

Bay Area Deconstruction Workgroup (BADWG)

September 25, 2024

Reuse
Infrastructure



Bay Area (& Beyond) Deconstruction Workgroup

- **Started by learning about Portland's Mandatory Deconstruction Ordinance (2017)**
- **Workgroup**
 - **Focus: San Francisco Bay Area Reuse – Fall/Winter 2024**
 - Hybrid – Bay Area, national & international participation
- **Website & Contact Us:**
<https://www.stopwaste.org/BADWG>



Agenda – BADWG Reuse Infrastructure

10:00-10:10 – Welcome – John Katz, Manager, Zero Waste Section, EPA Region 9

10:10-10:25 – Presentations

- **Maybo AuYeung**, Environmental Program Manager, Zero Waste Palo Alto
- **James Slattery**, C&D Zero Waste Senior Coordinator, San Francisco Environment Department

10:25-11:20 – Panel Discussion

- **Andrew Ellsworth**, Founder & CEO, Doors Unhinged
- **Kinley Deller**, Construction & Demolition Program Coordinator, King County Solid Waste Division
- **Michael Chambers**, The Reuse People
- **Jeff Ravenscraft**, Madrone

11:20-11:30 – Break

11:30-11:50 – Facilitated Sharing and Discussion

11:50-12:00 – U.S. EPA Updates

- **Timonie Hood**, Zero Waste & Green Building Coordinator, EPA Region 9
- **Miya Kitahara**, Program Manager, StopWaste





2018 Zero Waste Goal & Plan Initiatives

- 95% diversion from landfill by 2030
- ✓ Short term:
 - ✓ 1. Require Deconstruction and Source Separation of Construction Materials
 - ✓ 2. Direct Mixed Construction Materials to High Diversion Construction Materials Recycling Facilities
 - ✓ 4. Construction Project Recycling Technical Assistance
- Long term:
 - 40. Building Materials Reuse Center




Ordinance Adopted with Council Support

Effective July 1, 2020

Building permit applications submitted on or after this date will be subject to these new requirements.


- Applicable to both Residential and Commercial
- ~~Demolishing entire buildings and combining materials for disposal~~
- Deconstruction is required at complete tear down, whole structure removal

		Salvage Survey				
		(Only one survey for each main building and detached garage and/or shed)				
		1234 Main St, Palo Alto, CA 94301				
		Complete Project Address (street, city, state, zip)				
		Owner's Information				
Person Surveying the Project		Name	Jane Doe			
Date	4/23/2019	Email	xxx@email.com			
Name	John Smith	Telephone	(650) 555-5555			
Company	TRP	Mailing Address	1234 Main St. Palo Alto, CA 94301			
Telephone	(510) 383-1983					
Building Contractor's Information		Company Name	N/A			
Contact	N/A	Email	N/A	Telephone	N/A	
Brief Description and Condition of the Building						
This house has been lived in and well maintained by the owner and while many of the fixtures are original and in fair plus condition, the appliances are newer. Much of the value in this project is the lumber - some of which is old growth.						
General information on the House and Project						
House & Garage	Age or Dates & Square Feet		Foundation		Deconstruction	
	Year Built	1954	Type	Check Which	Type	Check Which
	Year Remodeled		Raised (crawl)	<input checked="" type="checkbox"/>	Full	<input checked="" type="checkbox"/>
	Stories	1	Basement		Partial	
	Square Feet of House	1118	Slab		Interior Gut	
	Garage Included (Y/N)					
Sq. Ft. of Garage						
Sq. Ft. Footprint (both)						
Exterior						
Framing	Type	Dimension	Length (est.)	Species/description		
	Studs	2x4	8'	Douglas Fir		
	Rafters	4x12	15'	Douglas Fir		
	2nd floor ceiling joists					
	1st floor ceiling joists					
1st floor joists	2x6	12	Douglas Fir			
Notes						
Siding	Wood	Dimension	Species/description			
	Straight lap					
	Ship lap					
	T&G					
	Board & Batten					
Tear drop						
T-111						
Other siding (describe)	stucco and not salvageable					
Roofing	Type (ck all that apply)	Concrete	Clay	Flat	S-shape	C-shape
	Tile					
	Other					
	Slate					
	Composition or Built-up	<input checked="" type="checkbox"/>				
	Shake					
Other - describe						
Roof sheathing	Plywood or Board	Board	Dimension	2x6 t&g		
Notes	Salvage sheathing					









The ReUse People of America, Inc.

"Reducing the solid waste stream and changing the way the built environment is renewed by salvaging building materials and distributing them for re-use."

9255 San Leandro St, Oakland, CA 94605 • Tel: 510-585-1985 • Fax: 510-585-1865 • www.TheReusePeople.org

A 501(c)(3) Nonprofit Corporation • EIN: 33-0852796

Copyright The ReUse People of America, Inc. 2015 - All Rights Reserved

Inventory of Donated Material

All materials were in the same condition at the time of inspection as at the time of donation.

Project Address: 1234 Main Street, Palo Alto, CA 94301

Donation Date: 9/25/19

Inventoried by: John Doe #BN-19-0000

Contractor: ABC Enterprise Inc.

Appraiser: Mike Appraiser

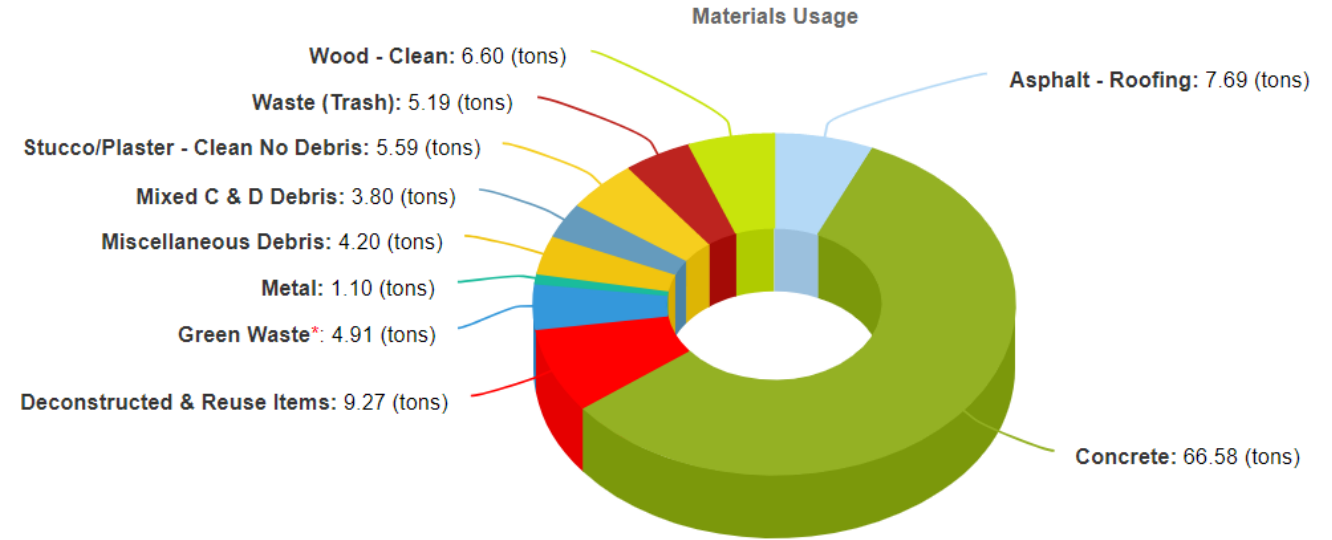
Homeowner: Jane Doe

INFORMATION NEEDED ON OFFICIAL LETTERHEAD FROM REUSE ORGANIZATION TO MEET COMPLIANCE:

Project address, Contractor, Homeowner, Donation date, Person received items, Itemized list of donated items, Weight of donated items

INVENTORY OF SALVAGED FIXTURES

Date Shipped	Item #	Location	Item	Dimensions	Disposition
9/3/19	1	Entry Way	Entry door, wood, hollow core, flush	36in x 80in	TRP
9/3/19	2	Entry Way	Pendant light, round, glass	N/A	TRP
9/3/19	3	Kitchen	Upper cabinet, wood, face frame, 1 door		TRP
9/3/19	4	Kitchen	Upper cabinet, wood, face frame, 2 door		TRP
9/3/19	5	Kitchen	Upper cabinet, wood, face frame, 2 door		TRP
9/3/19	6	Kitchen	Upper cabinet, wood, face frame, 2 door	36in x 30in x 12in	TRP
9/3/19	7	Kitchen	Upper cabinet, wood, face frame, 1 door	12in x 30in x 12in	TRP
9/3/19	8	Kitchen	Upper cabinet, wood, face frame, 2 door	36in x 30in x 12in	TRP
9/3/19	9	Kitchen	Lower cabinet, wood, 2 door/1 drawer	30in x 24in x 35in	TRP
9/3/19	10	Kitchen	Lower cabinet, wood, 2 door/1 drawer	30in x 24in x 35in	TRP
9/3/19	11	Kitchen	Lower cabinet, wood, 2 door/2 drawer	36in x 24in x 35in	TRP



3. Zanker Road Landfill 705 Los Esteros Rd., San Jose, CA 95134 (map)

Tickets entered for this facility: 9	Tons taken to this facility: 24.79
Materials taken to this facility: 4	Tons recycled at this facility: 14.13

Material	Submitted By	Ticket	Weight	Recovery %	Recycled	Applied %	Date	View	E
1. Wood - Clean	JESSICA G GOVEA	10593192	1.51	100	1.51	100	04/16/22	View	E
2. Stucco/Plaster - Clean No Debris	JESSICA G GOVEA	10593366	5.59	99	5.53	100	04/18/22	View	E
3. Wood - Clean	JESSICA G GOVEA	10594141	1.71	100	1.71	100	04/20/22	View	E
4. Wood - Clean	JESSICA G GOVEA	10594260	1.59	100	1.59	100	04/20/22	View	E
5. Wood - Clean	JESSICA G GOVEA	10592858	1.79	100	1.79	100	04/15/22	View	E
6. Green Waste*	JESSICA G GOVEA	10591796	1.83	N/A	N/A	100	04/12/22	View	E
7. Green Waste*	JESSICA G GOVEA	10591797	3.08	N/A	N/A	100	04/12/22	View	E
8. Asphalt - Roofing	JESSICA G GOVEA	10593078	3.50	26	0.91	100	04/15/22	View	E
9. Asphalt - Roofing	JESSICA G GOVEA	10593148	4.19	26	1.09	100	04/15/22	View	E

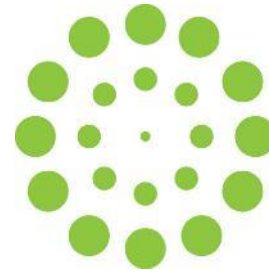
Salvage for Reuse vs Reuse in Procurement







CITY OF
PALO ALTO



zero
WASTE
PALO ALTO

MAYBO AUYEUNG

Environmental Program Manager

Maybo.AuYeung@CityofPaloAlto.org

Deconstruction@CityofPaloAlto.org

650.496.5910

www.cityofpaloalto.org/deconstruction



SF Environment: Deconstruction + Reuse Policy and Implementation Plan

James Slattery
C&D Zero Waste Sr. Coordinator
September 25, 2024

SAN FRANCISCO
ENVIRONMENT
DEPARTMENT

SF CAP 2021: Responsible production & consumption

RPC 1-4

By 2025

Require deconstruction of buildings and increase the source separation of specific materials

RPC 1-5

By 2025

Engage with designers, landlords, and lessees to develop guidelines for tenant improvement projects that reduce excess material purchases and support reuse distribution channels.

RPC 1-6

By 2025

Create a policy framework for regional building material reuse markets that support workforce development, small business enterprises, and entrepreneurial innovation

See all climate action strategies: <https://www.sfenvironment.org/climateplan>

Deconstruction + Reuse



Image: Humanim, Social Enterprise Division

By 2025, San Francisco will require building deconstruction and mandatory minimum reuse requirements

Three-Stage Policy Framework



1. Deconstruction Surveys



2. Diversion to Reuse Outcomes



3. Set Procurement Thresholds



Unlocking Interventions:

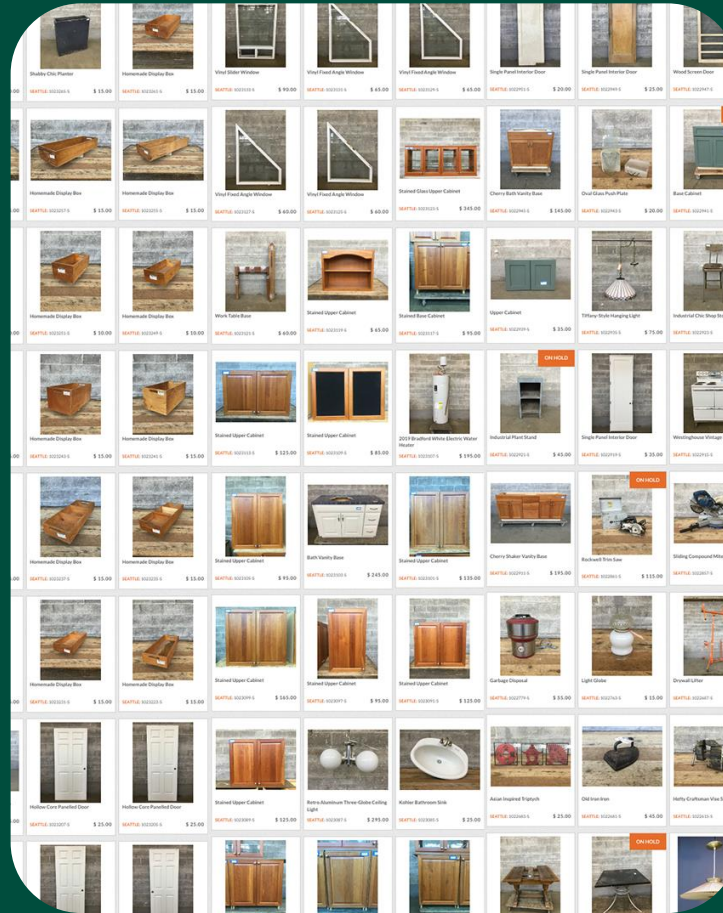
- Physical storage space
- Qualified surveyors and reuse facilities
- Transport and logistics
- Network for reintegration and chain-of-custody
- Tools and equipment
- Incentives for voluntary shifts

