

# Deconstruction Program Six-Month Status Report



**Portland is the first city in country to ensure valuable materials are salvaged for reuse using deconstruction.**

On July 6, 2016, Portland City Council adopted an ordinance to require projects seeking a demolition permit of a house or duplex to fully deconstruct that structure if it was built in 1916 or earlier or is a designated historic resource. The year 1916 typically represents 33 percent of house demolitions in Portland and was chosen as a threshold due to the quality of material, ease of deconstruction, and ability for the deconstruction and reuse industry to adapt. With Council's unanimous approval of that ordinance, Portland became the first city in the country to ensure that valuable materials from demolished houses and duplexes are salvaged for reuse instead of crushed and landfilled. The requirement went into effect on Oct. 31, 2016.

The ordinance directs the Bureau of Planning and Sustainability to report to City Council within the first six months of the program's effective date, to address status and make recommendations on whether to modify, maintain, or expand the program. The directive further establishes a goal of including houses and duplexes built before 1941 by the year 2019. This report provides an overview of the program to date and recommendations for next steps, followed by more detailed supporting information.

May 2017

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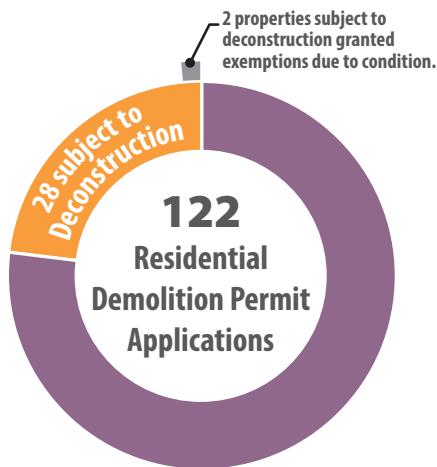
City of Portland, Oregon  
Ted Wheeler, Mayor • Susan Anderson, Director





# Overview and Recommendations

## Demolition permit activity for houses and duplexes since effective date of the deconstruction ordinance, October 31, 2016.



## Permit activity

Since the effective date of the ordinance, there have been 122 house and duplex demolition permit applications of which 28 were subject to the deconstruction requirements. Two projects requested and were granted an exemption due to structure conditions that posed safety concerns and limited reuse potential. Bureau of Planning and Sustainability staff have conducted random inspections on many of the permitted projects while they were being deconstructed. Staff will continue to conduct random inspections moving forward. Inspections have been an opportunity to visit with contractors in the field, answer questions and document progress associated with the ordinance. No infractions were observed during any of the site visits/inspections.

## State of the industry

A key component of the ordinance is that all required deconstruction must be performed by a Certified Deconstruction Contractor. This ensures that high-quality, safe, and effective deconstruction and salvage is accomplished on sites covered by the ordinance. Certification is done through a third party and requires a hands-on skills assessment, a written exam, and documenting 500 hours of experience. Currently 12 different companies are certified to deconstruct houses covered by the new requirements.

Several new deconstruction-only companies have been formed in response to the deconstruction ordinance. Two new salvage-lumber only warehouses are either open or in development. Local non-profit used building material organizations are opening several new stores and expanding their deconstruction workforce.

## Contractor training

The Bureau of Planning and Sustainability, Earth Advantage and the Building Material Reuse Association (BMRA) hosted a 3-day hands-on training for contractors in late July 2016, following adoption of the ordinance. The training was an opportunity for construction contractors considering becoming certified to receive training on an active deconstruction site. Sixteen individuals representing twelve different companies attended the training. A majority of the participants were members of the City of Portland's Prime Contractor Development Program. Other participants included existing contractors specializing in deconstruction.

