



# Deconstruction Program

City of Portland, Oregon

Shawn Wood

*Construction Waste Specialist*



Bureau of Planning and Sustainability

Innovation. Collaboration. Practical Solutions.





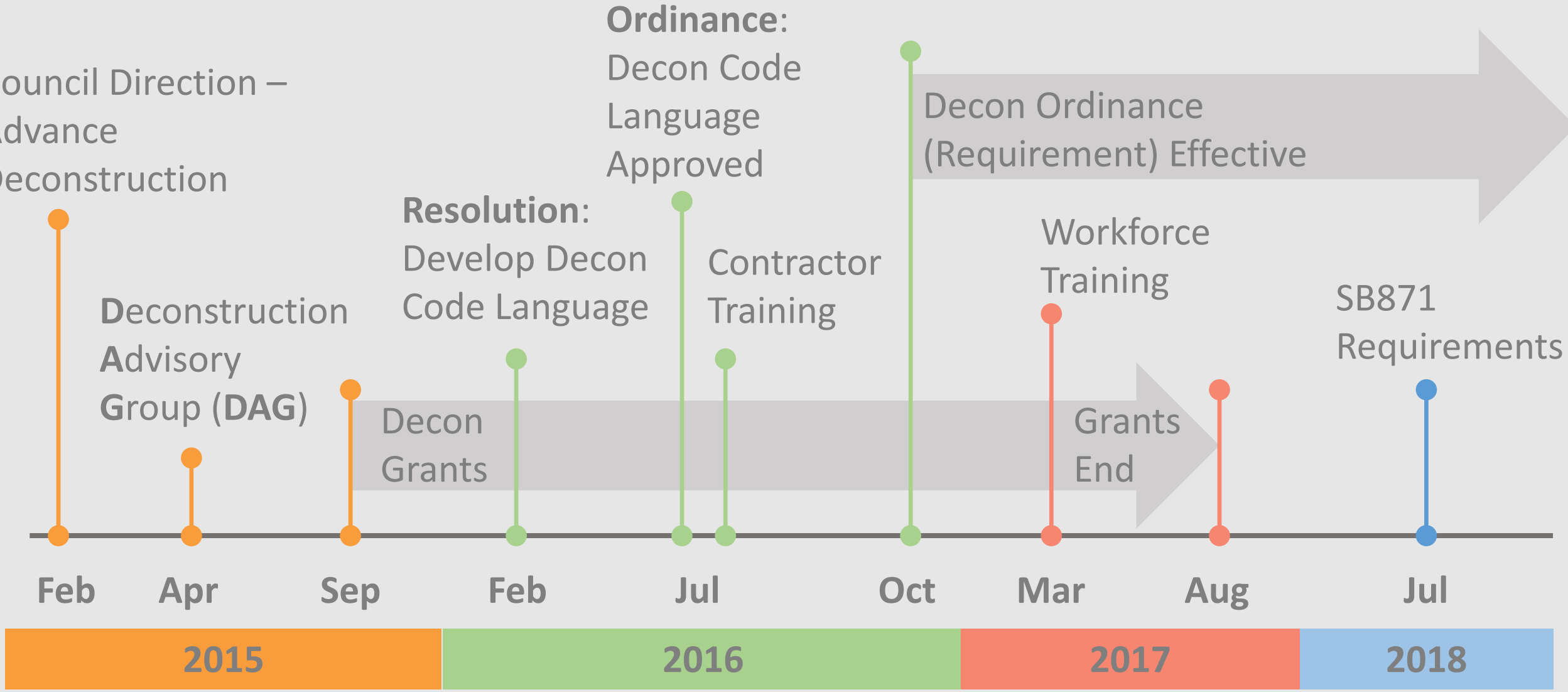
# Presentation

1. Overview/  
Background
2. Implementation
3. Outcomes

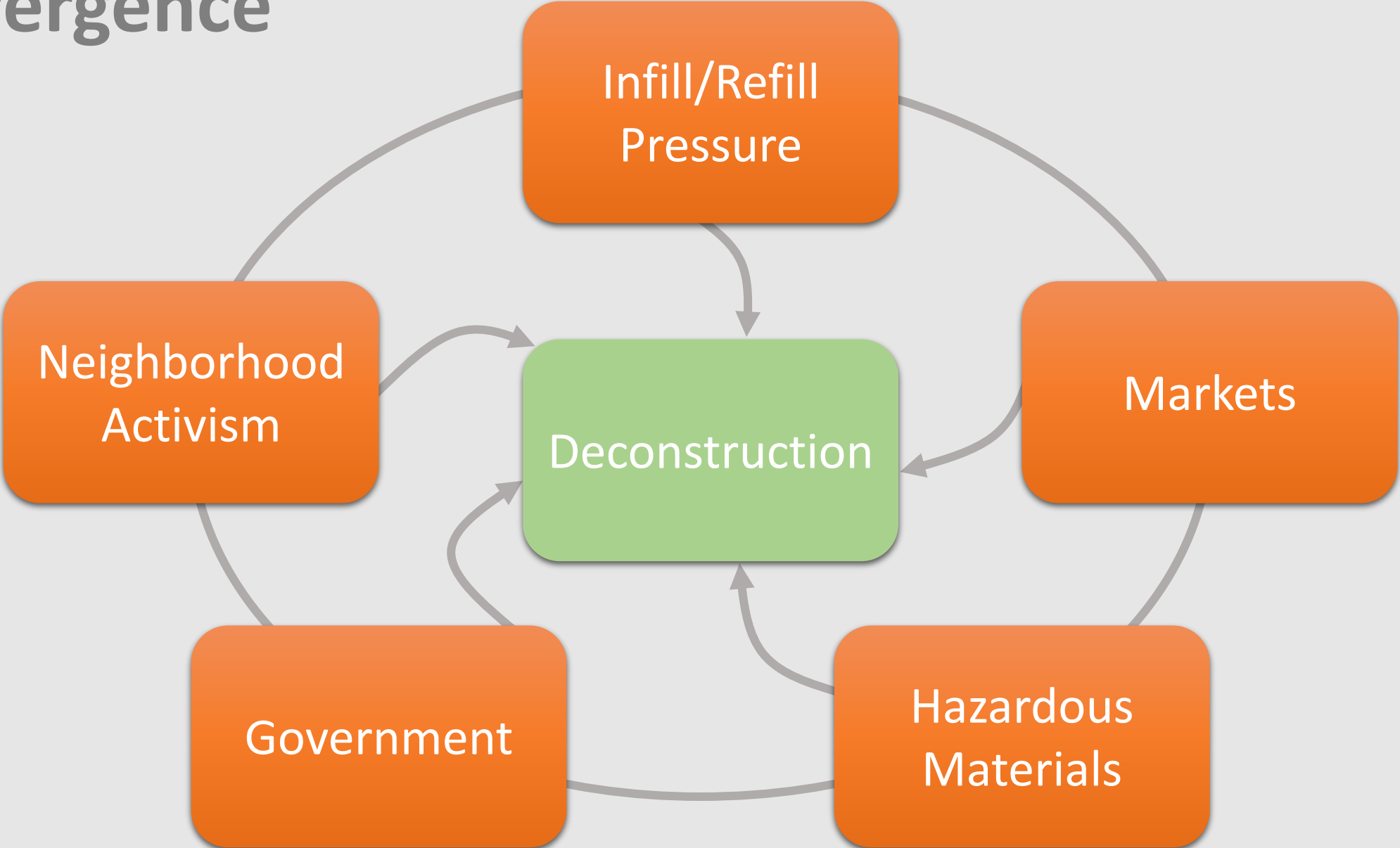


# Deconstruction Program Timeline

Council Direction –  
Advance  
Deconstruction



# Convergence



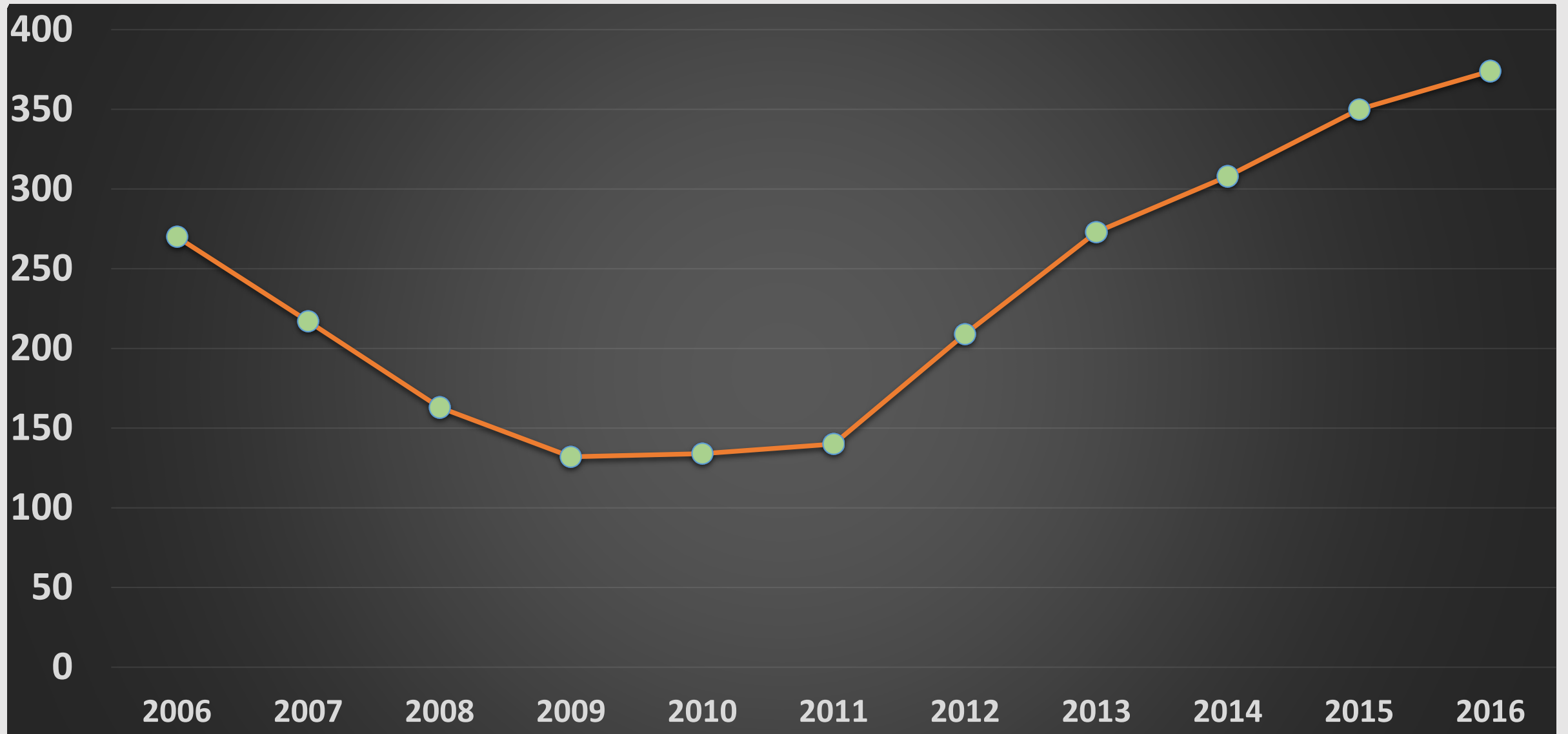


# Infill/Refill

- Urban Growth Boundary
- Developable Land
- Livability
- Desirability