Bolstering infrastructure to support policy & programs



Image: Madrone

NETWORK: SUPPLIERS & RECEIVERS



VIRTUAL ASSET MANAGEMENT



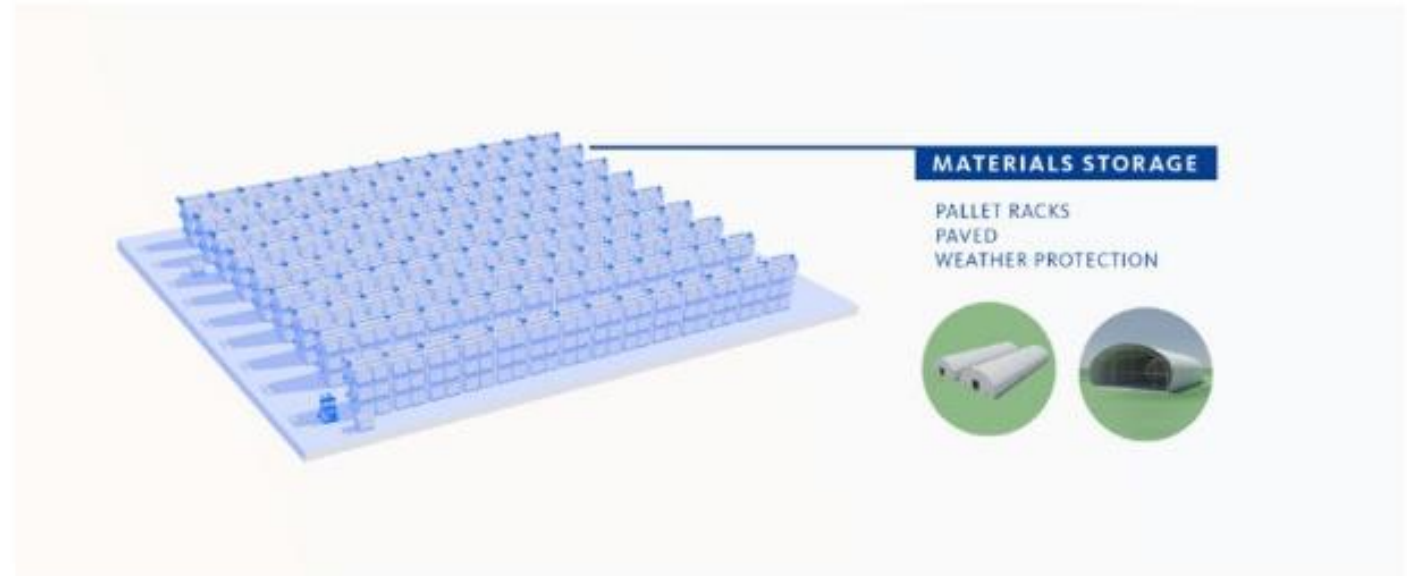
Image: Hilda Weges

PHYSICAL 'LAYDOWN' SPACE

Building Resources Innovation Center (BRiC)

The highly efficient materials storage area is organized around the unit of the pallet and forklift access. All materials should be palletized and stored in a weather protected enclosure. The enclosure would need to be provided with adequate lighting and fire life safety provisions to meet code requirements. Pallets can be stored on pallet racks if height allows.

Total quantities of materials able to be stored on each pallet is indicated in the table below. Based upon the impact analysis in Chapter 2, we are able to convert material quantity per pallet to a number of impact metrics, providing a guide to determine the optimal allocation of the limited material storage space for each material.



TRIPLE BOTTOM: NUMBERS BY PALLET

3000
CARPET
TILES (SF)

20
DOORS

15
KITCHEN
CABINETS

10
BATHROOM
SINKS

10
KITCHEN
SINKS

10
LIGHT
PENDANTS

20
BATHROOM
DOORS

20
BATHROOM
PARTITIONS

160
CEILING
TILES (SF)

Addressing critical infrastructure gaps in commercial sector reuse



Unlocking Interventions:

- Physical storage space
- Qualified surveyors and reuse facilities
- Transport and logistics
- Network for reintegration and chain-of-custody
- Tools and equipment
- Incentives for voluntary shifts



-- LESSON #1 -- START SMALL --

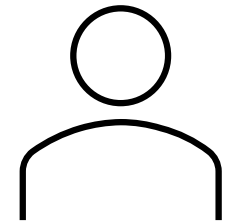
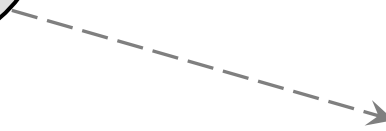
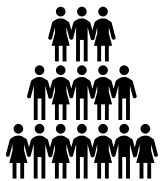
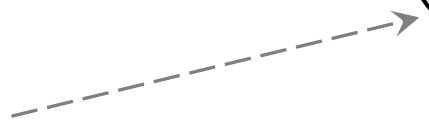
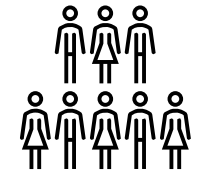
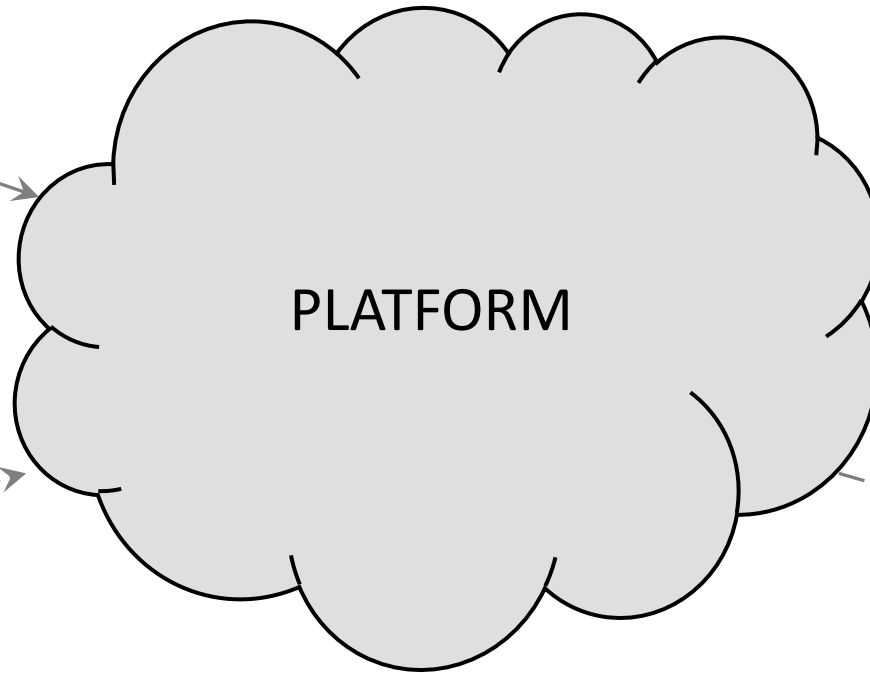
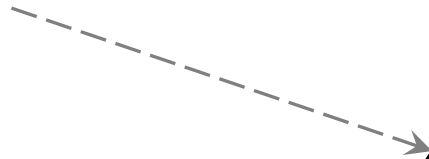


