

Agenda





9:00 Welcome

9:10 Ecology and Commerce updates

9:25 Board roundtable

9:35 Mya Keyzers - Commodity - Industry update

9:45 Gretchen Newman - C & D data presentation

10:05 Bio Break



10:15 C & D Presentations

- Dave Bennink Building Deconstruction Institute & Re-Use Consulting
- Katie Kennedy Seattle Public Utilities
- Hanna Waterstrat Department of Commerce State Efficiency & Environmental Performance (SEEP)



11:30 Wrap Up

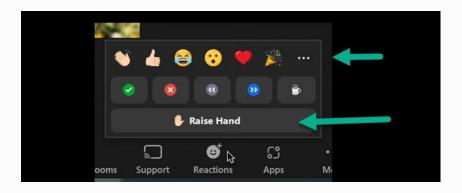
Participation in this meeting:

Roles

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

Roles

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



Agency updates

Kara Steward



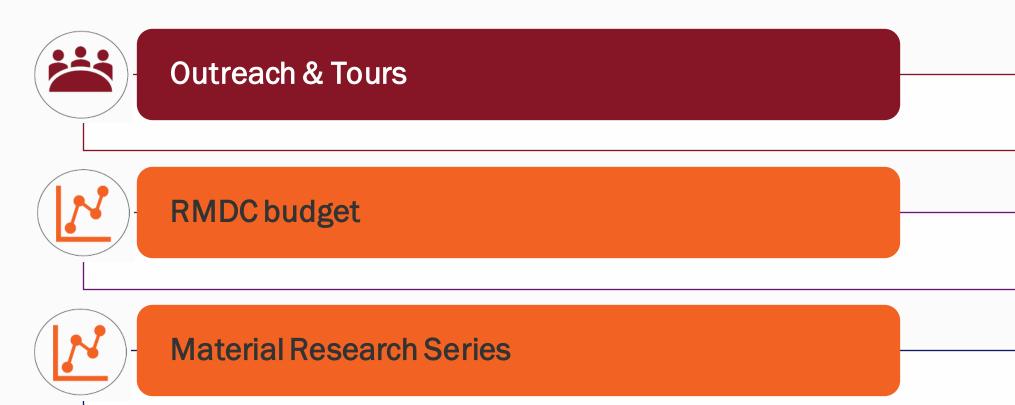
Kirk Esmond





Ecology Update







NextCycle Washington



RMDC outreach and tours



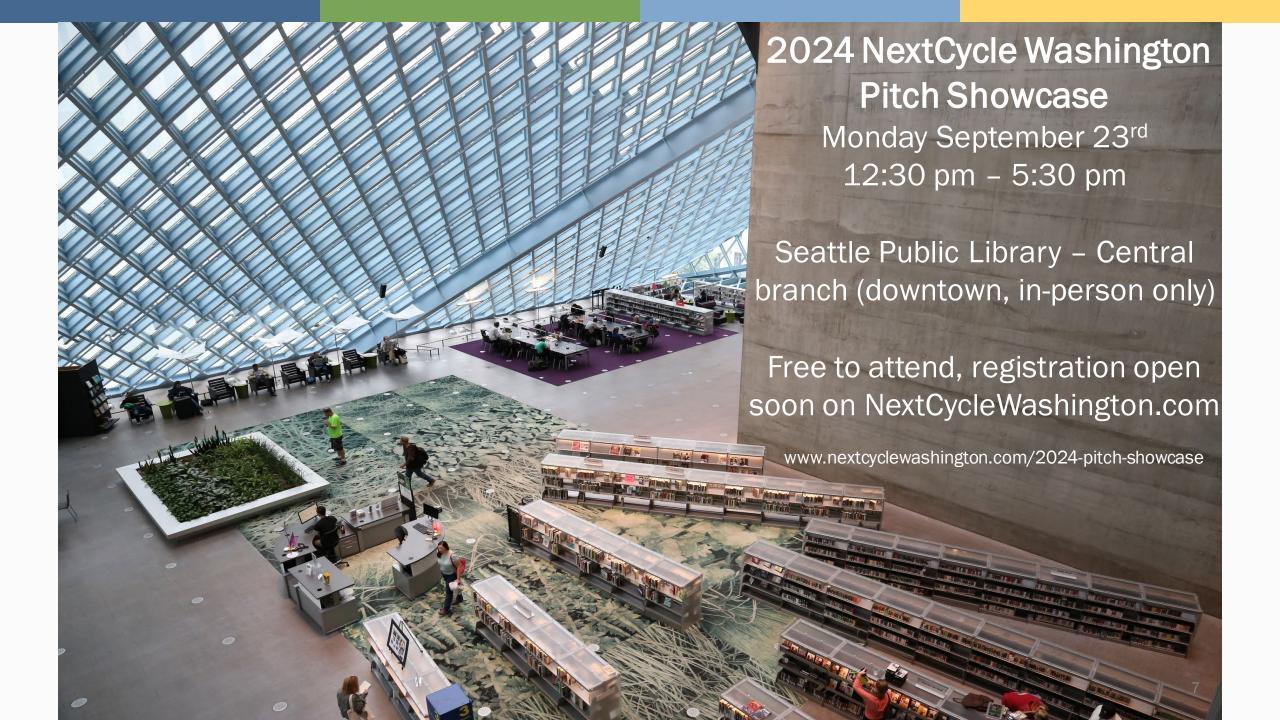












Washington State Circular Economy

RECYCLING MARKET DEVELOPMENT CENTER, ADVISORY BOARD
MEETING
— COMMERCE UPDATES –
JULY 10, 2024

Kirk Esmond | Circular Economy Development Director

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

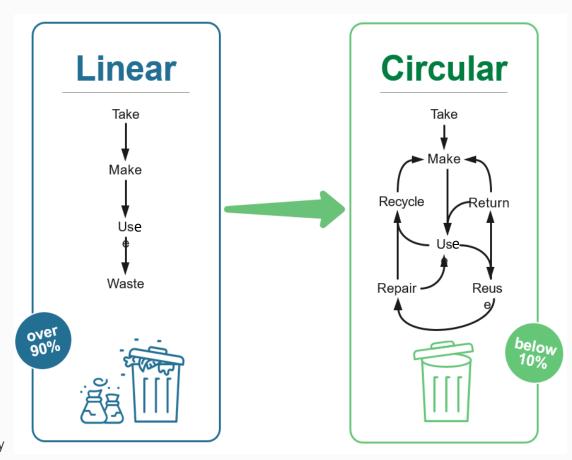


High-level Updates

Circular Economy Growth

Key initiatives and projects underway

- Circular Economy Development Unit
 - Current buildout and future team expansion
 - Broader, more inclusive messaging (E.g. Industrial Symbiosis as a key tool in the toolbox)
 - Increased outreach and statewide support for NextCycle WA (E.g. ADO network)
- Commerce (upcoming) Decision Package
 - Requesting \$5M/year increase in ongoing funding through the legislature
 - Coordinating with 'sibling' agencies (E.g. ECY, WSDA) and other statewide entities
 - Focusing on the shift to a more circular, renewable and bioeconomy
- International Presence and Continued Knowledge-sharing
 - Int'l Industrial Symbiosis Alliance (COM goal: importing and exporting innovation)
 - Pilot projects in WA state utilizing Danish, circular energy park model
 - Recent Bioeconomy Trade and Study Mission in Finland (focus: forestry and secondary wood products)



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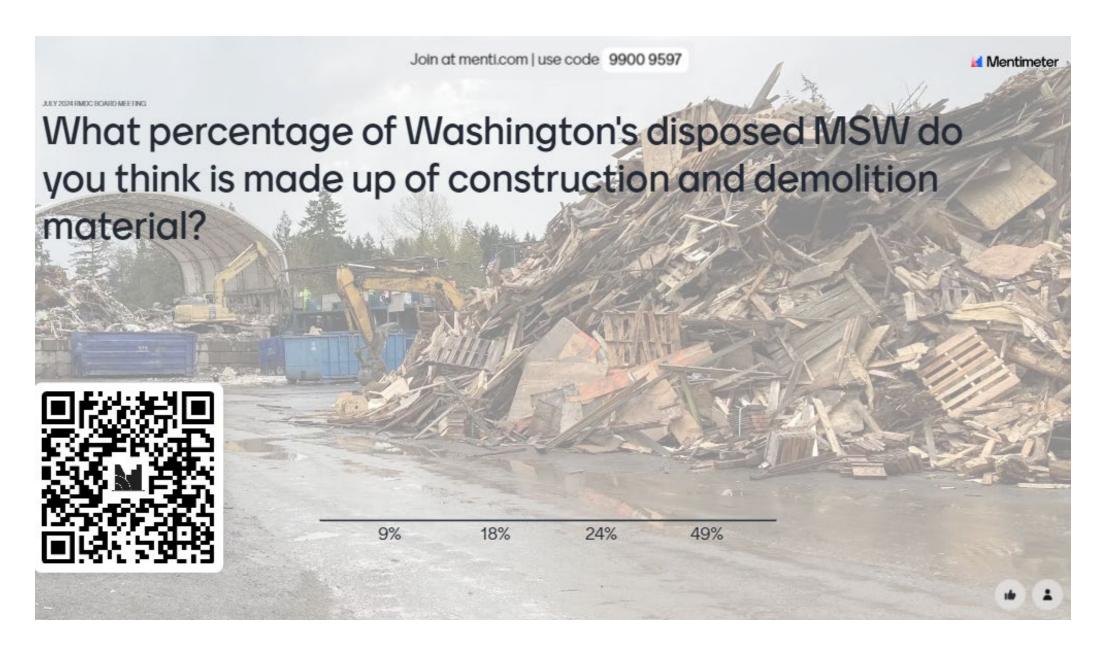