# Single-Family Demolition Applications (2006-2016)





# Neighborhood Concerns





**STOP**  
**DEMOLISHING**  
**PORTLAND**  
STOPDEMOLISHINGPORTLAND.ORG



United Neighborhoods for Reform  
Working toward development that benefits all Portlanders



**STOP**  
**the Demolition**  
**of Portland Homes**



THE PORTLAND CHRONICLE  
EVERETT Custom Homes Plans 1908  
Montavilla Demolition



# Demolition Concerns

## Deconstruction

Waste/Carbon Emissions



Hazardous Materials

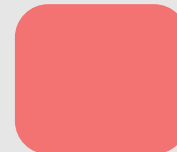


Preservation

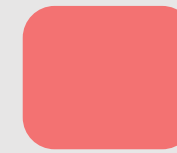


Preserve materials

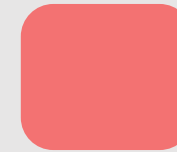
Affordability



Compatibility



Demo Delay/Notification



# Hazardous Materials



- Lead paint /asbestos concerns
- Glass manufacturers

## Deconstruction:

- Less dust
- Increased likelihood of discovery
- Further abatement



# Markets (Supply)

- Established retail marketplaces



The ReBuilding Center



Habitat ReStore



Salvage Works

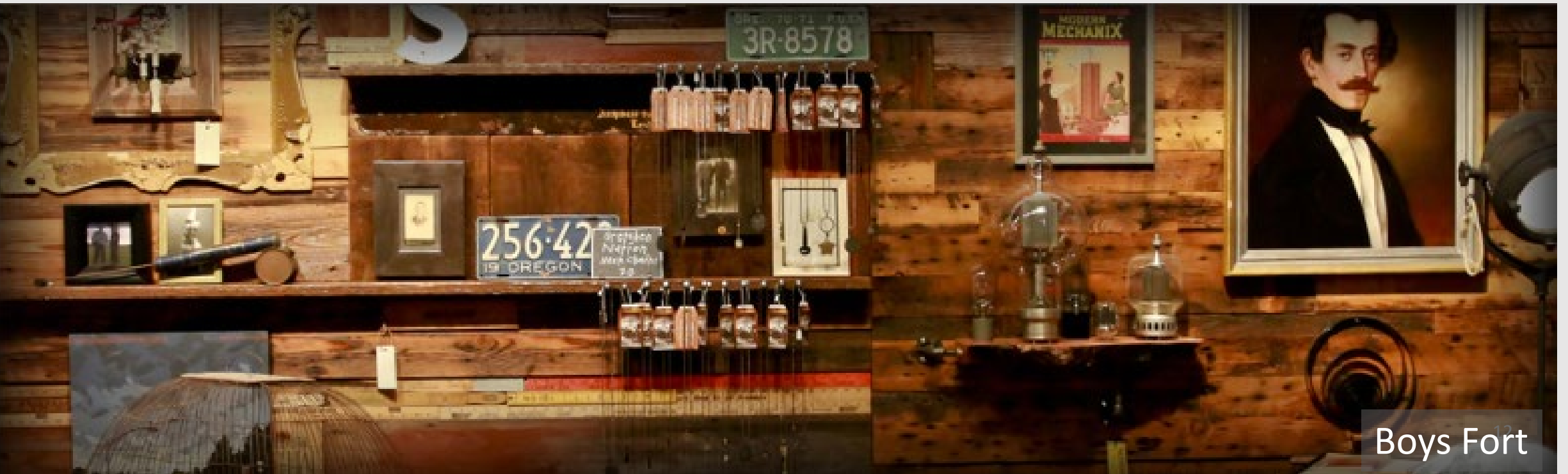


# Markets (Demand)

- Strong salvage/  
DIY ethic
- Design aesthetic



Keen Garage



Boys Fort



# Reuse



Restaurants



Bars



Furniture



# Markets

- Wood waste (hog fuel)