-- LESSON #1 -- START SMALL --



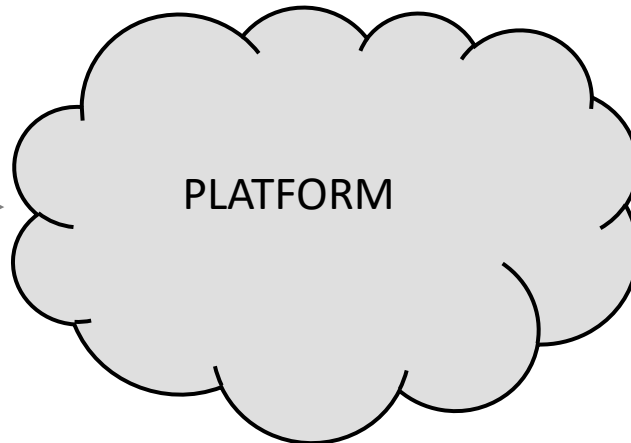
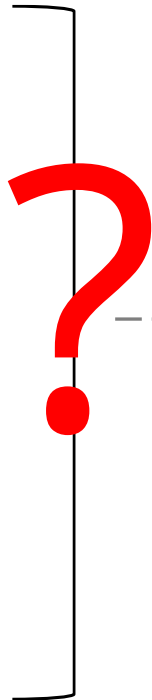
-- LESSON #2 -- THE TRANSACTION --

eBay, Craigslist, Freecycle,
etc.

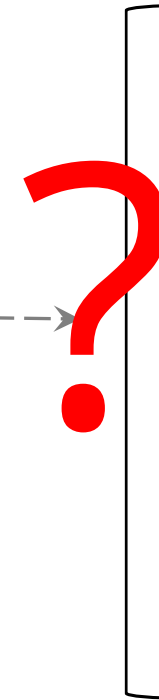


-- LESSON #2 -- THE TRANSACTION --

Owner/Developer
Tenant Architect
Owner's Rep.
General Contractor
Subcontractor
Supplier Manuf.
Rep. Manufacturer



Owner/Developer
Tenant Architect
Owner's Rep.
General Contractor
Subcontractor
Supplier Manuf.
Rep. Manufacturer



**TOO MANY GAPS &
UNANSWERED
QUESTIONS!!!**

- *Who will inventory materials? What exactly are the products? Who will remove, store & transport them? When will they be available? Who must approve materials being deaccessioned? What are they worth?*

- *Do these materials match the specs?*
- *Who approves the purchase? Who will pay for the materials? Where will they be stored? Who will make up any shortfall? Who will warranty them? What if the project changes?*
-

-- LESSON #2 -- THE TRANSACTION --

PROJECT INFORMATION FLOW



Requirements

OPRs
Drawings
Specifications
Clarifications
Contracts
Approvals/
Rejections RFI
Responses
Punchlists
Payments

Owner/Developer

Tenant Owner's

Rep. Architect

General Contractor

Subcontractor

Supplier

Manuf. Rep.

Manufacturer

Realities

Pricing
RFIs
Submittals *Cut*
Sheets
Samples/Mockups
Shop *Drawings*
Pay *Applications*
Warranties *As-*
builts/O&M



-- LESSON #3 -- SERVICE MATTERS --



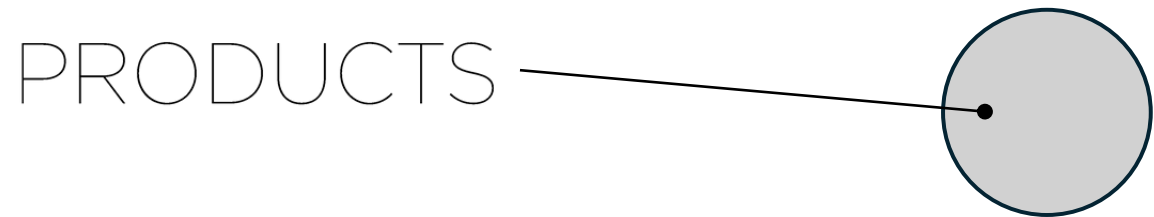
Residential/ Homeowner
Markets are Product-
Driven



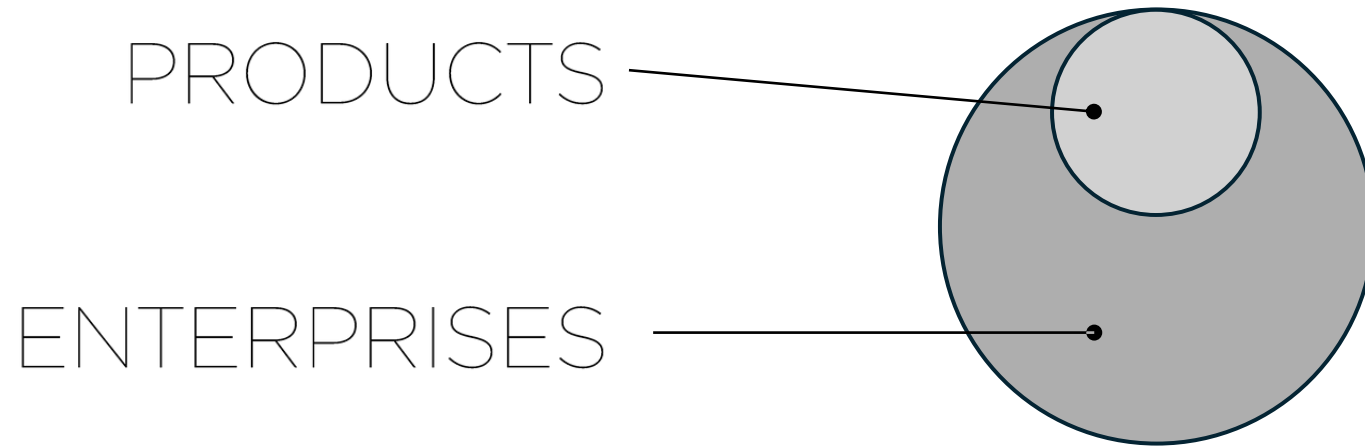
Commercial Markets are
Product- AND Service-
Driven

- Takeoffs*
- Estimates*
- Submittals Shop*
- Drawings*
- Samples As-*
- Built Delivery*
- Installation Field*
- Verification*
- Service Calls*
- Warranties*