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11:30 Wrap Up



Board roundtable



Board Roundtable



Allen Langdon GreenBiz Jon Smieja





Carly Mick



Karl Englund



Chris Piercy



Natalie Caulkins



Heather Trim



Preston Peck



NORPAC Jay Simmons

Jay Simmons



Tim Shestek



Jocelyn Quarrell

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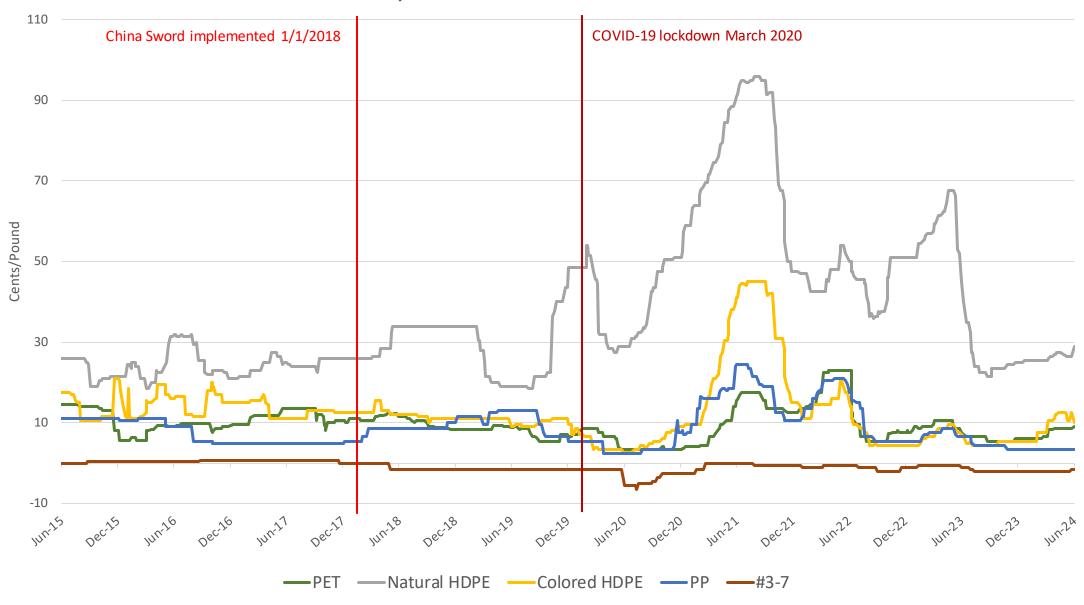
11:30 Wrap Up

Recycling Commodity Prices

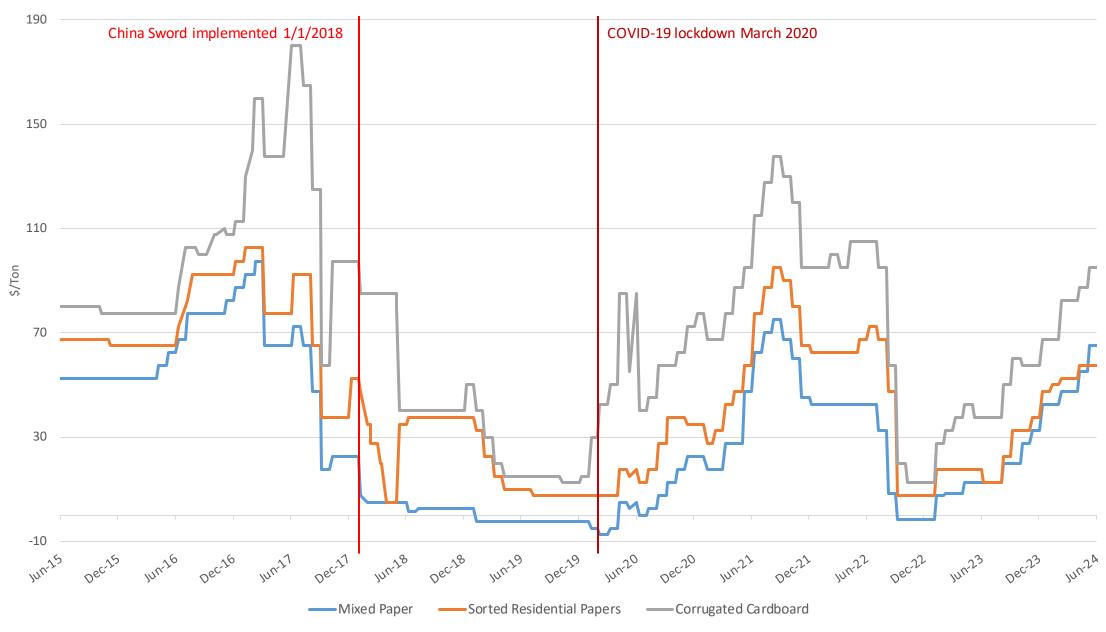
- RecyclingMarkets.net
- Market Region 4
- Reflects prices of sorted and baled postconsumer materials



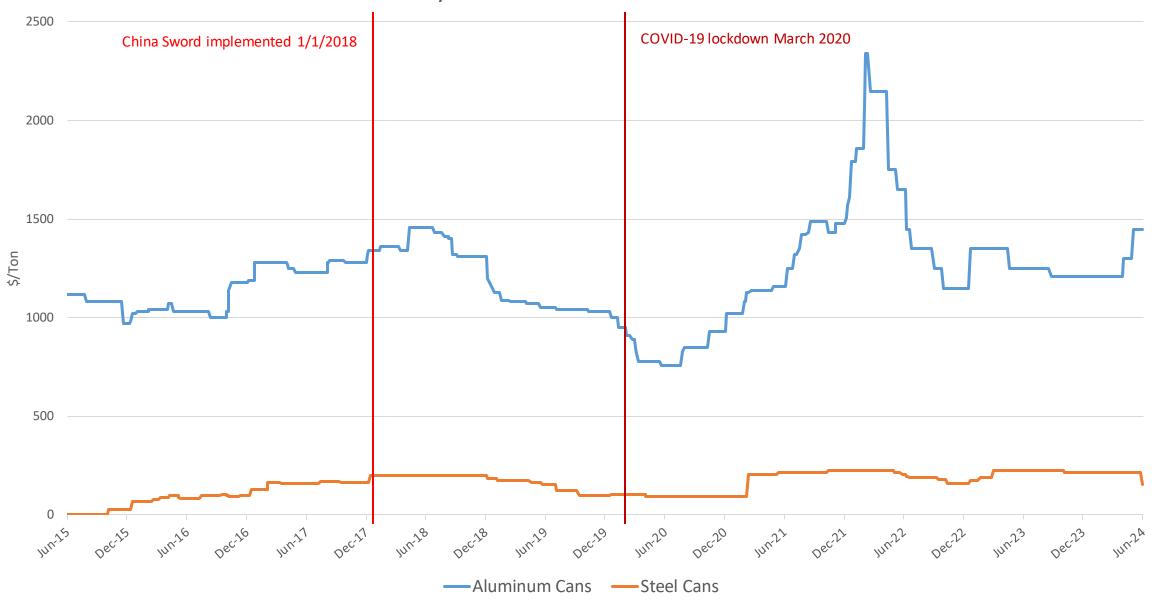
Recycled Plastic Prices in the PNW



Recycled Fiber Prices in the PNW



Recycled Metal Prices in the PNW



Recycled Glass Prices in the PNW



End market updates

- McKinley Paper Company of Port Angeles lays off 193 employees.
- Ardagh halts production at Seattle location causing temporary layoffs of 244 employees.
- Some good news BIG Recyclers Hub (Pasco) & Spoke (Walla Walla and Benton City)
 - 118,000 pounds of glass have been diverted so far in 2024.
 - 60,000 lbs. has been received by factories in Portland and Seattle for new glass containers, insulated fiberglass, and sandblasting material.
 - Two local grants allowed them to offer monthly glass recycling events in Dayton totaling 1,500 lbs. so far.

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11:30 Wrap Up



Ecology's C & D data

Gretchen Newman

Department of Ecology









Construction and Demolition Waste in Washington

Gretchen Newman

July 10, 2024

Table of Contents

- **1** What is C&D?
- **2** C&D reporting and tracking
- 3 Case Study: City of Seattle
- 4 Conclusions



Construction and Demolition in Washington

- C&D waste is large part of WA waste stream
- Current C&D reporting and tracking methods leave data gaps
- Much is unknown about C&D waste recovery and markets in Washington









Construction and Demolition in Washington

C&D waste typically includes:

- Wood, insulation, asphalt paving and roofing, concrete, drywall, cardboard, carpet and padding, plastics, wiring, metals, countertop and flooring materials, ceramics, and brick
- Materials with potential to be recycled (for example, drywall, wood, cardboard, concrete)



While some materials in a typical C&D stream are recyclable, many materials have no markets, or may be highly degraded, and will go to disposal.



C&D Waste Definitions

C&D is not a defined term under the SW Handling Regulations, Chapter 173-350 WAC, however, C&D is included in the definition of solid waste:

"Solid waste," "waste materials," or "wastes" means all putrescible and nonputrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, **demolition and construction wastes**, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

Some C&D materials are individually defined, including **cementitious material**, **contaminated soil**, **cured concrete**, **glass**, **inert waste**, **wood derived fuel**, **and wood waste**.



C&D Waste vs Inert Waste

C&D is NOT inert waste

Inert waste includes ONLY:

 Cured concrete; asphaltic materials; brick and masonry; ceramic materials; glass; stainless steel and aluminum

C&D waste is an overarching category that can contain inert materials, organics, and other sub-categories of waste

Mixed C&D may not be disposed of in inert waste landfills or stored or processed under piles or recycling exemptions. Solid Waste permits are required for management of mixed C&D.



Management of C&D

C&D may be managed for recovery...