WestRock Paper Mill, Newberg, OR



# Deconstruction Advisory Group (April 2015)

- Builders/Developers/Demo Contractors
- Neighborhood Groups
- Development Committee
- Historic Preservation
- Salvage/Deconstruction
  - For-profit; Non-profit; Retailers
- Recycling Industry
- Permitting Staff
- Metro Staff



# Deconstruction Grants (September 2015)

## Removing a house?

Salvage valuable material for reuse through deconstruction

Grant funds are available for deconstruction projects

- Applications accepted beginning Sept. 8, 2015.
- Visit [www.ExploreDecon.com](http://www.ExploreDecon.com) for application instructions.



**Deconstruction benefits:**

- Our community.
- Our environment.
- Our economy.

[www.ExploreDecon.com](http://www.ExploreDecon.com)



Bureau of Planning and Sustainability  
Innovation, Collaboration, Practical Solutions.

City of Portland, Oregon  
Charlie Hales, Mayor • Susan Anderson, Director



- Voluntary Incentive Program as first phase
- Goals: Learning, Promotion, Innovation
- \$3,000 per project

## Outcomes

- 25 grants awarded
- Proving ground for deconstruction ordinance elements





# Resolution (February 2016)

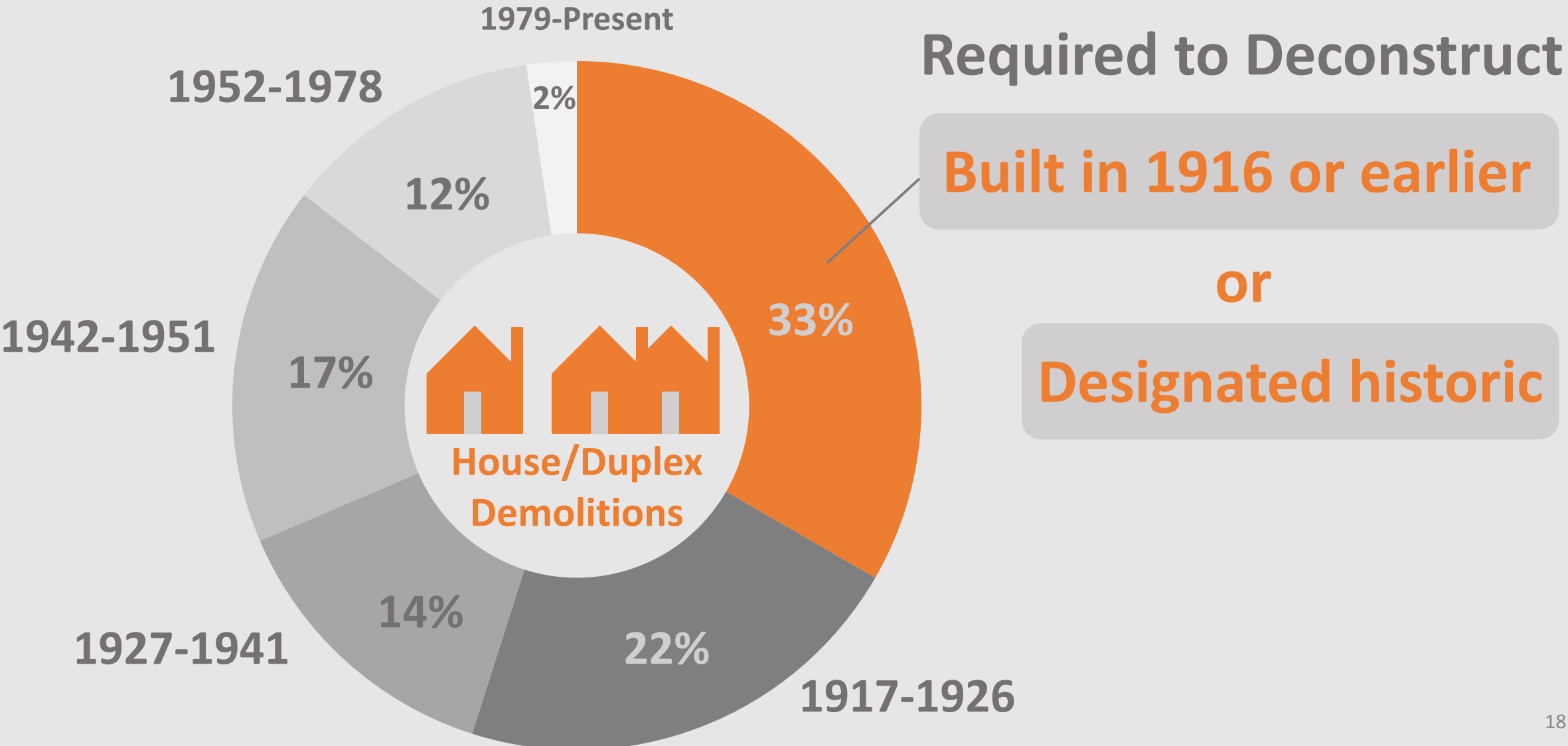
## Develop code language that:

- Requires full deconstruction for house or duplex) if:
  - The structure was built in 1916 or earlier; or
  - The structure is a designated historic resource.
- Provides exemptions

## Ensure training opportunities:

- Prioritizing participation from people of color, women, and other historically underrepresented groups in the field of construction

# Demo Permits Pre Ordinance (Year Built)



# Deconstruction Ordinance (July 2016)

Effective Oct 31, 2016 deconstruction required for house/duplex if:

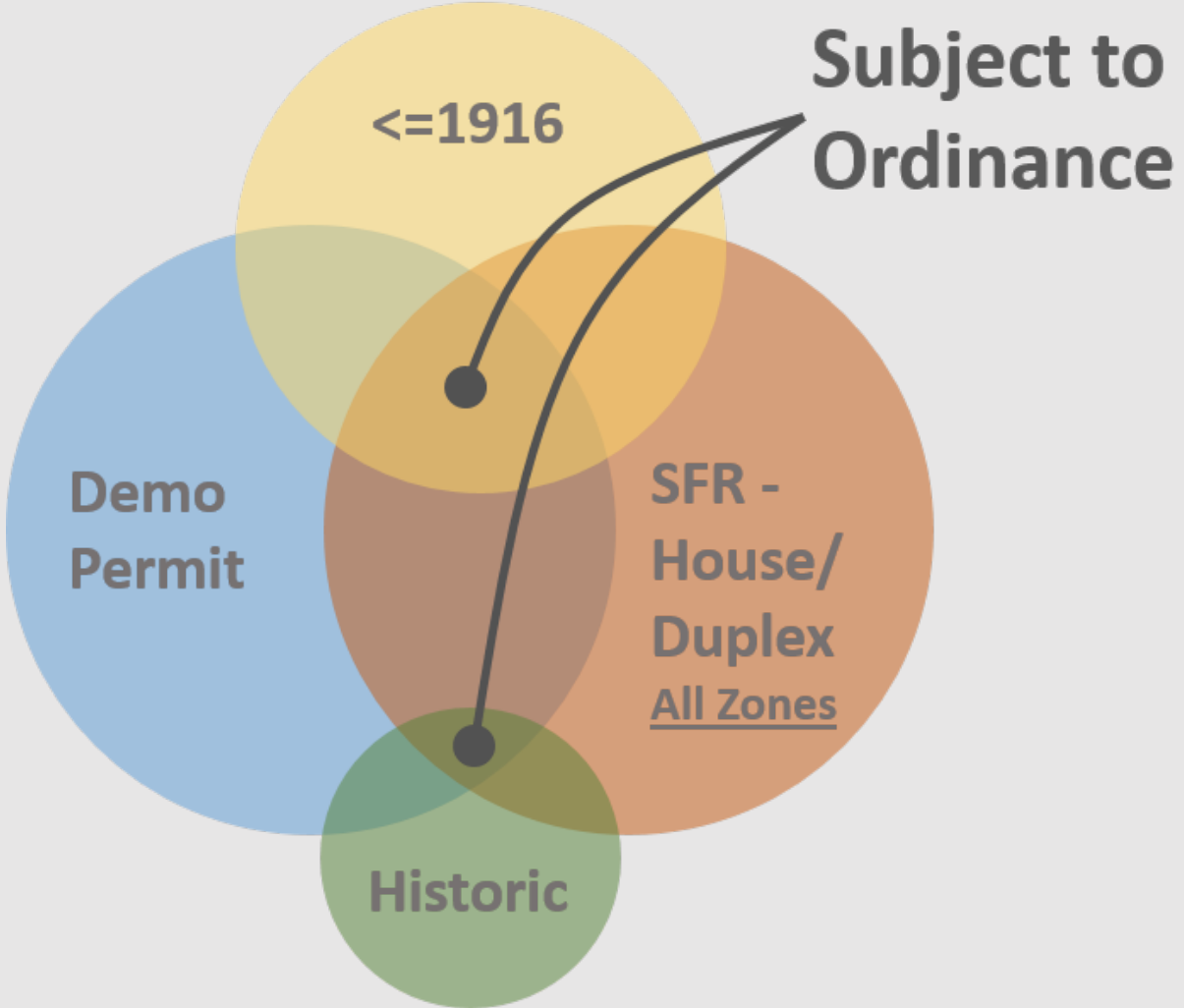
- The structure was built in 1916 or earlier; or
- The structure is a designated historic resource.