## Workforce training

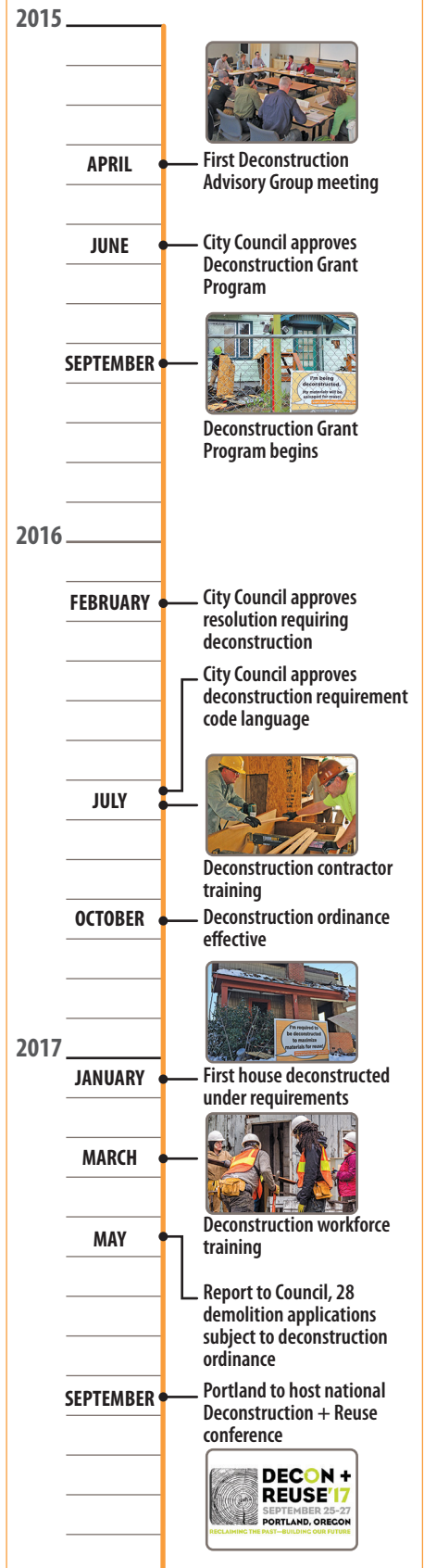
The existing Certified Deconstruction Contractors have employees dedicated to working on deconstruction projects, but as seasonal construction begins to pick up as summer approaches, some contractors will need to hire additional crew. In order to address this demand for new hires and provide meaningful employment opportunities, BPS worked collaboratively with local pre-apprenticeship programs and community groups to recruit students for a free 12-day hands-on training in March. The workforce training took place at a series of active deconstruction sites. During the training, 15 diverse students, more than half women, were in the field to help prepare them for work on a deconstruction site. A meet and greet was also held on site at the end of the training so students could get to know the Certified Deconstruction Contractors that may be interested in hiring.

## Recommendations

Demand for salvaged material remains strong in Portland and salvage retailers are not having difficulty moving material through their stores. A combination of existing and planned retail facilities, an expanded deconstruction workforce, and a smooth permit review process all indicate a successful program roll out. The Bureau of Planning and Sustainability will monitor the program for another six months and return to Council at the end of October or early November. This will allow additional time to better understand the full impact of the ordinance and ensure the industry remains sustainable.

If the deconstruction program continues to be successful, BPS will prepare an ordinance for Council consideration that would expand the year-built threshold for the ordinance from 1916 to 1926 effective January 1, 2018.

## Deconstruction Program



**1. DECONSTRUCTION**



Photo Credit: The Rebuilding Center

**2. DENAILING**



Photo Credit: Salvage Works

**3. SALVAGED**



Photo Credit: Lovett Deconstruction

# Evolution of Material

**4. SELECTION**



Photo Credit: Salvage Works

**5. FABRICATION**



Photo Credit: Salvage Works

**6. RESULT**



Photo Credit: Salvage Works



# Supporting Information

## Program elements

### Code language

The primary code language was adopted by ordinance on July 6, 2016 and is located in Chapter 17.106 of the Code of the City of Portland. Administrative Rules guiding procedures and forms related to the ordinance were approved by the Director of the Bureau of Planning and Sustainability on October 31, 2016. A public hearing for the Administrative Rules was held on October 5, 2016.