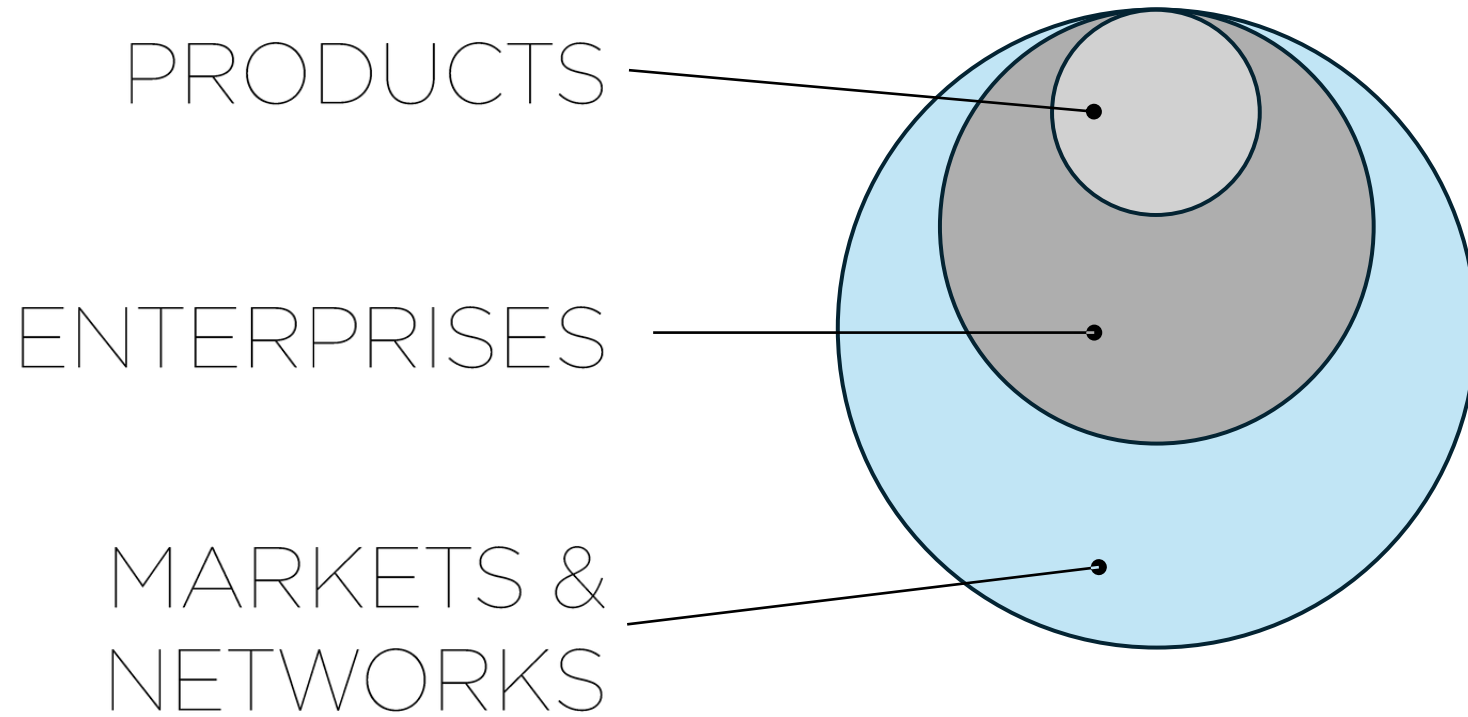
-- LESSON #4 -- SYSTEMS THINKING --



-- LESSON #4 -- SYSTEMS THINKING --



-- LESSON #4 -- SYSTEMS THINKING --



King County, WA

**Facilitating Re-Incorporation of Reclaimed Building Materials
(at scale)**



Separate Locations VS Circular Economy Business Park



or



Investment Opportunity?

<i>Summary Rent Roll</i>				<i>Initial Rent: October 2024</i>			<i>Proforma * Projected Rent: Year 5 3% annual increase</i>		
Tenant Name	BLDG ADDRESS #	BUILDING SF SF	% of Total	Monthly Rent	Monthly Rent/SF	Annual Total	Monthly Rent	Monthly Rent/SF	Annual Total
Company 1		30,000	30%	\$22,500.00	\$0.75	\$270,000	\$25,200	\$0.84	\$302,400
Company 2		5,000	5%	\$3,750.00	\$0.75	\$45,000	\$4,200	\$0.84	\$50,400
Company 3		5,000	5%	\$3,750.00	\$0.75	\$45,000	\$4,200	\$0.84	\$50,400
Company 4		30,000	30%	\$22,500.00	\$0.75	\$270,000	\$25,200	\$0.84	\$302,400
Company 5		20,000	20%	\$15,000.00	\$0.75	\$180,000	\$16,800	\$0.84	\$201,600
KC SWD Small Business Incubator		10,000	10%	\$7,500.00	\$0.75	\$90,000	\$8,400	\$0.84	\$100,800
Total		100,000	100.0%	\$75,000.00		\$900,000	\$84,000.00		\$1,008,000

Property Cost	Monthly Payment
\$10,000,000	\$64,000

Options for Moving Forward (w/ grant award)

Option 1: Utilize KC owned property, utilize grant for TI's, and lease to partners (CIP budget project)

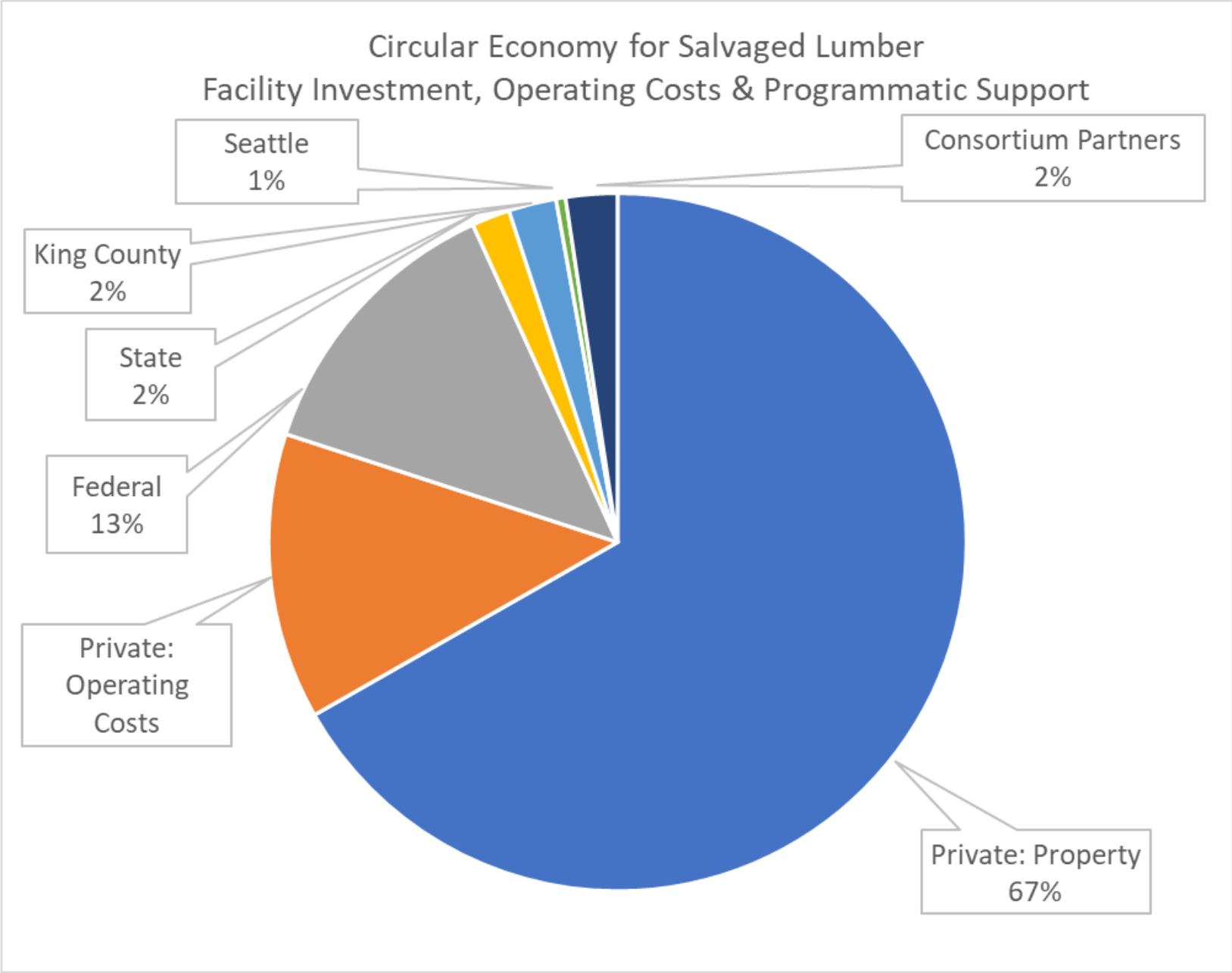
Option 2: KC purchases a smaller move-in ready property/warehouse, we limit tenants to one primary partner, and we lease it to them (CIP budget project)