Reliance on Certified Deconstruction Contractors





# Deconstruction Ordinance



# Concerns with Required Deconstruction

Group	Concern	Solution
Developers	Cost	Competition, Grants
Developers	Time	Competition
Developers	Availability of Contractors	Contractor/Workforce Training
Developers, Deconstructionists	Not all houses worthy	Exemptions
Neighborhoods	Maximize Salvage	Certified Decon Contractors
Neighborhoods	Avoid greenwashing	Certified Decon Contractors
Developers, Deconstructionists	Flooding material market	Year-Built Threshold
Deconstructionists	Workforce/hiring	Workforce Training

# Implementation



# Implementation

## Support Industry

- Certifying Deconstruction Contractors
- Training Contractors
- Training Workforce

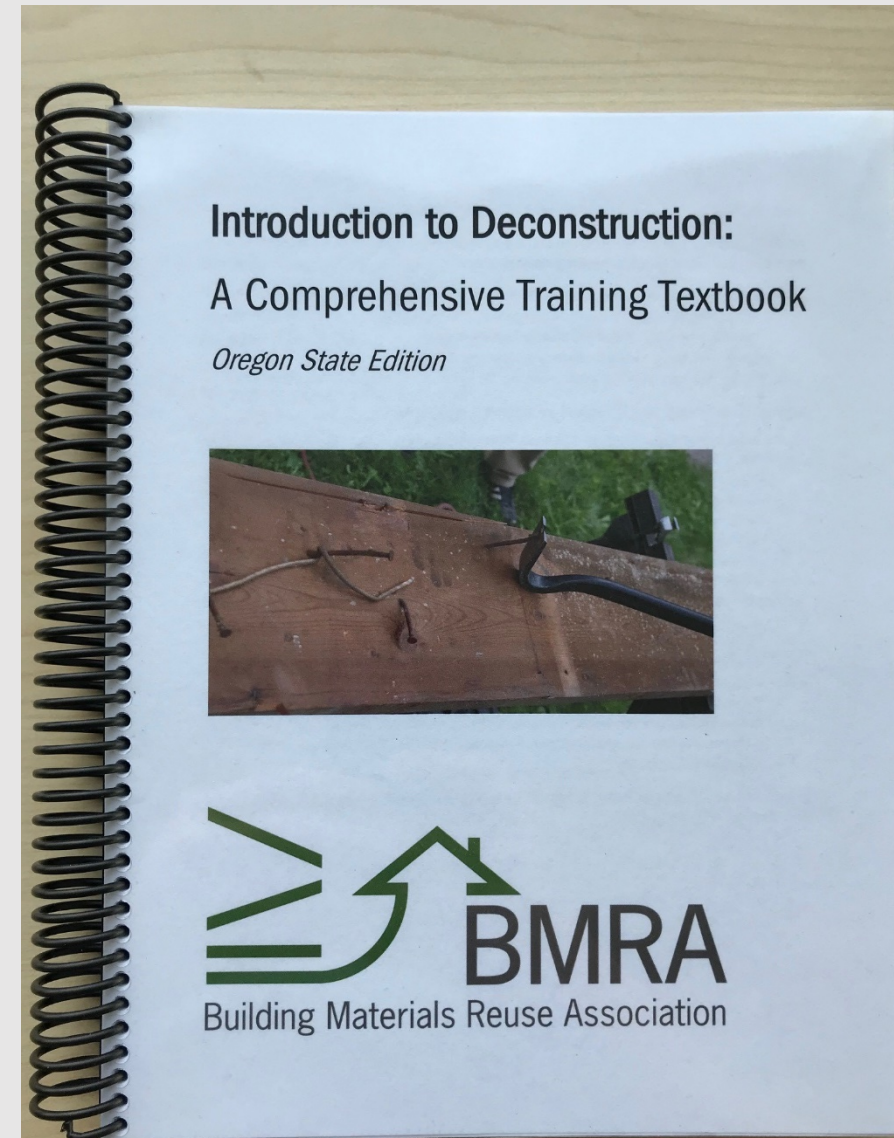
## Programmatic

- Permit Process/Procedures
- Exemptions
- Pre-Deconstruction Form
- Site Signage
- Post-Deconstruction Form (Receipts)
- Inspections/Enforcement