### Online forms

#### Pre-deconstruction form

Certified Deconstruction Contractors are required to submit a Pre-Deconstruction Form before a demolition permit can be issued. This form is located online and can be accessed only by Certified Deconstruction Contractors using a login and password. The Pre-Deconstruction Form includes:

- Materials intended for salvage.
- Materials not intended for salvage (and reason why).
- Use of mechanical equipment (explanation of how it will be used).
- Expected dates of active deconstruction.

#### Post-deconstruction form

A Post-Deconstruction Form is required before a demolition permit can receive final inspection. The Post-Deconstruction Form is also submitted by the Certified Deconstruction Contractor through secure login. The Post-Deconstruction Form includes:

- Materials actually salvaged.
- Materials not salvaged (and reason why).
- Copies of receipts for materials (sale, donation, recycle).

# Permit activity

## Permit status

Table 1 below provides an overview of the status of all the permits subject to deconstruction. The permits are in various stages ranging from Under Review to Final (completed). Older permits are farther along in the process, while more recent permits are still being processed. Adding further complexity is the fact that most permits are subject to a building code 35-day delay or the longer 120-day zoning code delay for historic resources. Currently about 25 percent of projects subject to deconstruction have been completed.

**Table 1: Demolition permits subject to deconstruction requirements**

	Site Address	Year Built	H Historic	Application Date	Permit Status	Pre-Decon Form*	Post-Decon Form**	Site Visit
1	527 SE Spokane St	1908		10/31/16	Issued	●	●	
2	6821 N Van Houten Ave	1910		11/1/16	Inspection	●	●	●
3	1518 N Willamette Blvd	1904	H	11/2/16	Final	EXEMPT	EXEMPT	●
4	3604 SE Holgate Blvd	1885		11/14/16	Issued	●	●	●
5	3322 SE Cesar E Chavez Blvd	1907		11/15/16	Issued	●	●	●
6	2720 N Farragut St	1912		11/17/16	Final	●	●	●
7	2203 NE Davis St	1890		11/18/16	Issued	●		
8	914 NE 72nd Ave	1890		11/22/16	Final	●	●	
9	4702 NE 26th Ave	1906		11/29/16	Issued	●	●	●
10	1644 N Emerson St	1925	H	1/4/17	Under Review			
11	5007 SE 38th Ave	1916		1/5/17	Issued	●		
12	7638 SW 36th Ave	1915	H	1/9/17	Issued	●		
13	121 N Beech St	1900		1/10/17	Approved to Issue	●		
14	5105 NE 22nd Ave	1907		1/24/17	Under Review	●		
15	10425 N Oswego Ave	1927	H	2/1/17	Under Review			
16	4731 SE 36th Pl	1880	H	2/1/17	Under Review			
17	9027 N Tyler Ave	1916		2/3/17	Inspection	EXEMPT	EXEMPT	●
18	6344 SE 87th Ave	1907		2/6/17	Inspection	●	●	●
19	1710 SE Salmon St	1900		2/7/17	Issued	●		
20	5081 NE 32nd Ave	1913		2/15/17	Issued	●		
21	928 NE 28th Ave	1906		2/17/17	Final	●	●	●
22	1724 NE 45th Ave	1909		3/10/17	Under Review			
23	5515 NE 17th Ave	1913		3/13/17	Issued	●		
24	522 N Ivy St	1902		3/21/17	Under Review			
25	8604 SE 19th Ave	1904		3/37/17	Under Review			
26	1901 NW 23rd Ave	1905	H	3/31/17	Application	●		
27	1841 NW 23rd Ave	1905		3/31/17	Application	●		
28	4310 SE 64th Ave	1902		4/5/17	Under Review	●		