Option 3: Pass-through the grant to one (or more) of our partners and they find and lease property (operating budget project)

Option 4: Lease property and sublease to partners (CIP budget project)

Total Investment

Private: Property	\$37,750,000
Private: Operating Costs	\$7,500,000
Federal	\$7,450,000
State	\$1,000,000
King County	\$1,250,000
Seattle	\$250,000
Consortium Partners	\$1,350,000





Bay Area Deconstruction Workgroup

U.S. EPA Updates

September 25 , 2024

Timonie Hood

Zero Waste & Green Building Coordinator
U.S. EPA Region 9, San Francisco

Disclaimer

If there are any inconsistencies between Program Guidance or future funding solicitations and the statements in this document or webinar, the Program Guidance or funding solicitations are the controlling documents.

Unprecedented Federal Funding Focused on Environmental Justice & Climate Change

- [Bipartisan Infrastructure Law](#) – Major climate, energy, and environment investments
- [Inflation Reduction Act](#) – Most significant action taken on climate change in the nation's history
- [Justice40 Initiative](#) – At least 40% of overall benefits and investments to disadvantaged communities



- are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and

- have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices..



Funding Applications

- **Register to Apply** – *it can take months*

SAM.gov Registration: <https://sam.gov/content/entity-registration>

SAM.gov assistance: https://www.fsd.gov/gsafsd_sp

Register in Grants.gov:

<https://www.grants.gov/applicants/applicant-registration>

Grants.gov Applicant Training

<https://www.grants.gov/applicants/applicant-training.html>

Grants.gov assistance: 1-800-518-4726 or support@grants.gov

- **Seek Opportunities to Advance Environmental Justice**

EPA Has Clearly Established Materials/Waste Connections to Environmental Justice & Climate Change



Solid Waste Infrastructure for Recycling (SWIFR) Grant Solicitation (2023):



“Approximately half of global greenhouse gas emissions are the result of natural resource extraction and processing.”



“Mismanaged waste also can compound health, economic, and undesirable social conditions in historically underserved and overburdened communities.”



76% of the funding for SWIFR Communities projects awarded benefit disadvantaged communities

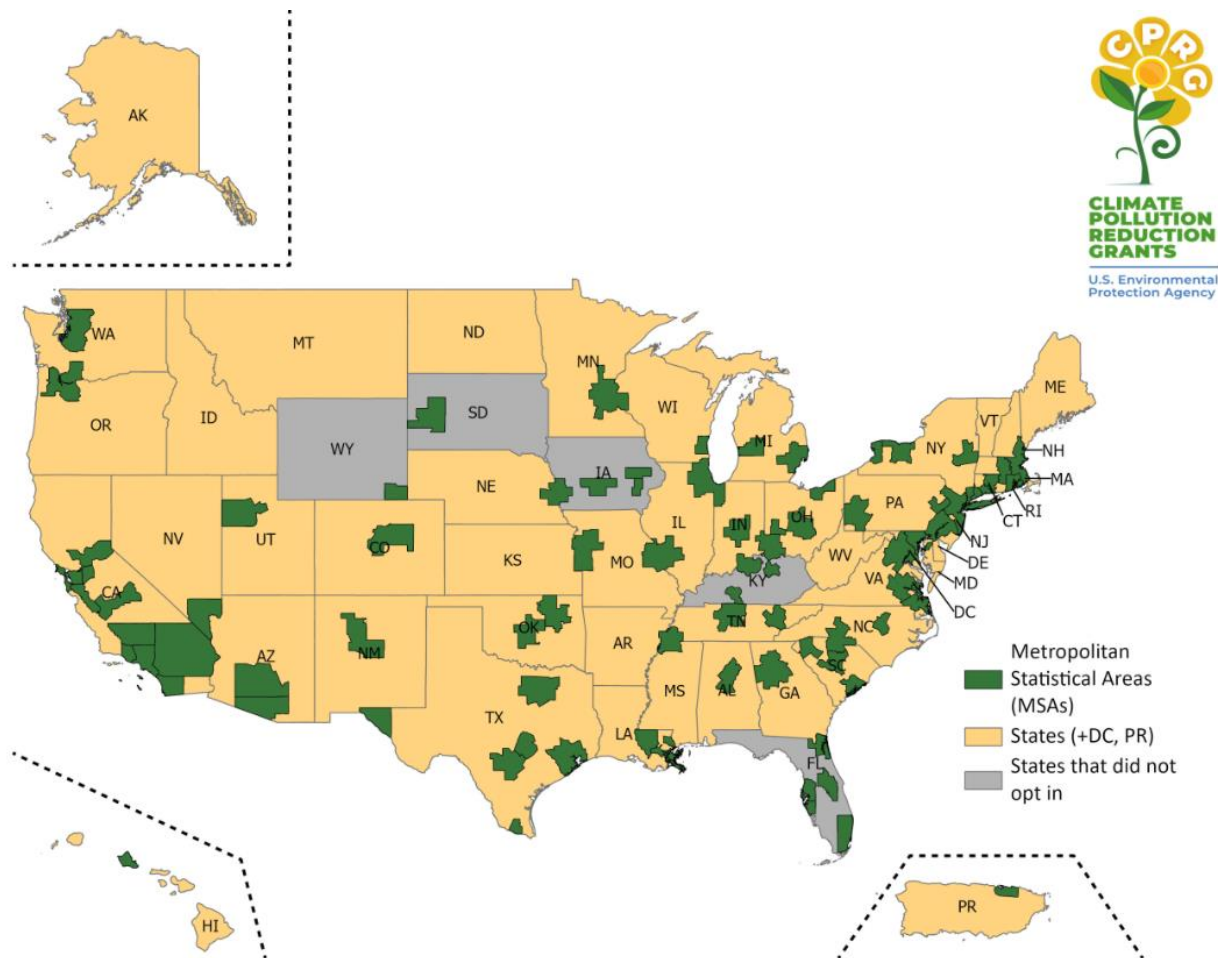
**EPA Climate Pollution Reduction Implementation Grants (closed)
Funded \$121 million for Materials Management and Waste Projects**