# Certified Deconstruction Contractors

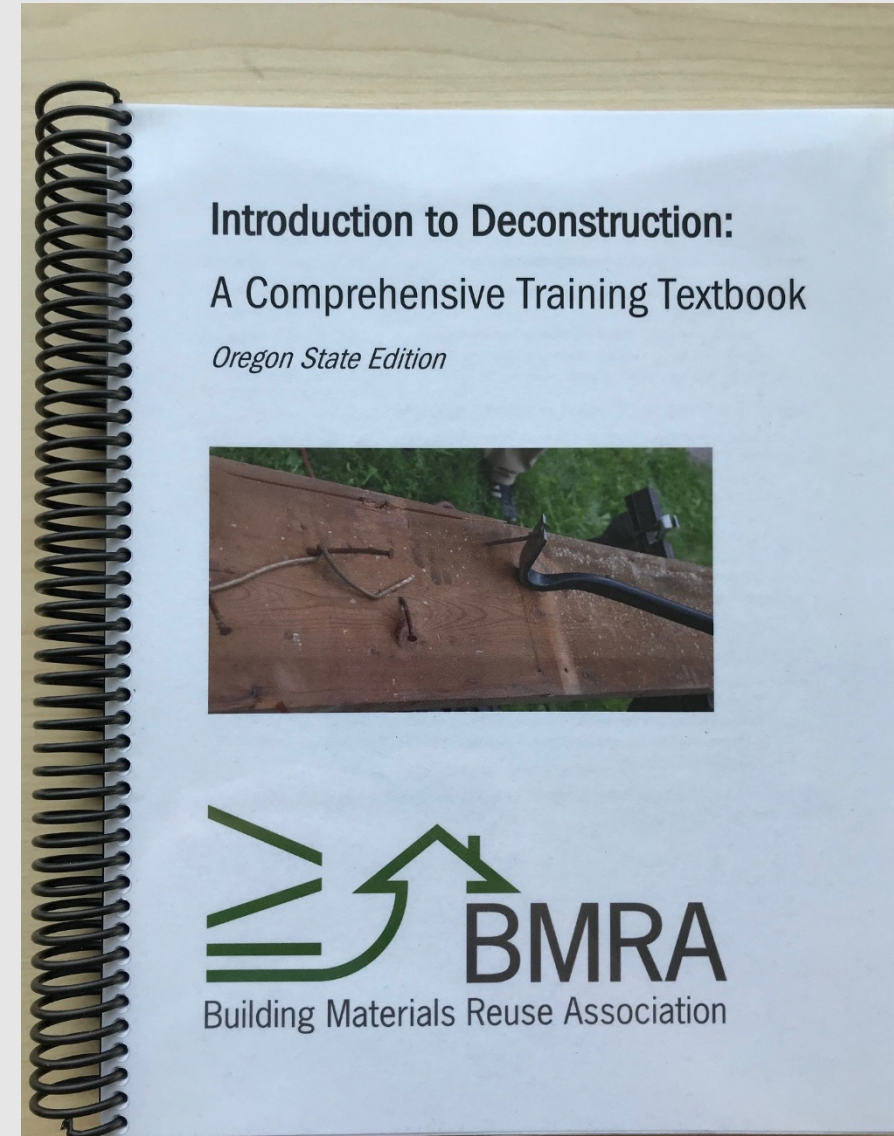
- The BMRA is the recognized curriculum and certifier of contractors
- Initial certification requirements:
  - Written Exam (online)
  - Skills Assessment (in the field with BMRA proctor)
  - Document 500 hours of experience (any core curriculum areas)
- City maintains online list of currently-certified contractors





# Certified Deconstruction Contractors

- Revised Certification requirements:
  - Written Exam (online)
  - Skills Assessment (in the field with BMRA proctor)
  - Document 2,000 hours of experience (specific amounts in all core curriculum areas)
  - 3-day BMRA contractor training
  - Lead-based paint (RRP) certification
  - Asbestos Inspector certification





# Contractor Training (Pre-Ordinance)

- July 2016
- 3-day training (BMRA)
- 16 participants
- 12 different companies
- Skills assessment





# Workforce Development (Post Ordinance)

- March 2017
- 15 students
- Priority Population
- 12 day-training (BMRA)





# Demolition Permit Process





# Exemptions

- House moves
- City-mandated demo

Automatic  
Exemption

- Hazardous
  - Structural/toxic
- Limited reuse
  - >50% framing not suitable for reuse

Exemption  
Request



# Pre-Deconstruction Form

- Part of demo permit application
- Web-based form (office/field)
- Anticipated schedule
- Accept posting site
- Accept maintaining/submitting receipts
- Heavy machinery? How?
- Identifies materials to be salvaged
- Indicates why certain materials won't be salvaged
- Only certified contractors have access (password protected)

Pre-Deconstruction Application Post-D

7/11/2017 BDS Permit# 17-200237

**Lovett Deconstruction, Inc.**

---

**4703 NE 28TH AVE**

Site Property ID# R155741  
Primary Application ID# 170711-144-3  
Pre-Deconstruction ID# 170711-90-1  
Post-Deconstruction ID# 171009-101-2  
Submitted by: Scott Yelton

Timeline: 8/21/2017 - 9/8/2017  
Pre Application Status: **approved**  
Post Application Status: **approved**

CCB# 173875

Documentation: **Yes** Signs Posted: **Yes**  
Heavy Machinery: **No**

[VIEW PROPERTY IN PORTLANDMAPS](#)

Material	Salvaged?	Salvage Detail
Appliances	Yes	
Cabinets	Yes	
Doors	Yes	
Hardware	Yes	
Lighting	Yes	

Oregon Metro, State of



# Site Signage

- Site posted on first day of active deconstruction
- Promotes deconstruction
- Provides contact info for questions/concerns
- Helps with compliance





# Inspections

- Random during deconstruction work
- Heavy machinery?
- What's in dropbox?
- Site posted with sign?