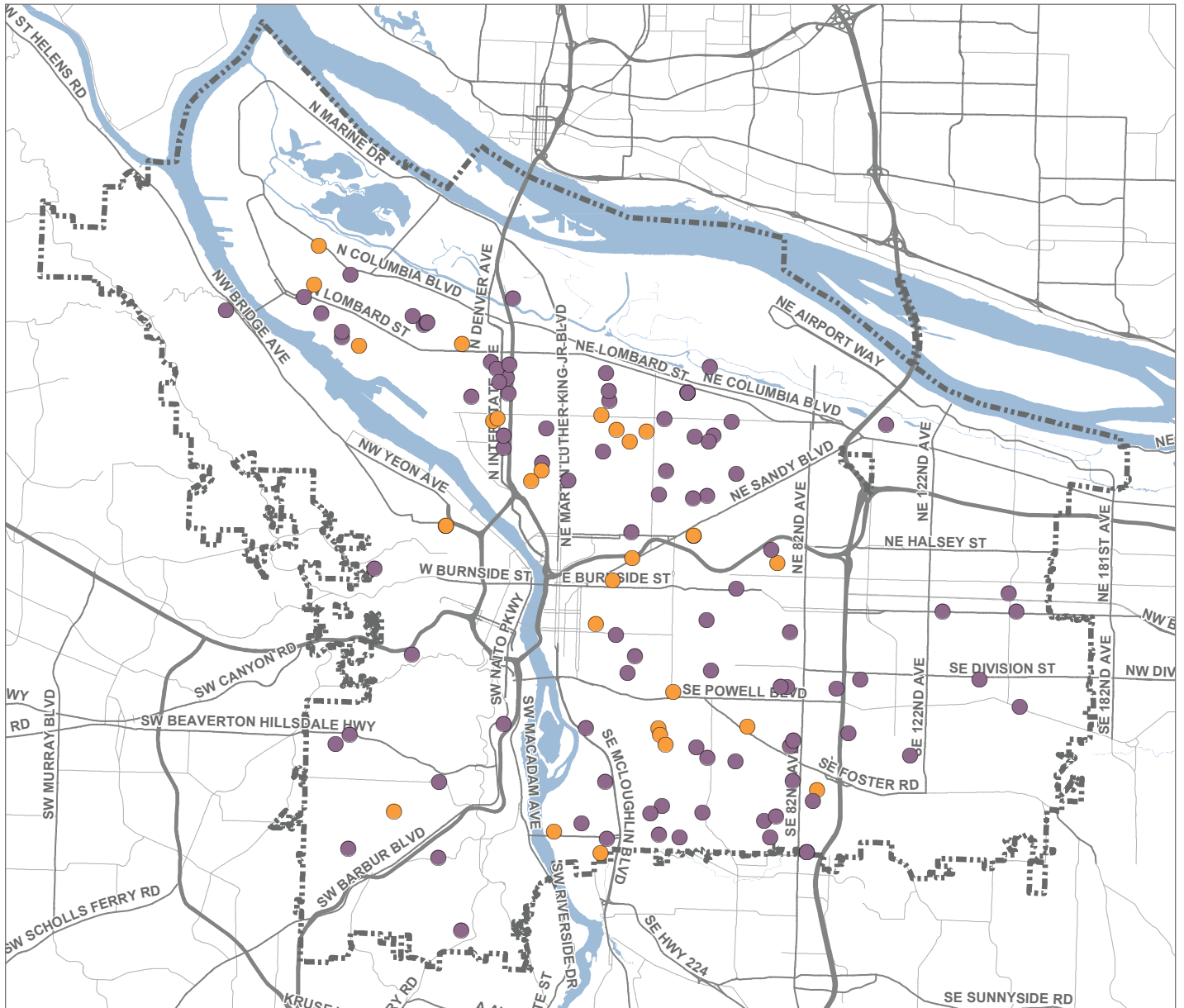
\* Demolition permits cannot be issued until a Pre-Deconstruction Form indicating what material will be salvaged is submitted by the deconstruction contractor.

\*\* The Post-Deconstruction Form is submitted following completion of the deconstruction work and includes receipts for salvaged materials.

## Permit geography

By its nature, the ordinance threshold of year built 1916 or earlier has a geographical component. These houses are located in older neighborhoods that likely developed along former street-car lines. The map below indicates all demolition permit applications since the effective date of the ordinance as well as those subject to the ordinance itself. Very few deconstruction projects are located on the west side or east of I-205. This was anticipated given the predominant ages of the structures in these areas.