Recovery paths include:

- Comingled C&D MRFs
- Individual stream recycling such as wood or gypsum
- Limited mixed streams like comingled concrete, asphalt, and brick

or disposal

Disposal paths include:

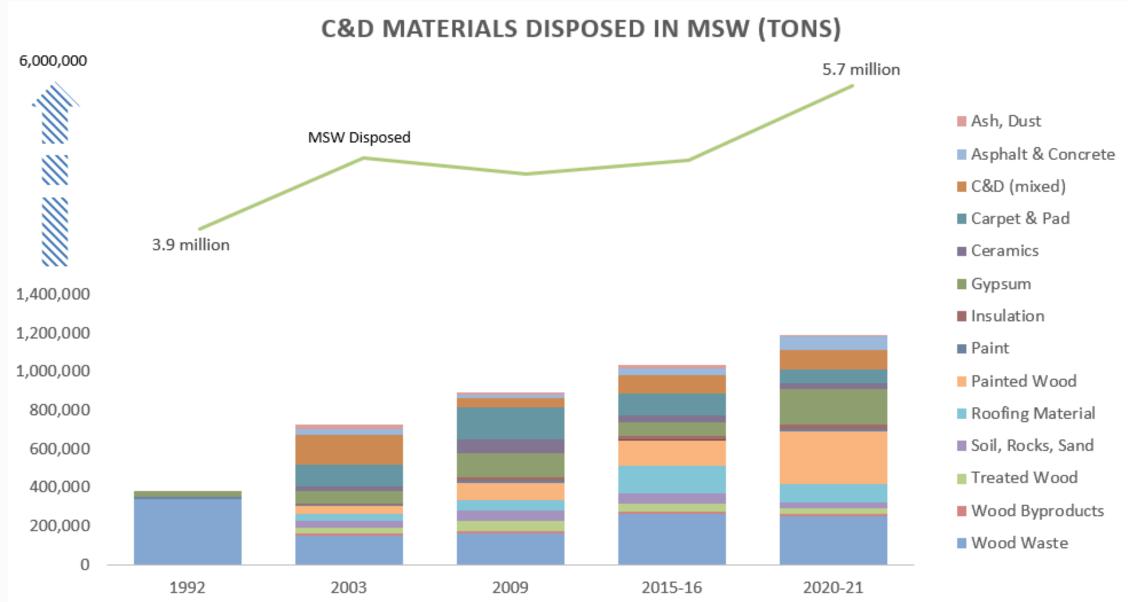
- Municipal Solid Waste landfills
- Limited Purpose landfills
- Inert waste landfills ONLY for the inert fraction of C&D
- Incineration/Energy Recovery
 ONLY for the non-inert fraction



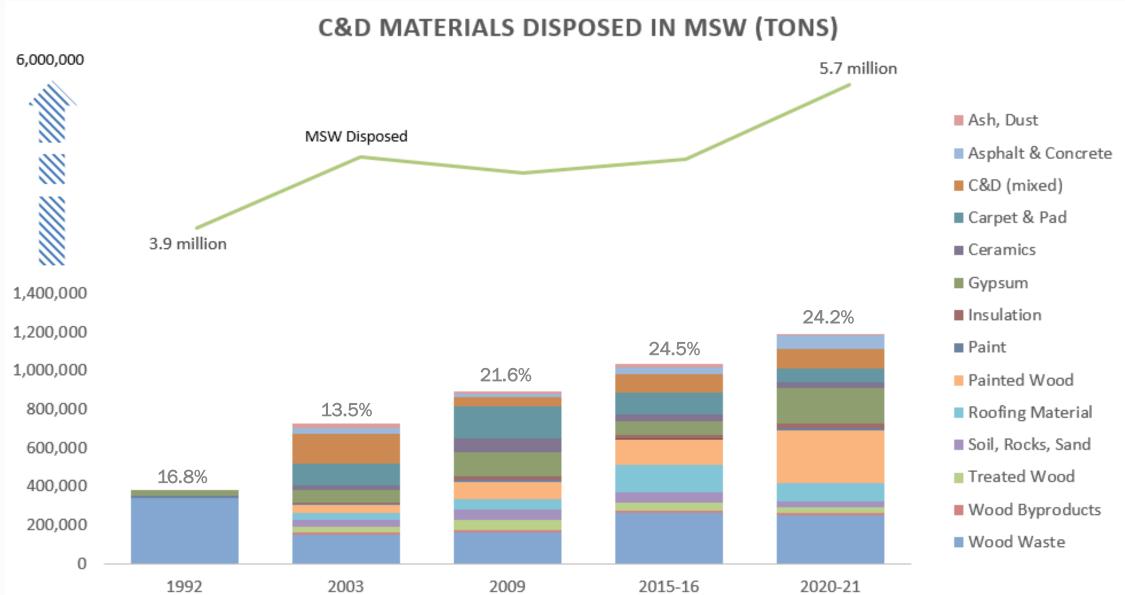
C&D Waste Measurement Methods

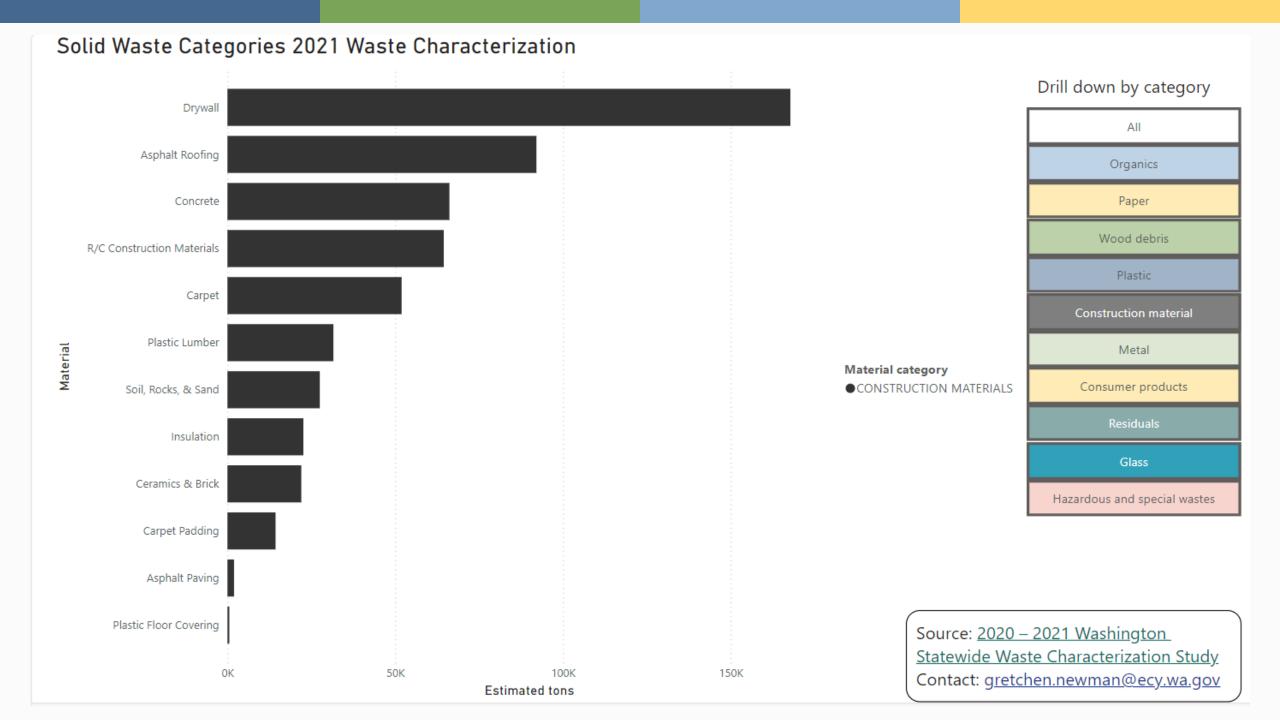
- Annual reports are required from C&D recycling and disposal facilities
 - Recovery data is compiled and reported along with other waste generation and recovery data
 - Disposal facilities
 - MSW landfills
 - periodic waste characterization studies measure C&D in mixed MSW
 - more goes to MSW landfills as homogeneous materials (concrete, wood, etc.)
 - Limited purpose and Inert landfills report homogeneous loads (no mixed MSW)
 - Energy recovery and incineration facilities