<https://www.epa.gov/inflation-reduction-act/cprg-implementation-grants-general-competition-selections>



45 states + DC + PR
82 metropolitan statistic areas
4 territories
90 tribes and tribal consortia

<https://www.epa.gov/inflation-reduction-act/climate-pollution-reduction-grants>



One planning grant, three deliverables over 4 years



Priority Climate Action Plan (PCAP)

- Due **March 1, 2024**
- Near-term, implementation-ready, **priority greenhouse gas (GHG) reduction measures**
- **Prerequisite** for implementation grant



Comprehensive Climate Action Plan (CCAP)

- Due in **2025** (later for tribes and territories)
- **All sectors** / significant GHG sources and sinks
- **Near- and long-term** GHG emission reduction goals and **strategies**



Status Report

- Due in **2027** (N/A for tribes or territories)
- **Updated** analyses and plans
- **Progress and next steps** for key metrics

Examples of Building Material Reuse in Priority CAPs

- Oregon DEQ:
 - Building reuse and space-efficient housing
 - <https://www.oregon.gov/deq/ghgp/Documents/CPRG-OregonPCAP.pdf>
- Seattle-Tacoma-Bellevue MSA:
 - Measure 10: Circular economy salvaged lumber program.
 - [https://pscleanair.gov/DocumentCenter/View/5368/CPRG-2024-01-Phase-1-PCAP-Final?bidId=](https://psccleanair.gov/DocumentCenter/View/5368/CPRG-2024-01-Phase-1-PCAP-Final?bidId=)

2 Bay Area MSAs

- San Francisco-Oakland-Berkeley
 - Alameda County
 - Contra Costa County
 - Marin County
 - San Francisco City/County
 - San Mateo County
 - + Napa
 - + Solano
 - + Sonoma
- San Jose-Sunnyvale-Santa Clara
 - Santa Clara County
 - San Benito County



BAAQMD CPRG Comprehensive Climate Action Plan

- Sectors:
 - Industry
 - Energy generation
 - Buildings
 - Transportation
 - Agriculture, natural & working lands
 - Waste & materials



First public workshop:
Sept 30 at 5:30-7:00 PM

EPA Resources to Support Climate/Materials & Embodied Carbon Connections

- **Resources, Waste and Climate Change**
<https://www.epa.gov/smm/resources-waste-and-climate-change>
- **Climate Pollution Reduction Grants Resources**
<https://www.epa.gov/inflation-reduction-act/cprg-tools-and-technical-resources-waste-and-materials-management-sector>
- **EPA WARM Model** – online calculator converting reduction, recycling, composting, anaerobic digestion, landfilling, and combustion into GHG equivalents <https://www.epa.gov/WARM>



Greenhouse Gases from Waste and Materials Management

The waste management sectors include greenhouse gas (GHG) emissions from significant sources such as landfills and wastewater treatment facilities.¹ In addition to emissions from management of waste, the production, transportation and consumption of consumer products also results in emissions (e.g., from fuel use for transport, electricity, etc.).²



Recycling 10 tons of aluminum cans reduces GHG emissions by over 91 Metric Tons of CO₂ Equivalent =

Taking 19 cars off the road for a year OR

10,293 gallons of gas

Open: Environmental Justice Thriving Communities Technical Assistance Centers

- **16 Centers providing free assistance to EJ grant applicants**
- Training and capacity building for:
 - Finding and applying for grants
 - Developing strong proposals
 - Managing federal grants



<https://www.ejtctac.org>

<https://www.epa.gov/environmentaljustice/environmental-justice-thriving-communities-technical-assistance-centers>

Open: EPA Environmental and Climate Justice Community Change Grants (\$2 billion)

<https://www.epa.gov/inflation-reduction-act/inflation-reduction-act-community-change-grants-program>

- **Funding:**
 - **\$10-20 million/grant** – Community-Driven Investments for Change
 - **\$1-3 million/grant** – Meaningful Engagement for Equitable Governance
- **Eligibility:** A partnership between two **community-based nonprofit organizations** (CBOs) **OR** a partnership between a CBO and one of the following:
 - **Local government** – can be **Lead Applicant**
 - Federally-recognized tribe – can be **Lead Applicant**
 - Institution of higher education – can be **Lead Applicant**
- **Rolling applications due Nov. 21, 2024**



U.S. Environmental
Protection Agency

Open: EPA Solid Waste Infrastructure for Recycling Grants

- **SWIFR Grants: Communities (Political Subdivisions) - \$58M (grants \$500,000 - \$5M) due 12/20 and \$20M for Tribes and Intertribal Consortia (\$100,000 - \$1.5M) due 3/14**
<https://www.epa.gov/infrastructure/solid-waste-infrastructure-recycling-grant-program>

- **2023 - 25 selected - over \$73M**

- **\$4M – Austin Reuse Warehouse – furniture, building materials & training**
https://www.epa.gov/system/files/documents/2023-09/City_of_Austin_SWIFR.pdf
- **\$4M – City of Seattle - salvaged wood warehouse**
https://www.epa.gov/system/files/documents/2023-09/City_of_Seattle_SWIFR.pdf