# Post-Deconstruction Form

- What was salvaged and if not why?
  - Condition of material
  - Not present in structure
  - Presence of hazmat
- Upload receipts
  - Disposal/Recycling
  - Donation
  - Sale
- Incentive to salvage = reduced disposal cost

Mirrors	No	Condition of material	No	Condition of material
Roofing	No	Condition of material	No	Condition of material
Sinks	Yes		Yes	
Toilets	Yes		Yes	
Tubs	Yes		No	Condition of material
Windows	Yes		Yes	
Wood flooring	Yes		No	Not present in structure



P.O. Box 22069  
Portland, OR 97269-2069  
(503) 794-8212  
www.heiberggarbage.com

DER LOVETT  
PO BOX 42441  
PORTLAND OR 97242

*Rust*

**Account Number** 929226  
**Service Address** 4703 NE 28TH AVE  
**Reference**  
**Closing Date** 9/26/17  
**Amount Due** 2368.90  
**Payment Due Date** October 15, 2017

Date	Quantity	Description	Charges	Payments & Credits
		PREVIOUS BALANCE	0.00	
9/07/17	1.00	30 YD DELIVERY	N/C	
9/08/17	1.00	30 YD DELIVERY	N/C	
9/11/17	1.00	30 YD PICK-UP	140.00	

SALVAGE WORKS

2024 N. Argyle St. • Portland, OR 97217  
503.899.0052 • www.salvageworkspdx.com

PURCHASE RECEIPT

Date: 9-20-17

Salvage Works agrees to buy the following items as listed. Buyer signature below indicates agreement of sale and receipt of payment.

QTY	DESCRIPTION	OFFER PRICE EACH	OFFER PRICE	CHECK #
936	LF 1x6 RC			
6	LF 1x6 Shp			
36	LF 1x8 RC			
6	LF 1x8 Shp			



# Outcomes

# Good Stuff (First 2 Years)

SUBJECT TO  
ORDINANCE



X 168

(1/3 of demos)

REUSE

1.8m



lbs



# 12 Certified Deconstruction Contractors



Northwest Deconstruction Specialists







# Seven Houses | Seven Panels





# Ordinance-Related Lumber



# Reuse (Japanese Retailer Muji)



*Tribune Photo: Jonathan House*

“In planning a move into the Pacific Northwest, the retailer considered opening a store in **Seattle**, Kobuchi said. But it settled on **Portland**, in large part because Muji's leadership felt the **Rose City's commitment to recycling and sustainability was more in tune with the retailer's way of doing business.**

When it came to interior design of its Portland location, the retailer and the project architect, a Japanese firm called Super Potato that Rainey says has worked on high-profile hotel lobbies and retail stores, continued to **respect the local focus.**

The design team wanted to **embrace Oregon and what the state represents**, Rainey said, so more than **204 reclaimed old-growth timbers were used on the interior design.** The timber, which was **locally sourced**, required some extra effort with regard to construction.” - Nov 23, 2018, Business Tribune



# Research

- Oregon State University
- Cross-Laminated Timber (CLT)
- Salvage lumber from 3 Portland companies
- Strength testing/grading of 2x4s
- Panel assembly with mixes including virgin and MDF
- Panel testing





# Research

## Oregon Department of Environmental Quality

- Evaluation of carbon and energy impacts from deconstructed homes

## Major Findings

- Carbon benefit for deconstruction double that of demolition
- Energy benefit for deconstruction 20% lower than demolition (wood to energy offsets natural gas use)
- Transport of materials and workers, and equipment use had little effect on total results – further transport of materials could be justified
- Salvage quantities tied to contractors as opposed to house size
- Wood (softwood lumber) is majority of salvage weight





# Key Ingredients/Advice

- Sponsorship from the top (City Council/Mayor)
- Diverse group of stakeholders
- Understand all concerns and address them
- Community support
- Decon in guiding documents (Climate Action Plan, Comp Plan, etc.)
- Know why you are behind promoting decon (diversion, carbon, hazmat)
- Ease into regulations (grants first?)
- Certify contractors – quality control
- Place some requirements in admin rules instead of code (e.g., contractor certs) so they can be updated easily
- Market demand for materials (people need to buy it)
- Outlets for materials (both non-profit and for-profit)
- Support contractors and workforce





# Contact Information



**Shawn Wood**  
City of Portland  
[Shawn.Wood@portlandoregon.gov](mailto:Shawn.Wood@portlandoregon.gov)  
503-823-5468