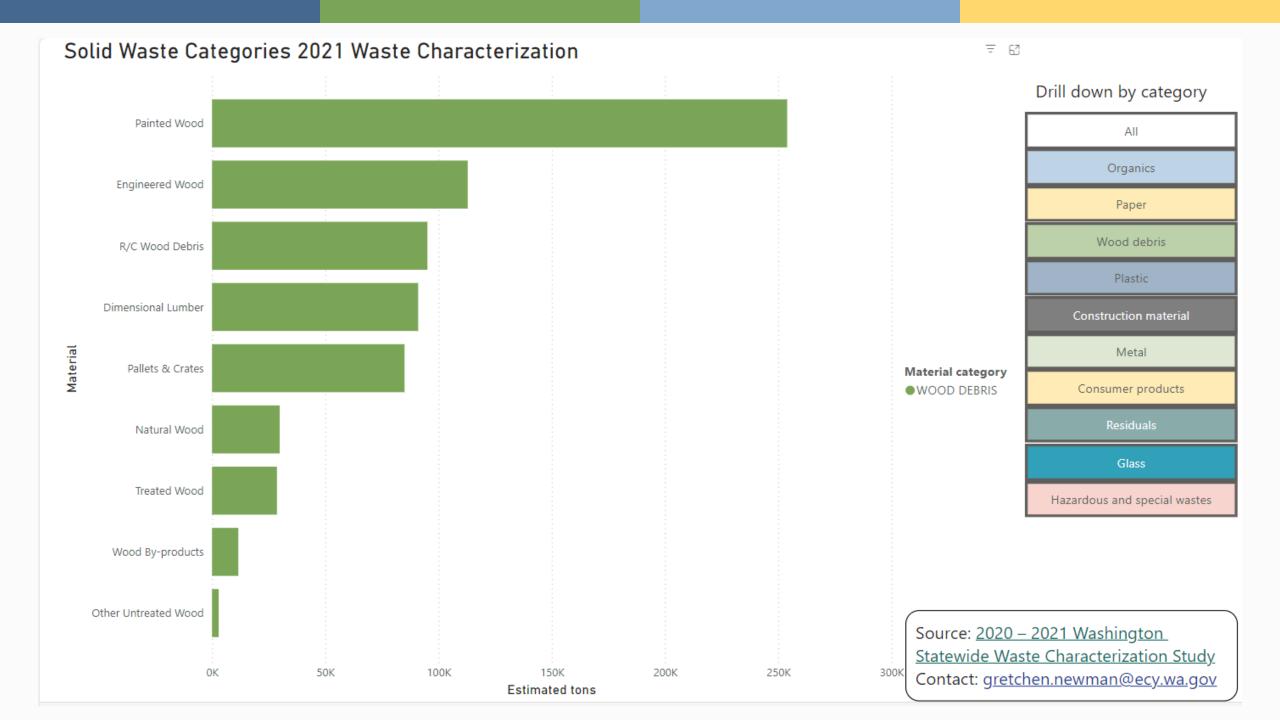






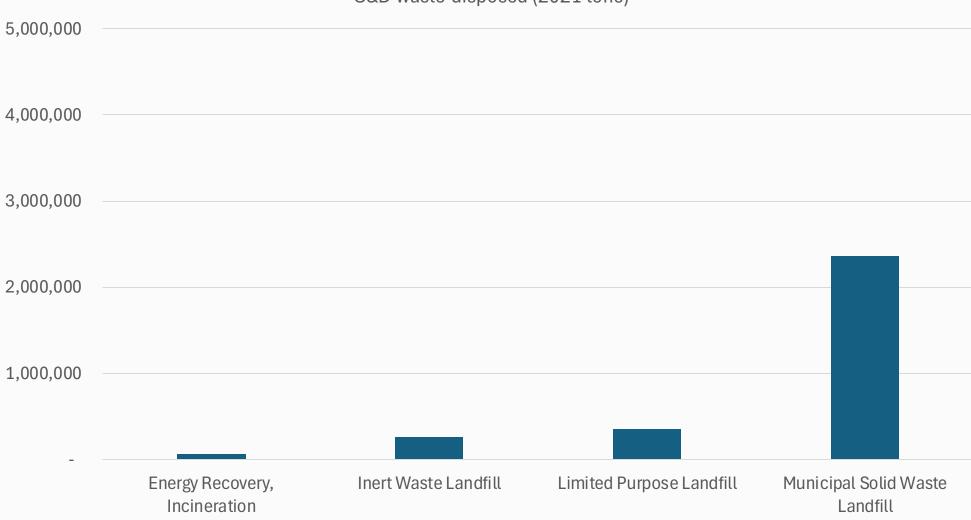


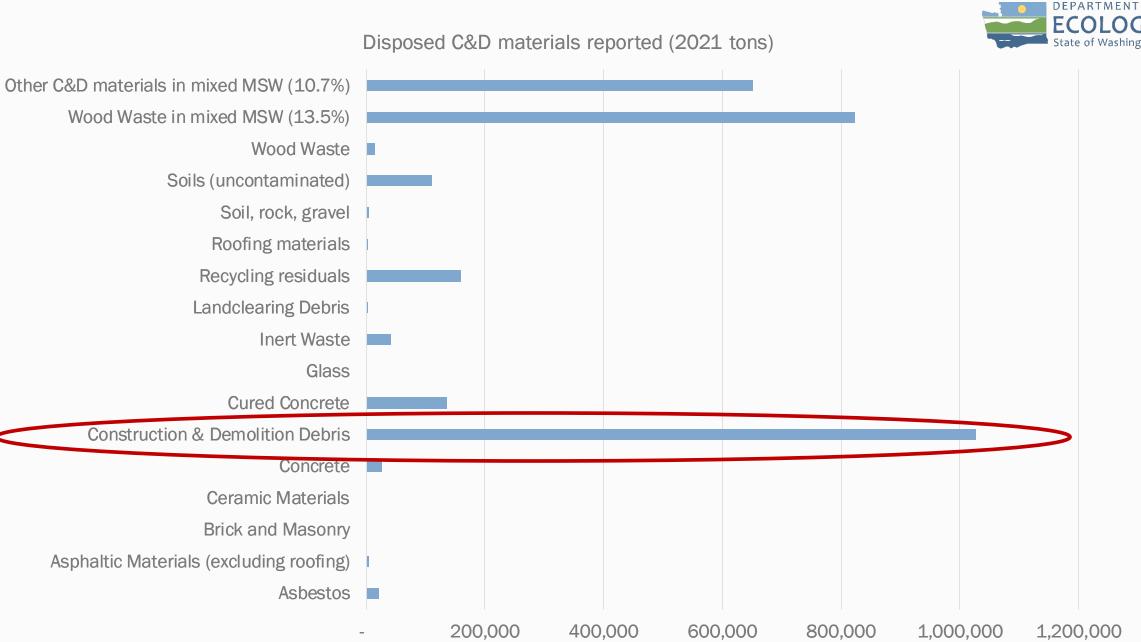






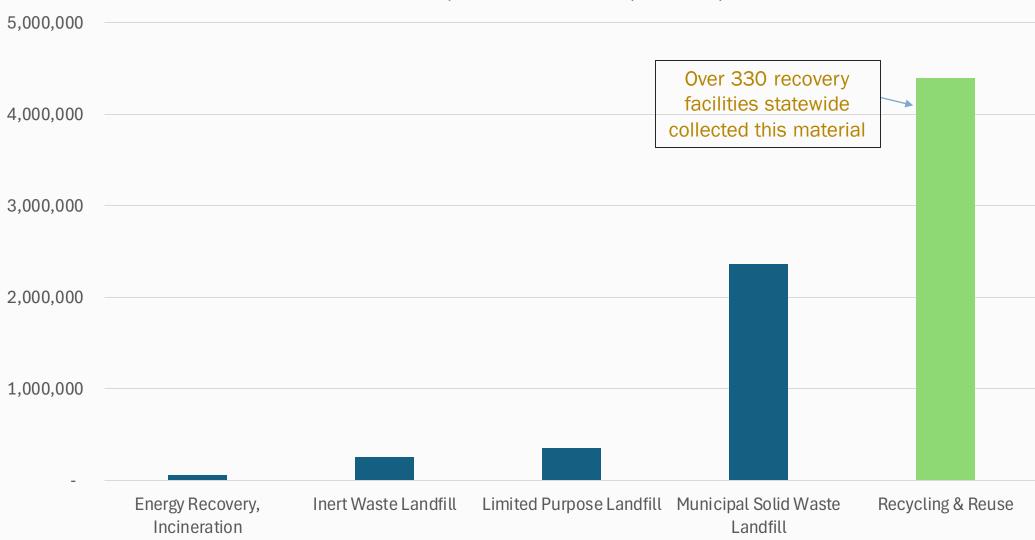
C&D waste disposed (2021 tons)





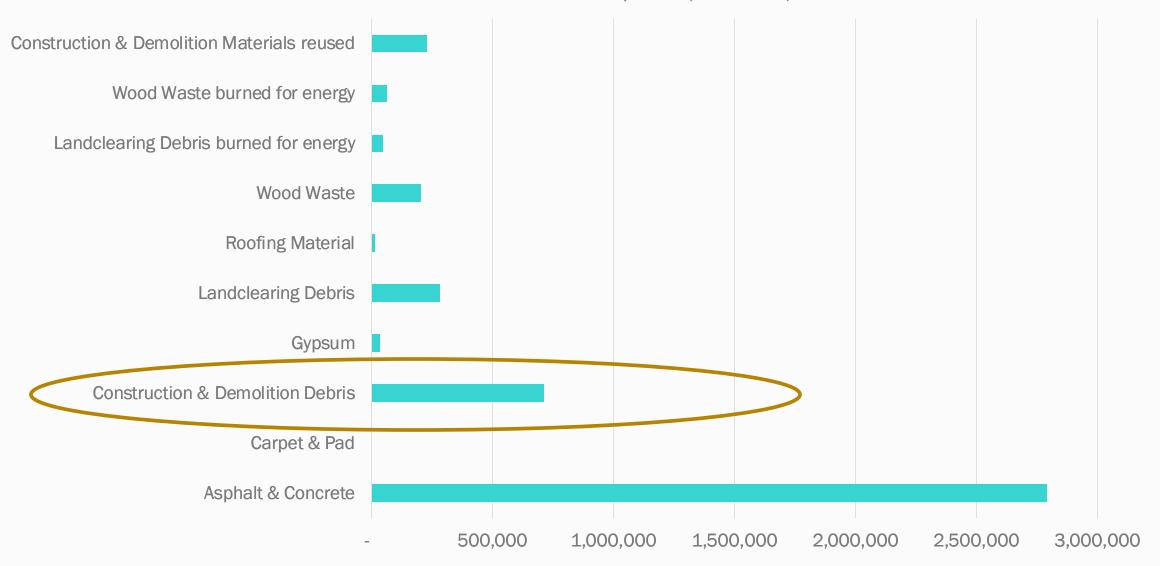


C&D waste disposed and recovered (2021 tons)





Recovered C&D materials reported (2021 tons)





Managing C&D: City of Seattle

- City of Seattle: Municipal Code 21.36.089
 - Prohibits recyclable materials from being disposed with C&D waste, including concrete, bricks, asphalt paving, metal, cardboard, gypsum, unpainted and untreated wood, asphalt shingles, carpet, and plastic film.
 - Enforced by periodic inspection by Seattle Public Utilities
- Promotion of deconstruction and salvage vs. demolition



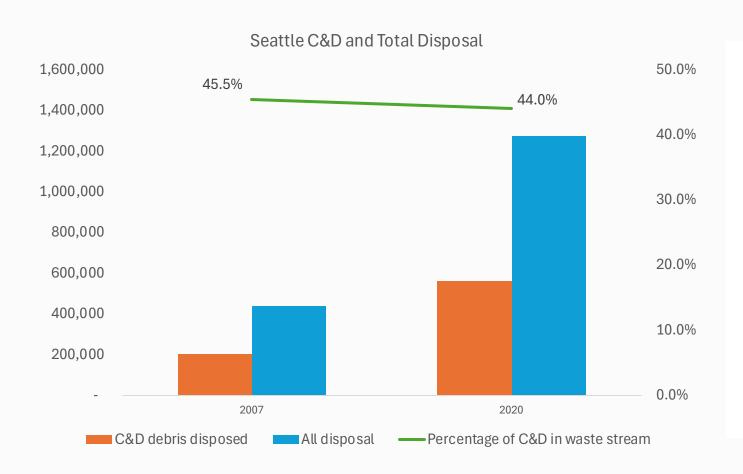
City of Seattle C&D, continued

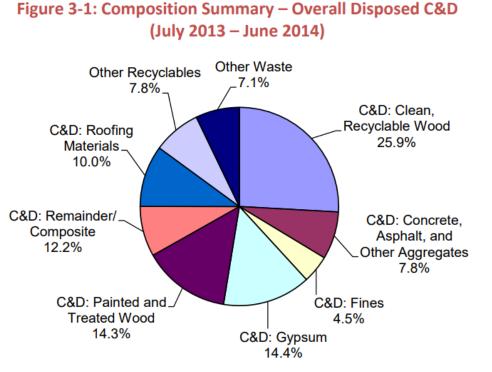
 C&D specific waste composition studies in 1997, 2007, and 2017





City of Seattle C&D, continued







Gaps

- Markets for wood and other C&D materials are lacking
 - Facilities may not be separating recyclable wood waste or other C&D waste if there is not a favorable market.
- Incorrect reporting and tracking
 - Facilities may not provide material detail on annual reports
 - Categorization of individual materials such as "wood" or "C&D" may cause confusion/inaccuracy
 - Inconsistent methods of estimating tons

No statewide study of C&D composition has been done in WA



What can we do

- Statewide C&D waste characterization study for disposal and recovery streams
- Look into options for reinstating green building team/work group at ECY (dissolved in 2011 due to legislative proviso)
- Promotion of sustainable building materials, deconstruction and salvage vs. demolition









Questions?