### Map 1: Residential demolitions subject to deconstruction regulations



Demolition permit applications submitted since the October 31, 2016 deconstruction ordinance effective date.

- Residential demolition permits requiring deconstruction
- Residential demolition permits, other



## Historic resources threshold

Six of the houses were designated as historic resources. Of these, four were also built before 1916 and would be subject to the ordinance regardless of their historic status. It's worth noting that all of these properties are subject to a 120-day demolition delay as opposed to the more typical 35-day delay.

## Year built 1916 or earlier threshold

The threshold of year built 1916 or earlier was chosen because it represented houses 100 years or older at the time of the requirement was implemented and had historically represented 33 percent of house demolitions. This was the case for 2014 and 2015. However, 1916 or earlier homes in 2016 represented 39 percent of total demolitions. Passage of the deconstruction resolution in early 2016 may account for some of the increase in demolition permits for 1916 or earlier houses. Demolition permit applications that were deemed complete and had all intake fees paid prior to October 31, 2016 were not subject to this new requirement. The month prior to the effective date of the new ordinance (October 2016) experienced a significant spike in permits that would otherwise be subject to the ordinance. Since the October 31, 2016 effective date of the new ordinance, 20 percent of demolition permits have been subject to the ordinance (1916 or earlier). It is difficult to determine if the lower percentage is a market reaction to the ordinance or the fact that the data since the effective date represents only half of year and the relative percentage could change over the next six months. Another factor could be increased demolition permit activity just prior to the effective date of the ordinance.

<b>Table 2: Demolition permit applications and year built 1916 or earlier</b>	<b>Demolition permit applications</b>	<b>Year built 1916 or earlier</b>	<b>Average per month of 1916 or earlier</b>	<b>Percent of Applications 1916 or earlier</b>
<b>2014 (12 Months)</b>	296	97	8	33%
<b>2015 (12 Months)</b>	393	131	11	33%
<b>2016 (12 Months)</b>	433	169	14	39%
<b>November 2016 – April 2017</b>	122	26	5	21%

## Exemptions

The adopted code language allows a demolition permit applicant to request an exemption from the deconstruction requirements. Exemptions can be requested based on limited salvage/reuse or where conditions pose a safety hazard (e.g., rot or mold). During the first six months of the ordinance only two projects requested an exemption. In both cases the Bureau of Planning and Sustainability made a determination that both projects should be exempt from the deconstruction requirements. As a result, these two houses were or will be mechanically demolished. One house was heavily neglected (zombie house), illegally occupied for years, contained biohazards, suffered water and fire damage and was full of garbage. The second house suffered major fire damage throughout the structure leaving very little material available for reuse. BPS estimated that only a handful of houses would qualify for an exemption and to date that has been the case.





# Training and certification

A key component of the ordinance is that all required deconstruction must be performed by a Certified Deconstruction Contractor. The Bureau of Planning and Sustainability issued a grant to the local non-profit Earth Advantage and worked closely with the national non-profit Building Material Reuse Association (BMRA) to develop and organize a training and certification program to support the deconstruction ordinance. The BMRA's existing training curriculum, master trainers, and credentialing of deconstruction contractors and workers was an easy fit with the needs of the new program. Earth Advantage's local experience in training and credentialing has also been beneficial in ensuring on-the-ground success.

## Contractor training – July 2016

The Bureau of Planning and Sustainability, Earth Advantage and the BMRA hosted a 3-day hands-on training for contractors in late July, following adoption of the ordinance. The training was an opportunity for construction contractors considering becoming certified to receive training on an active deconstruction site. In addition to the training, participants also had an opportunity to perform a one-hour skills assessment (one of three steps in becoming certified). Sixteen individuals representing twelve different companies attended the training. A majority of the participants were members of the City of Portland's Prime Contractor Development Program (MWESB-certified contractors that work on City-owned construction projects of less than \$1M in value).



