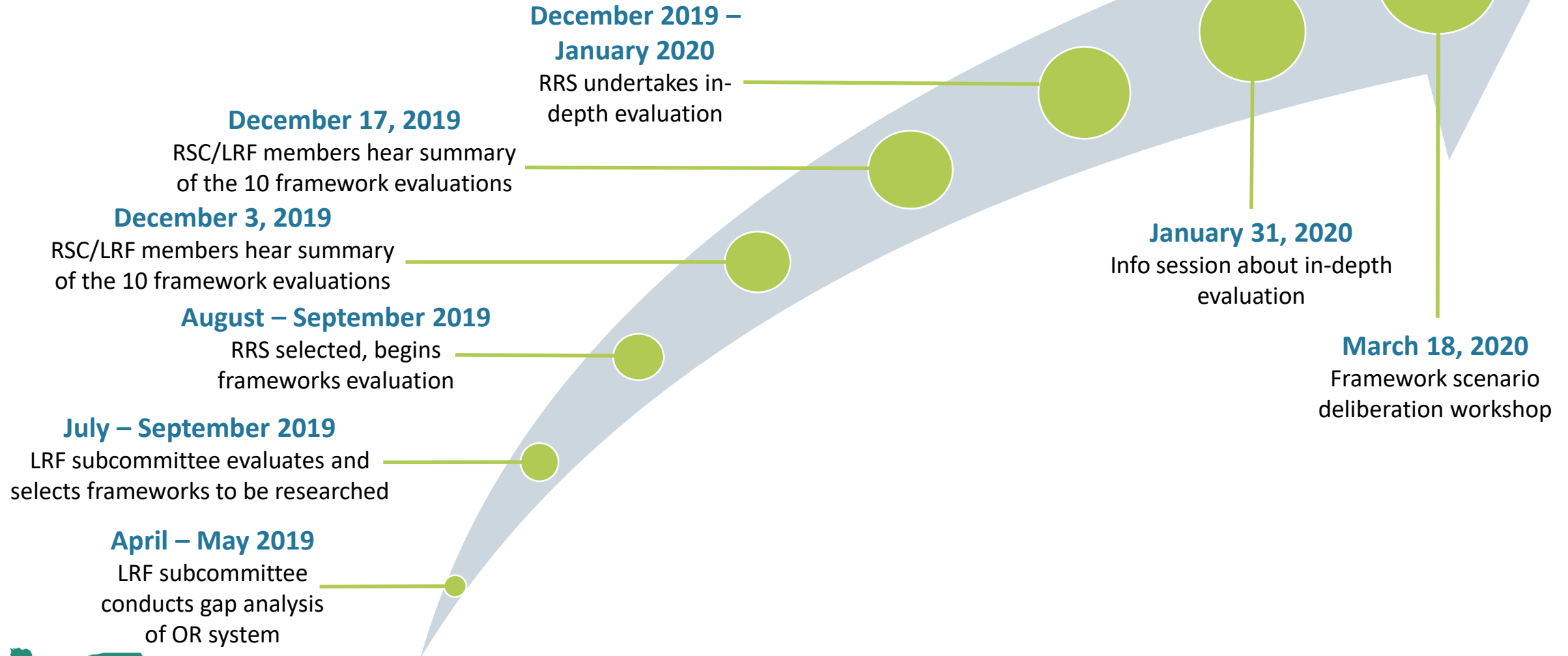
January 31st Info Session



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Where We've Come So Far...



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Packet of Materials

- Agenda
- Desired functions for Oregon's future recycling system
- Fact sheet with history of project
- RSC charter (summary)
- Baseline Oregon profile summary
- Key concepts relevant to this project, such as design for environment, eco-modulated fees, franchise agreement, generator fee, etc.
- RRS's in-depth evaluation report of the five scenarios
- Infographic showing differences between the five scenarios in relation to:
 - Who sets the acceptable materials list within each scenario
 - Who's in charge of funding within each scenario
 - Who has operational control and responsibility with respect to collection and processing
 - Who's responsible for ensuring or developing markets
- Worksheet summary of the scenarios



Layout of RRS Presentation

- Government oversight overview
- Concept of EPR – producer oversight
- How the common elements play into the scenarios
- Infographic of all five scenarios
- Present on scenarios in following order:
 - (formerly scenario 1) Enhanced government managed (with the following layout of each scenario)
 - Scenario summary
 - Roles and responsibilities
 - Use of circular diagram
 - Benefits and shortcomings
 - How the scenario meets the functions
 - (2) State government managed (MRF contracts)
 - (5) Full producer responsibility with optional local involvement
 - (4) Producer responsibility with local control
 - (3) Post-collection producer responsibility



Questions?



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