Contact:

Gretchen.newman@ecy.wa.gov



Sources

- Chapter 173-350 WAC
- 2003 WA State Waste Composition Study
- 2009 Washington Statewide Waste Characterization Study
- 2015-2016 Washington Statewide Waste Characterization Study
- 2020-2021 Washington Statewide Waste Characterization Study
- Seattle Solid Waste Director's Rule SW-405.2
- Construction & demolition WA Department of Ecology
- Recycled Concrete Aggregate Leachate: A Literature Review (wa.gov)
- PCBs in buildings Washington State Department of Ecology
- 2007 CDL Waste Composition Study (seattle.gov)
- 2020 Recycling Rate Report, Chapter 8 (seattle.gov)
- Alternatives to Demolition King County, Washington
- ECY Staff Interviews

Let's take a 10 minute break



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Washington State Redistribution Network

Dave Bennink

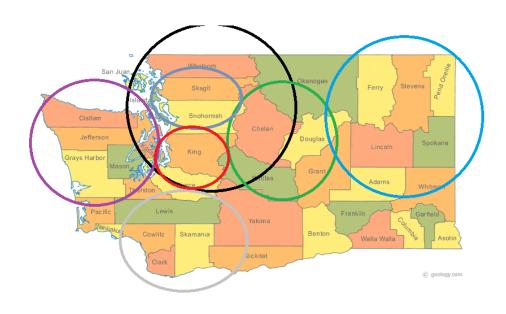
Building Deconstruction Institute & Re-Use Consulting











Circular Construction: Where the Built Environment and Circular Economy Intersect

-Deconstruction Dave-

Re-Use Consulting





RE-USE

By the numbers:

100,000,000+ pounds diverted from the landfill

5000+ jobsites

1500+ structures deconstructed

500+ jobs created

98 Circular Businesses

Reuse Innovation Centers

NYC, Baltimore, etc

Mid-block Rowhouse Practice



A LIFETIME'S WORTH OF WASTE

BUILDING DECONSTRUCTION INSTITUTE www.reuseconsulting.com



The EPA states that Americans produce an average of **4.9** pounds of waste a day

This adds up to about

135000 pounds of waste in

75 years, or one average
lifetime



The average American home is 2,400 square feet and weighs about 55 pounds per square foot

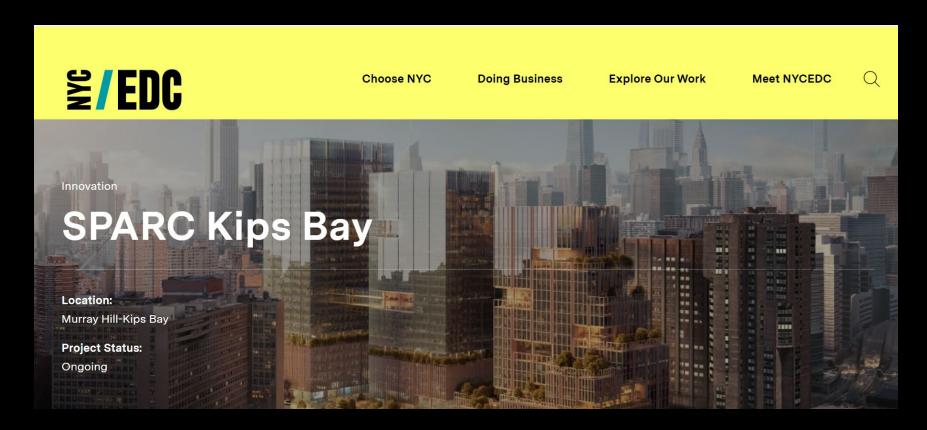
This adds up to about 135000 pounds per home



DEMOLITION OF ONE AMERICAN HOME IS EQUIVALENT TO A LIFETIME'S WORTH OF WASTE

Consider Building Deconstruction and ReUse to support an impactful circular and sustainable system

NYC's Flagship Circular Construction Project: \$2.1 billion SPARC Kip's Bay



This project will involve:

Hundreds of Green-Collar Jobs----Workforce development Reuse-Repair-Recycling-Remanufacturing Owner-reuse (existing materials incorporated into new buildings)

I'm building UP an industry that takes DOWN buildings...

- Deconstruction Contractor thousands of job sites including homes, restaurants, sheds, hospitals, garages, schools, etc....
- Store owner 21,000 square foot retail space selling an array of residential and commercial materials
- Consultant Helped out in 44 States, 5 Provinces and 12 Countries
- Workforce Development 1000+ jobs created and 98 Circular Businesses



25 Categories of materials –

- 1.Doors
- 2.Windows
- 3. Household
- 4. Hardware
- 5. Electronics
- 6. Lumber
- 7. HVAC
- 8. Flooring
- 25. Miscellaneous

- 9. Plumbing
- 10. Yard/Garden
- 11. Sheet goods
- 12. Roofing
- 13. Insulation
- 14. Cabinets
- 15. Appliances
- 16. Antiques

- 17. Masonry
- 18. Architectural salvage
- 19. Furniture
- 20. Finish wood
- 21. Post-Fabs
- 22. Shelving/Garage
- 23. Building Materials
- 24. Plants/Landscaping

Reuse Innovation Center

Process:

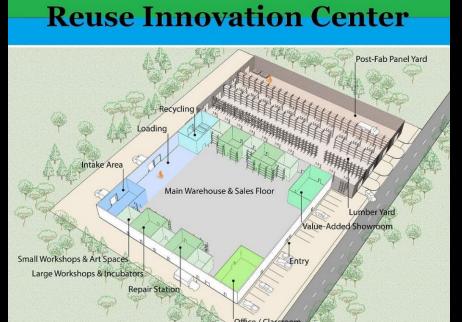
Collect used wood

Transport to RIC

Remanufactured

Placed in Showroom

Trainees involved in every step



Benefits:

20x more jobs

Job training—8 jobs in 1

90% Landfill Diversion

Diversity Achieved

Affordable materials

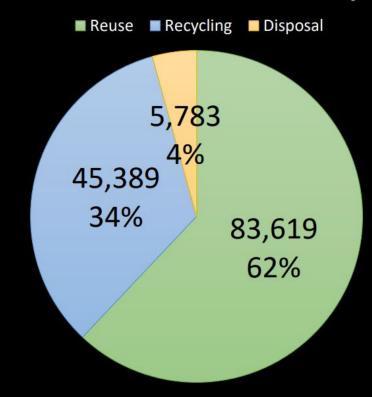
Materials Destination (lbs.)

Total House Weight:

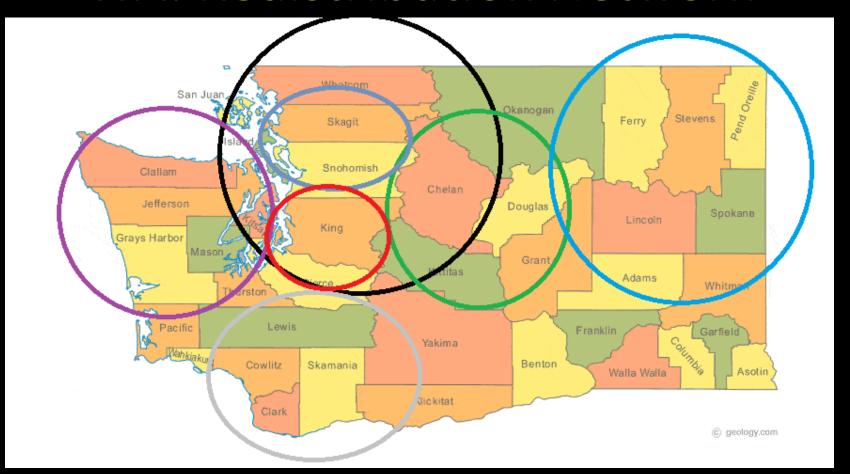
= 134,790 lbs.

= 51 lbs. per sq ft

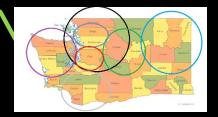
Average lifetime worth of waste for one person:
= 134,411 lbs.