## Certified Deconstruction Contractors

A key component of the ordinance is that all required deconstruction must be performed by a Certified Deconstruction Contractor. This ensures that high-quality, safe, and effective deconstruction and salvage is accomplished on sites covered by the ordinance. The curriculum and credentialing of contractors is handled through the Building Material Reuse Association (BMRA). There are three steps to becoming certified:

1. Pass a one-hour skills assessment (in-person on a live site).
2. Pass a written exam (online).
3. Document 500 hours of experience in any of the BMRA core curriculum areas (online).

In addition to certification requirements, the contractor must be licensed by the Oregon Construction Contractors Board (CCB). A company is considered certified if at least one current employee is certified.

### Certified Deconstruction Contractors

As of April 2017, there are 12 Certified Deconstruction Contractors (companies), in alphabetical order, they are:

3 Diamond Construction, LLC

BGC, Inc. dba Bachelor General Contractor

CORE Environmental

Good Wood Deconstruction & Salvage

Lovett Deconstruction, Inc.

Northwest Reclaimed Wood, LLC

Northwest Deconstruction Specialists

Owen and Owen Builders Inc.

Progress Deconstruction

The ReBuilding Center/DeConstruction Services

Ruffin Construction

United Waste Disposal, Inc.



*A no-cost training for the students was made possible through grant funding from both the Oregon Department of Environmental Quality and Metro. The Bureau of Planning and Sustainability also contributed both staff and financial resources to support the training.*

## **Workforce development – March 2017**

An important piece of the program is to ensure an adequate workforce is available to do the work covered by the ordinance. The existing Certified Deconstruction Contractors have employees dedicated to working on deconstruction projects, but as seasonal construction begins to pick up as summer approaches, some contractors will need to hire additional crews. After an informal Request for Proposal (RFP) process, BPS again provided a grant to Earth Advantage to hold a training for new deconstruction workers using BMRA curriculum and trainer. BPS also worked closely with DEQ asbestos inspection staff to ensure the training adequately covered asbestos-related hazards.

BPS is committed to making sure this workforce effort prioritizes participation by people of color, women and other disadvantaged groups. BPS worked collaboratively with local pre-apprenticeship programs and community groups to recruit students for this opportunity. As a result, in March 2017 BPS and its partners launched a free, 12-day hands-on workforce training that took place at a series of active deconstruction sites. During the training, 15 diverse students, more than half women, were in the field to help prepare them for work on a deconstruction site. DEQ asbestos inspector came out to the training to discuss asbestos with the students and an Oregon Edition of the BMRA training workbook was developed to reflect the more stringent state requirements related to asbestos. A meet and greet was also held on site at the end of the training so students could get to know the Certified Deconstruction Contractors that may be interested in hiring.



*“Deconstruction is filled with hard, heavy, physical work, and every day presents a new challenge. My job site changes regularly and functions in all weather conditions and since I started doing this work, I come home feeling physically and mentally satisfied. I can honestly say that changing [my] career path to deconstruction was the best decision I’ve ever made.”*

*– Rebecca Hoefler, Lovett Deconstruction*

# State of the industry

The deconstruction industry continues to expand and adapt, which translates to more jobs and availability of more material. Not all of this growth can be attributed to the ordinance, however the ordinance has increased whole-house deconstruction work and has also broadened exposure of the industry. A number of notable outcomes have occurred since the deconstruction ordinance went into effect on October 31, 2016. These outcomes range from the formation of new companies to Portland showcasing its achievements at a national and international level.

## Certified firms and retail capacity

Several new deconstruction-only companies have been formed in response to the deconstruction ordinance. These new Certified Deconstruction Contractors are winning a respectable share of deconstruction projects that fall under the ordinance as well as additional jobs outside the ordinance. These new companies are currently selling their salvaged materials directly to retail buyers. Additionally, one of the new companies is opening a new 30,000 SF salvaged-material showroom to complement their deconstruction activities. A salvage-lumber-only warehouse is also in development with the help of a grant from Oregon DEQ. Existing used building material non-profits are opening several new stores in the metro area.