- **Many Eligible Activities, including:**

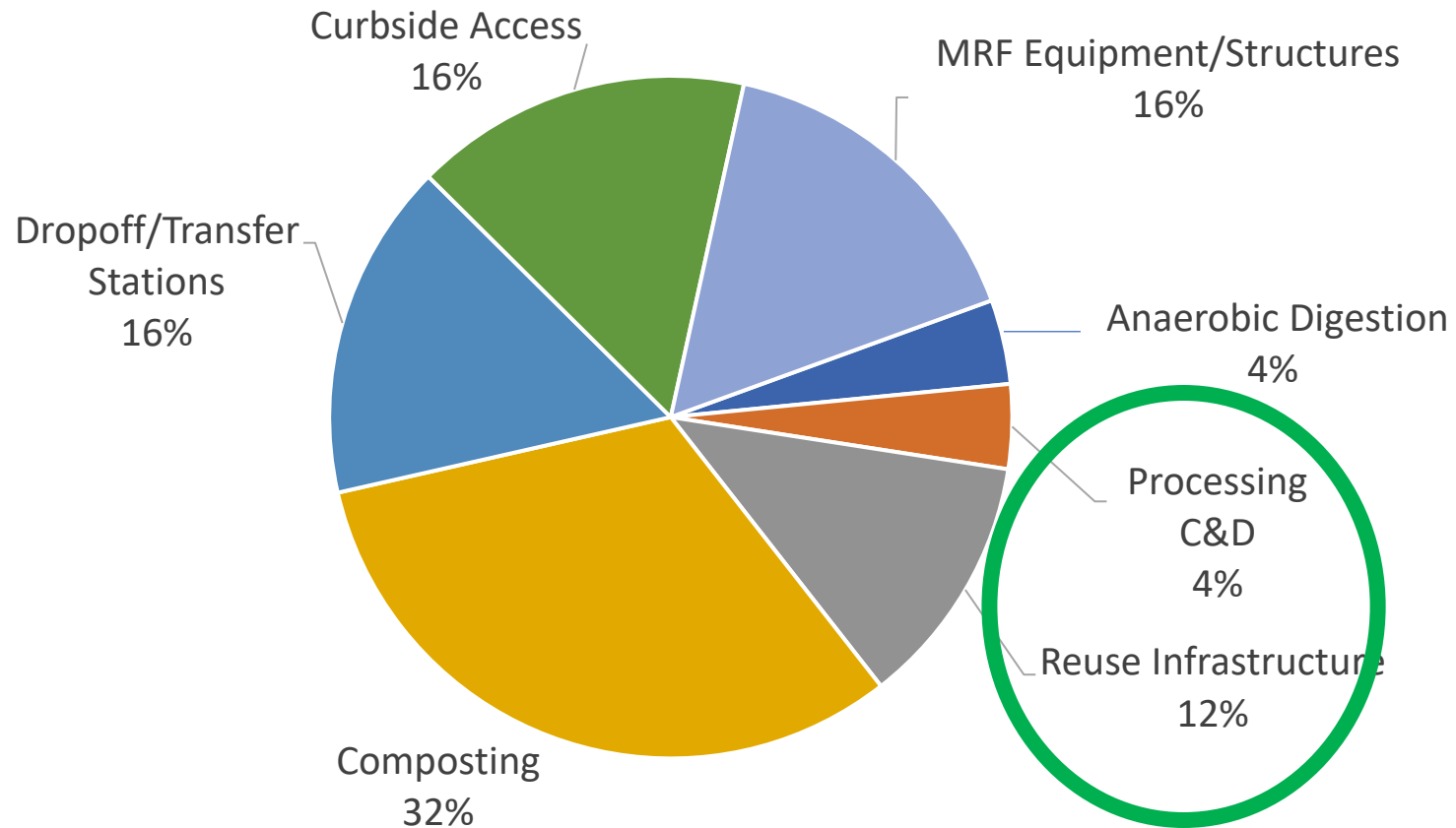
Communities: Development of and/or upgrades to **reuse infrastructure** (e.g., online reuse platforms, community repair spaces, technology and equipment to improve materials management reuse options, food donation, upcycling, staging areas for material reuse/donation, reuse warehouses, reuse centers, and electronic waste and computer recycling and refurbishing) ...

Tribes: Reuse centers

Activities to reduce, reuse and recycle building materials including **deconstruction** (dismantling buildings for reuse and recycling) and recycling equipment and projects
construction and demolition debris

Funded Project Fact Sheets: <https://www.epa.gov/infrastructure/recycling-grant-selectees-and-recipients>

SWIFR Communities: Round One Funded Projects



EPA Low Embodied Carbon Construction Materials Grants (\$250 million)

To improve transparency and disclosure of greenhouse gas (GHG) emissions data to procurement of lower embodied carbon construction materials and products

Funding: *Approximately \$30 million in 1 supporting projects covering salvaged*

Eligible: Businesses, nonprofits, universities, states and territories, tribes

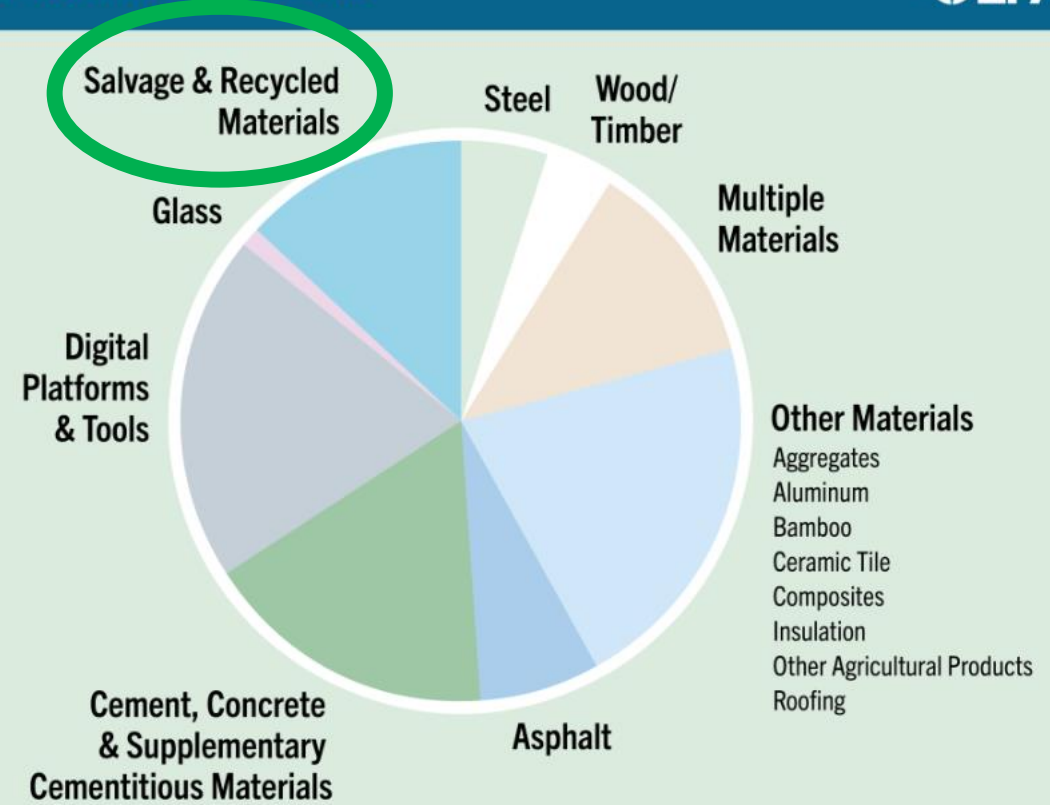
Due: Round one announced July 2024; Next round


Open: Build Reuse — Grantee seeking building material reuse centers to receive **subaward funding** to conduct reuse climate impact research

For more information contact: materialreuse@gmail.com

Material & Product Categories for Grant Selections

Reducing Embodied Greenhouse Gas Emissions for Construction Materials*





*Thank you for your
important work to scale
up reuse!*

Oct. 23, 2024 (10-12 PT)

**Next Bay Area
Deconstruction Workgroup
Meeting**

Reuse Funding

<https://www.stopwaste.org/BADWG>

Contact Annika Sial at annika.sial@sfgov.org
to be added to the invite list