WA: Redistribution Network



WA: Redistribution Network / N Cycle



















Reuse Innovation Center

The Washington State Redistribution Network

Insta: @DeconstructionDave

Consulting

Website: www.reuseconsulting.com

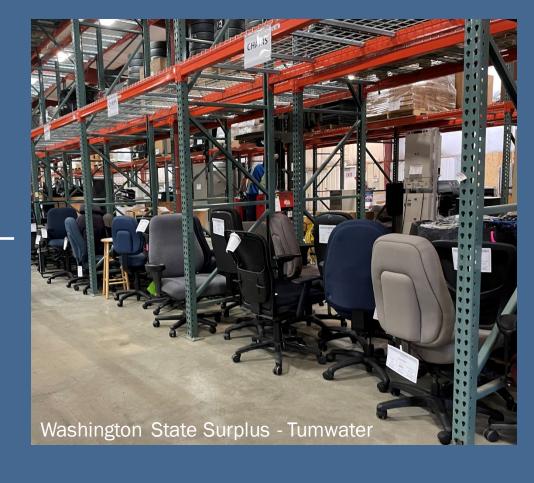
Facebook: Re-Use

Linkedin: Dave Bennink



Seattle Wood Circularity Loop

Katie Kennedy
Seattle Public Utilities

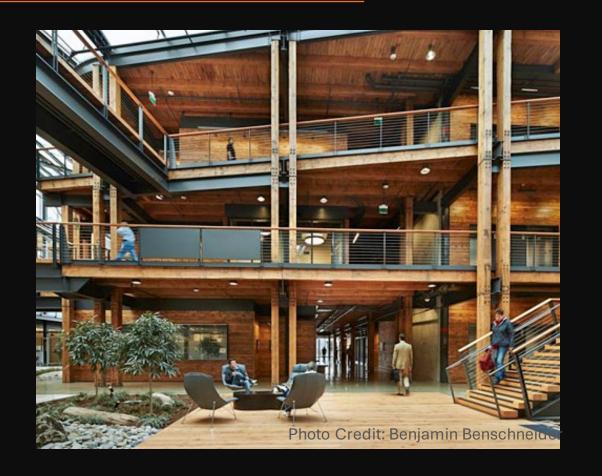


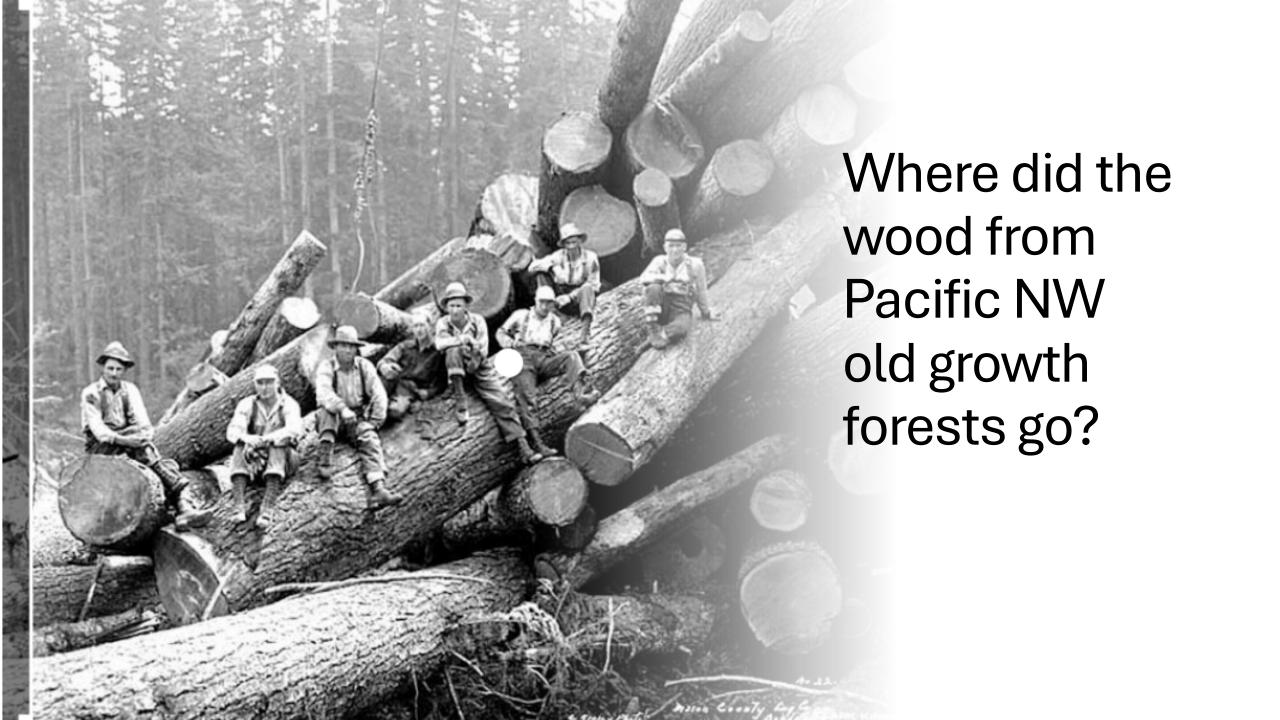


Seattle Wood Circularity Loop

Recycling
Development Center
Board Meeting

July 10, 2024





Potential Demolitions Since 2010

KCA Details

Select a 2010 tax parcel with a potential demolition from the map to see the details.

4 1 of 50 ▶

Demo Permit Details

715 28TH AVE E

Building Permit: 6818737

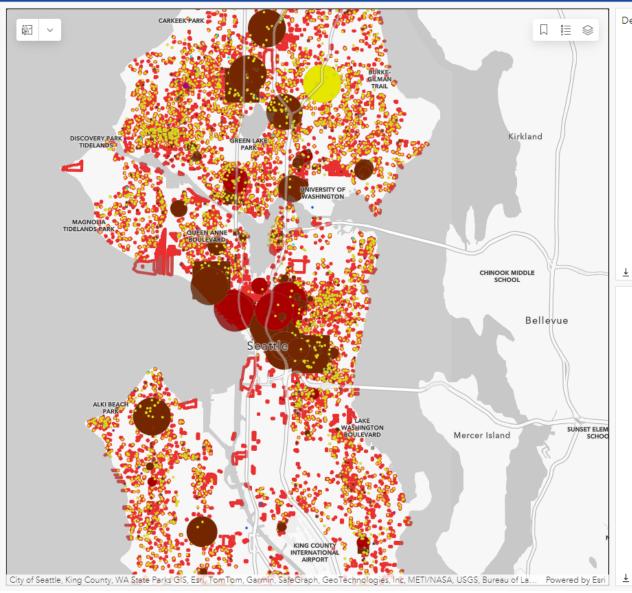
Permit Finaled

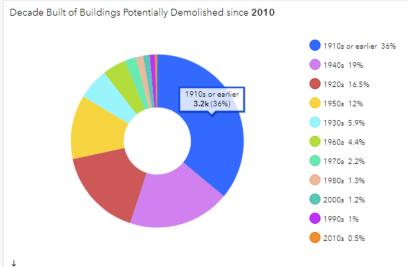
Application: 4/16/2021 (application to issuance: 143 days)

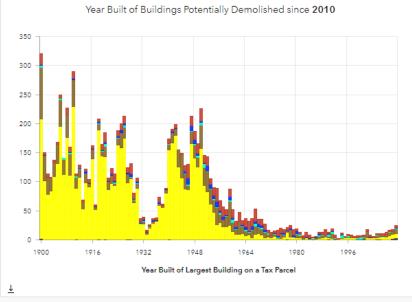
Issued: 9/6/2021

2023 KCA Details

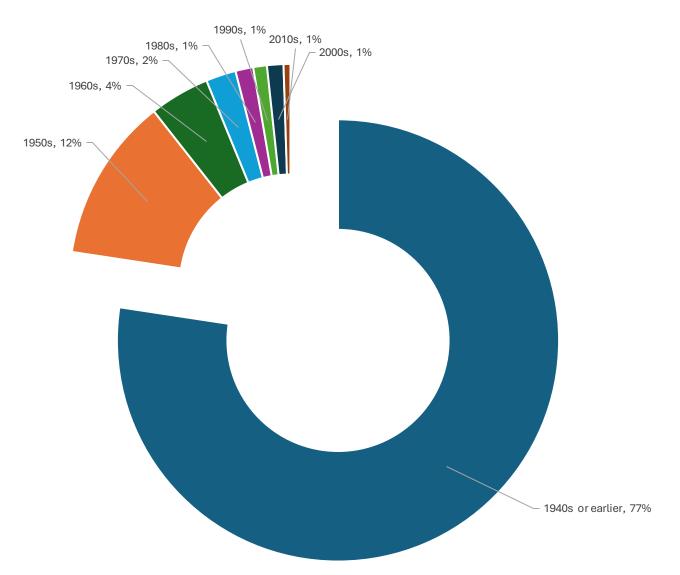
Select a 2023 tax parcel from the map to see the details.

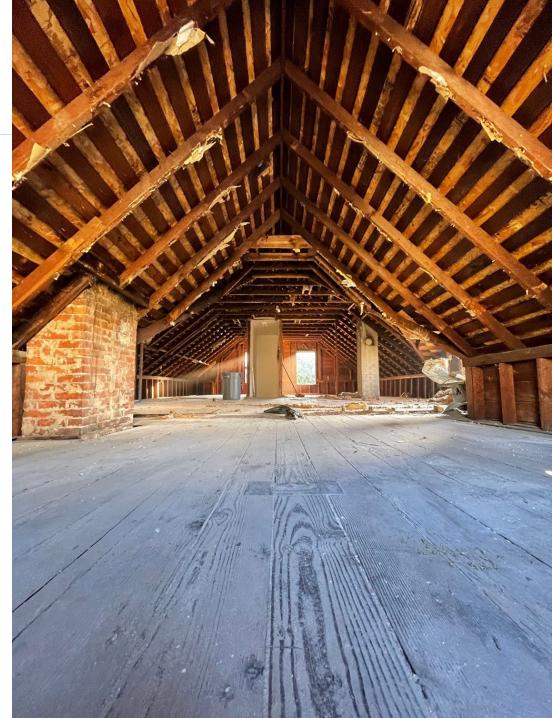




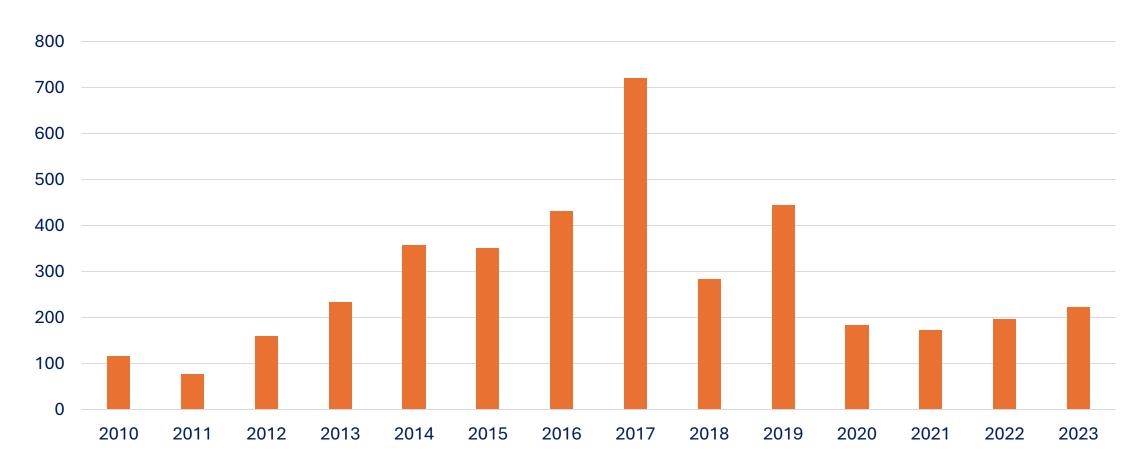


77% of Single-family homes demolished since 2010 were built in the 1940s or Earlier