*Newly-founded deconstruction companies – Northwest Deconstruction Specialists and Good Wood Deconstruction & Salvage.*

## State building code amendments

The Oregon Building Codes Division is considering two state building code amendments (residential and commercial). Building Code Official Scott Caufield with Clackamas County submitted the proposed code amendments that would facilitate structural applications of salvaged lumber in new construction or remodels. Currently any lumber used for structural purposes is required to be graded and stamped. Older lumber, such as that coming out of deconstruction projects, is often not graded and stamped. However, given the old-growth nature of this salvaged material, it is equivalent or greater in strength when compared to conventional graded and stamped lumber. The proposed code language takes the inherent structural properties of salvaged lumber into account and assigns it default strength property, thereby eliminating the need for costly regrading and stamping. It also facilitates direct reuse on remodeling sites.



*Stamped lumber*

## Hazardous materials

Community concern about lead and asbestos exposure resulting from mechanical demolitions remains high. Deconstruction has the potential to help address some of these concerns since the hand disassembly of a building minimizes dust and also allows for increased opportunity to discover and safely remove unabated hazardous materials.

Senate Bill 871 is currently being considered in the Oregon legislature. The Bill would require both asbestos and lead surveys to be completed before a residential structure is demolished. The Deconstruction Advisory Group sees great value in having a detailed local study on the impacts of mechanical demolition and deconstruction.

The Ombudsman's Office recently investigated community member concerns about the sufficiency of protections for residents from exposure to hazardous materials during demolitions. The Ombudsman is working to expand protections so that all of Portland's households are protected from the risks and consequences of exposure.

### Deconstruction grant update

Deconstruction grants have been available for qualifying projects since August 2015. Approximately 20 different projects have been awarded grant money. Limited funds are still available and closure of the grant program is planned for fall 2017.



## Advancing deconstruction beyond Portland

Portland's robust reuse ethic and infrastructure and its pioneering deconstruction requirement have attracted attention ranging from local jurisdictions to all across the country and into Canada. Numerous cities are interested in developing their own ordinances and are curious about the lessons learned in Portland.

Portland was recently selected to host the national Deconstruction + Reuse conference in September of 2017. Portland will have a unique opportunity to showcase its salvage providers, used building material outlets, and finished spaces that highlight the unique salvage aesthetic. It will also be an opportunity to share outcomes from the ordinance and the policy and market development process.





## Summary

The first six months of the ordinance have rolled out smoothly. Numerous contractors that didn't exist six months ago are now in the market. Based on grant reporting and contractor interviews, the cost of deconstruction appears to have come down as a result of increased competition among deconstruction contractors. Newly-trained deconstructionists are ready to enter the workforce. The programmatic infrastructure to process demolition permits subject to the ordinance is in place. In summary, the heavy lifting to ensure success of the ordinance has been accomplished.

What remains to be seen is the full impact of salvaged materials once they leave the job site and arrive at salvage retailers/wholesalers. There are a number of factors preventing the understanding of the full impact. These include:

- A severe winter that stalled or altered scheduling.
- Mandated demolition delays (35- and 120-day).
- An increase in pre-1916 demolition permit activity before the ordinance effective date.

However, salvage retailers on the Deconstruction Advisory Group indicate they are not having difficulty moving product through their stores and that they have capacity and a strong interest in seeing increased material flow. The deconstruction ordinance has been in place for six months and there is broad interest in expanding the program.

Given the success of the ordinance and infrastructure to support it, the Bureau of Planning and Sustainability will monitor the program for another six months and return to Council at the end of October or in early November. If the deconstruction program continues to be successful, BPS will prepare an ordinance for Council consideration that would expand the year-built threshold for the ordinance from 1916 to 1926 effective January 1, 2018.

This would allow a full year's worth of market and industry maturity before changing the threshold. The effective date of January would also put the program on a calendar year cycle. Increasing the threshold to 1926 would likely result in approximately half of all house/duplex demolitions falling under the deconstruction ordinance. The Deconstruction Advisory Group will continue to meet and explore additional avenues for expanding deconstruction activity and material reuse (e.g., threshold changes, remodels and commercial demolitions).