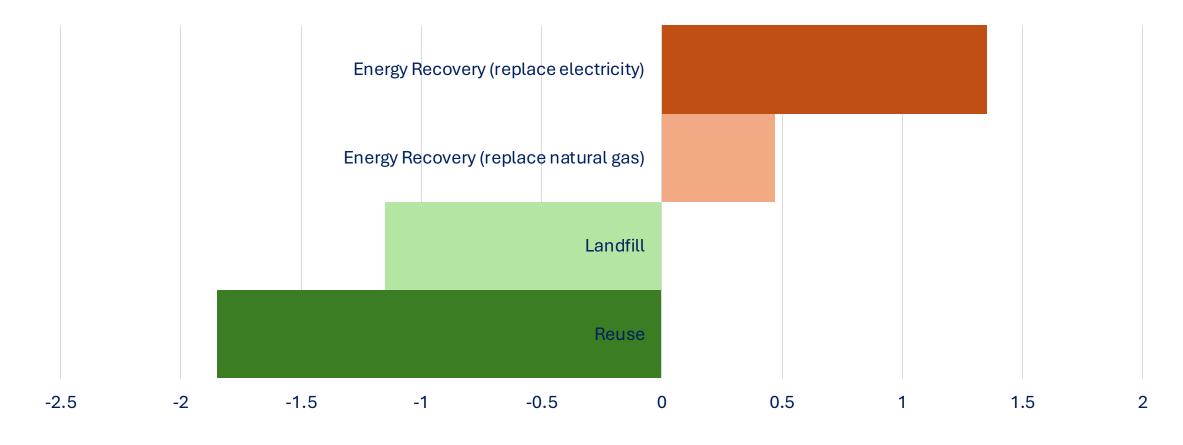


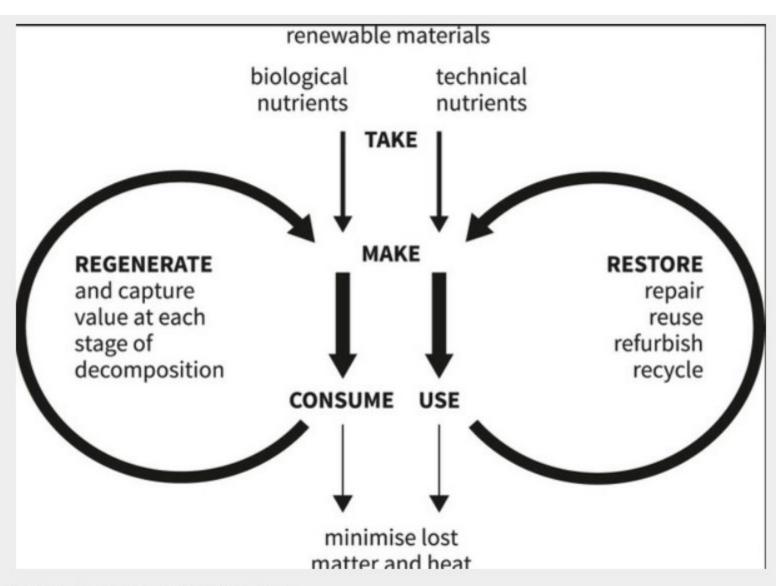
Demolitions of Single-family Houses in Seattle, 2010-Present



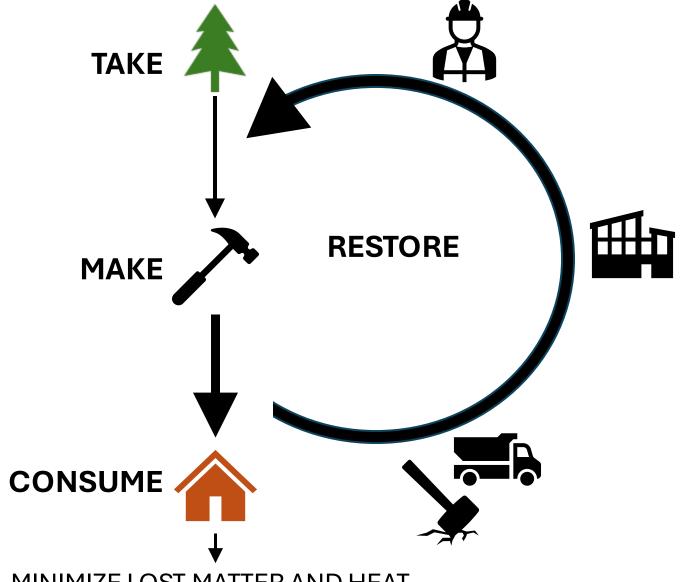
99% of recovered C&D wood: boiler fuel

Carbon stored, released and offset from End Of Life fates for wood (kg CO2eq/kg wood)



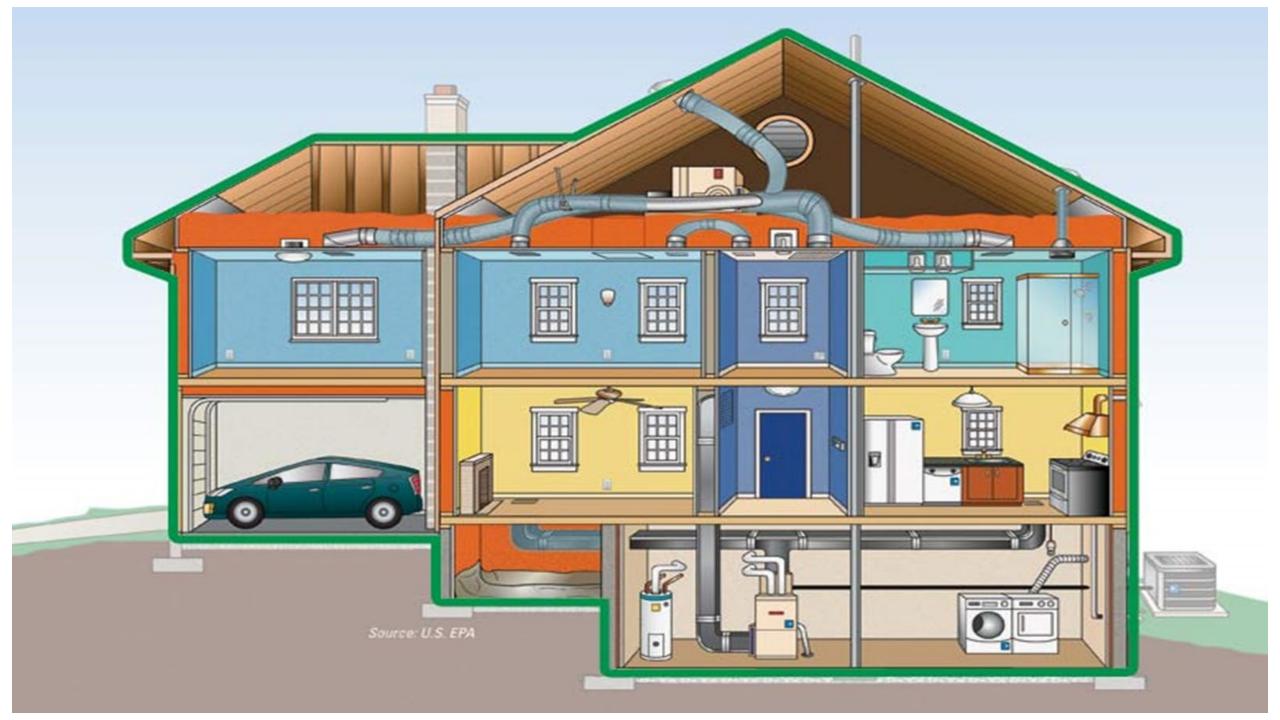


The butterfly economy: regenerative by design.



MINIMIZE LOST MATTER AND HEAT







Pilot Deconstruction Incentive Program

Summary

- \$4,000 per deconstruction project
- Must use approved deconstruction contractor
- Residential, wood-framed buildings are eligible
- Pilot program started late 2022
- Also, expedited electrical disconnects







Deconstruction Incentive Program

- Started November 2022
- 21 applications so far
- Year built: average is 1917, oldest built in 1900, newest built in 1940
- An average of 5 tons of wood recovered from each house, which were avg. 1,700 sq feet
- We are hearing that the incentive is working! It's making deconstruction more appealing
- Anticipate expanding to commercial buildings





















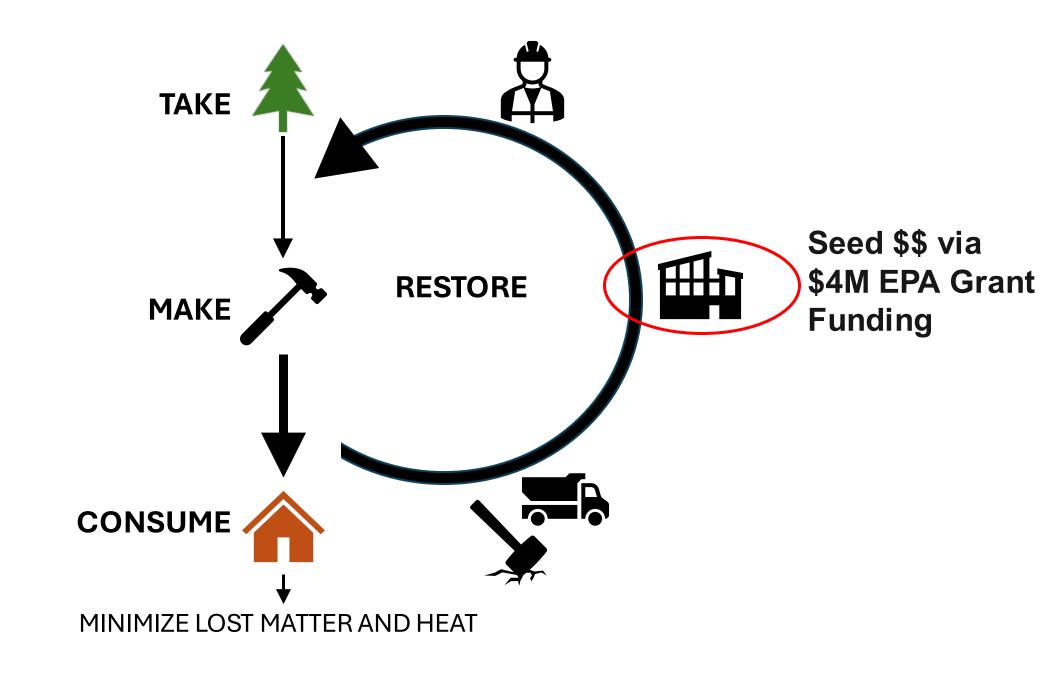












EPA Solid Waste Infrastructure (SWIFR) for Recycling Grant



EPA awarded \$4,000,000 to City of Seattle for 3-year term



Will support the establishment of a salvaged wood warehouse



Warehouse will receive wood salvaged from deconstructed homes and remodeling projects



Ideally accept new construction scrap as well



Missing component in our local circular wood economy







News Podcasts RadioActive Support

Schedule

// NEWS & STORIES / LOCAL

'Good bones' from old homes help build Seattle's future





eattle Tim	es	Pacific NW Magazine												Newsletters	Log In
LOCAL	BIZ	NATION	SPORTS	ENTERT	AINMENT	LIFE	HOMES	MES	OPINION		THE TICKET	JOBS	EXPLORE	✓ All Sections	
		Taste	Gather	Cheers!	GROW	Now &	Then	Sea	ttle Sketcher	0,	Reader's Lens	Vintage	Pacific NW		

gazine

le, King County initiatives build a better approach to ruction waste

7:00 am | Updated Nov. 17, 2023 at 7:00 am



Ecology Local Solid Waste Funding Assistance (LSWFA) Grant



Funding \$1.3M in projects this cycle (mid-2023 through mid-2025)



For the first time, SPU is using funds to support new work: 1) piloting furniture reuse events at the transfer stations and 2) supporting an "Urban Machine"



Urban Machine is a robotic piece of equipment that removes hardware (nails, screws, and staples) from wood



The Urban Machine will be located and used at the Salvaged Lumber Warehouse

Urban Machine



Where we will focus now...

- Supporting current contractors and training more
- Ensuring supply to the warehouse from a potential deconstruction ordinance
- Building demand for salvaged lumber







How to Build a Local Circular Wood Economy

What's Seattle's foundation?

- Values residents have a shared ethic of environmentalism
- High construction activity
- City of Seattle has a zero-waste vision
- Building salvage stores
- Deconstruction contractors that have operated here for 30 years

What do we still need in our toolbox?

- More deconstruction contractors
- Warehouse where processing, sorting, and sales can occur
- Ordinance to require deconstruction
- Increased demand and awareness from builders
- Political feasibility



Thank you!

Katie Kennedy Katie.kennedy@seattle.gov



HB 1282 Buy Clean & Buy Fair Washington

Hanna Waterstrat Department of Commerce State Efficiency & Environmental Performance (SEEP)





Buy Clean and Buy Fair Washington

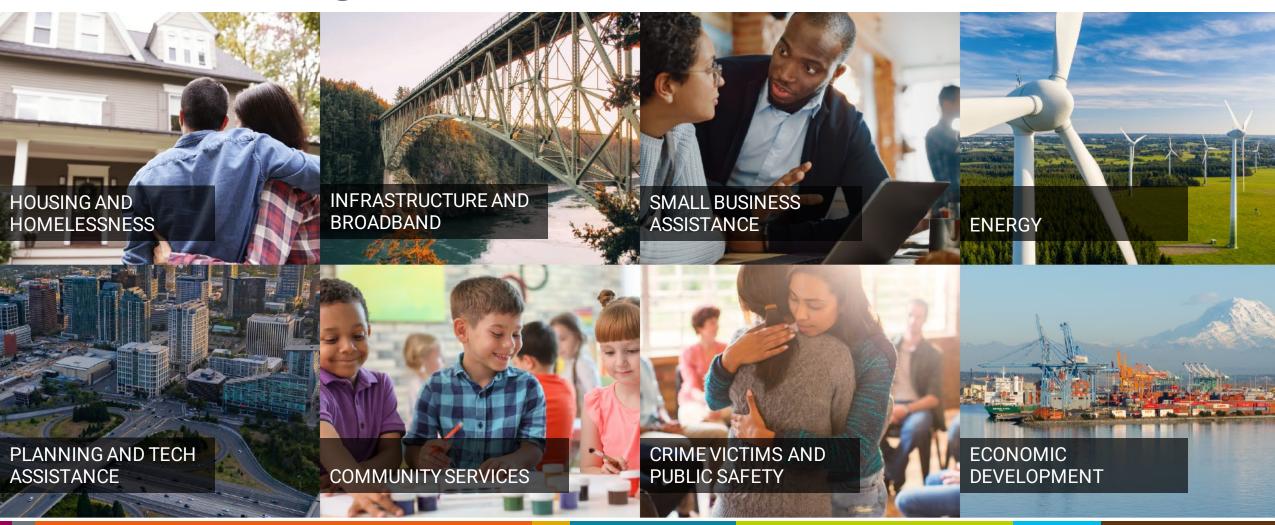
HB 1282

Hanna Waterstrat
SEEP DIRECTOR

07/10/2024



We strengthen communities



Buy Clean and Buy Fair

- Buy Clean: Leveraging Environmental Product Declarations (EPDs) to report on the environmental impacts associated with the production of concrete, steel and wood used in state building construction projects.
- Buy Fair: Reporting on working conditions at manufacturing facilities to ensure that the transition to low-carbon manufacturing creates high-road jobs that support communities throughout our state.



Figure 1. Embodied carbon (yellow) and operational carbon (blue) across the key life cycle stages of a building.

Reporting requirements

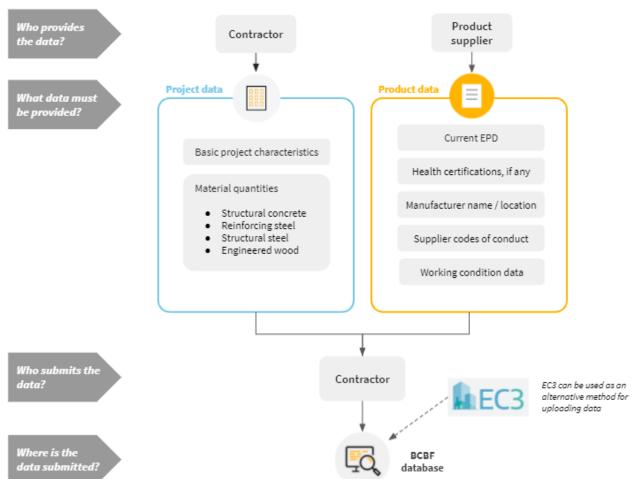
Reporting:

- Type III supply chain-specific environmental product declarations (EPDs) and workforce data
- Covered products: structural concrete, reinforcing steel, structural steel, engineered wood
- Covered projects: new state agency and higher education building construction projects and major renovations over 50,000 square feet (the first two years of reporting are limited to projects over 100,000 SF)
- Includes a provision that would suspend reporting requirements for specific projects where these requirements would cause significant cost increases or delays

Other provisions

- Centralized reporting database
- Technical working group
 - Includes state agencies, manufacturing and construction industry representatives, the University of Washington, environmental groups, Office of Minority & Women's Business Enterprises (OMWBE)-certified businesses, and others
- Financial assistance for EPD generation at small and diverseowned businesses
 - Not funded—but stay tuned for updates about federal funding opportunities (EPA announcement expected mid-July)

Reporting requirements



- Basic project information
- Product quantity
- Current EPD
- Health product declarations*
- Manufacturer name/location
- Workforce data
- Supplier codes of conduct*

*If any

Implementing Buy Clean and Buy Fair

- Climate Commitment Act funding
 - Budget bill delays expenditures until after January 1, 2025
 - Likely to delay implementation
- Next steps
 - Planning activities staff position descriptions, implementation work plan, internal coordination
 - Laying groundwork for the technical work group
 - Responsible for two legislative reports
 - Policy and program recommendations
 - Low-carbon materials market development
 - Membership includes design & construction experts, manufacturing industry representatives, state agencies, labor unions, environmental groups, and other partners

Related work

- Model specifications and educational resources
 - Funding from US Climate Alliance
 - Partner: Carbon Leadership Forum
 - Specifications & training videos should be available in September or October
- Federal-state Buy Clean Partnership
 - Collaboration between states and federal agencies including the White House, FHWA, GSA, FEMA, HUD, and others
- Pacific Coast Collaborative Low-carbon Construction Task Force
 - Collaboration with west coast partners & jurisdictions

PCC Low-Carbon Construction Task Force

- Vision and Action Plan
 - Pathway 1: Build regional demand for low-carbon construction
 - Increase awareness of and access to salvaged and reused construction materials
 - Support deconstruction ordinances and bylaws and/or salvage material minimums to limit demolition and encourage reuse of materials
 - Pathway 2: Encourage growth of regional supply of low-carbon construction materials and services
 - Develop a guide highlighting available products that are salvaged and reused within the region
 - Support regional infrastructure for reuse of building and infrastructure materials
 - Pathway 3: Build strategic partnerships

Q&A and discussion

 Additional embodied carbon resources can be found at carbonleadershipforum.org

 Feedback encouraged and collaboration is welcome!





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Wrap Up



Tasks from today:

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



Next meeting:

- Wednesday, October 9th, 2024
- Zoom: 9 am to 11:30 am (Pacific)



Tours:

Jefferson County facilities (time, date to be determined)



NextCycle Washington:

- Pitch showcase Monday September 23rd, 2024
- Seattle Public Library Central/Downtown (in-person only)



Thank you to our speakers and everyone that attended!

See you all at the October 9th board meeting!

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