



PROMOTING THE PRACTICE OF DECONSTRUCTION

A RESOURCE FOR DEVELOPING AND IMPLEMENTING A MUNICIPAL DECONSTRUCTION POLICY OR INITIATIVE

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INTRODUCTION

Prioritizing reuse and recycling of building materials presents communities with opportunities to reduce waste, support the local economy, spur job creation, and enhance resiliency. According to [the Delta Institute](#), up to 70% of materials can be recycled and up to 25% of materials can be reused in a typical home deconstruction. Further, deconstruction creates [6 to 8 jobs for every 1 job](#) that demolition creates. Municipalities can take a leading role in promoting this activity to lay the groundwork for realizing these benefits in their communities.

Deconstruction is an alternative to demolition to achieve resource conservation by maximizing material recovered for reuse, recycling what is not reusable, and minimizing the amount of material going to landfills or incineration. Policies and incentive programs are two ways municipalities can promote deconstruction.

- **Policies** are an *enforceable* mechanism that require deconstruction, through for example, an executive order or ordinance.
- **Incentive programs** are mechanisms that *encourage* deconstruction but ultimately require stakeholders to opt-in to participate, like a pilot program or partnering with an organization that offers free technical assistance.

A municipality’s motivation for promoting deconstruction will guide which mechanism is most effective for your municipality. Municipalities with significant financial and personnel capacity and/or internal and external support (i.e., stated zero waste goals) may opt to immediately implement a policy. Incentives can lay the groundwork for future activity, reducing a stakeholder’s barrier to successfully complete the process. Alternatively, municipalities with less capacity or where there is limited awareness about deconstruction may choose to start with an incentive program and then use the momentum and lessons learned to strengthen it or adopt a policy.

This document highlights 12 existing US municipalities’ deconstruction efforts and summarizes important considerations when shaping how a municipality will promote deconstruction.

LOCATION	NAME AND DATE	OVERVIEW OF POLICY
Austin, TX	Construction and Demolition Recycling Ordinance 2016	This ordinance’s goal is to increase reuse and recycling of materials from construction and demolition projects. Based on building size, qualifying projects must meet project Disposal and Diversion rates. Beginning in 2016 and decreasing incrementally to 2020, and 2030, disposal rates must be no more than 2.5 to 0.5 lbs. per square feet of floor area disposed in the landfill and from 50 to 95% diversion of generated materials with beneficial use, respectively.
Boulder County, CO	Boulder County “BuildSmart” building code 2016	Residential green building code that encourages high-performing, sustainable residential development, and redevelopment. Through this ordinance, all existing buildings and portions thereof requiring removal of building materials must be deconstructed. All construction jobsite waste, including wood, scrap metal, cardboard, and concrete, must be recycled. Documentation of intent to deconstruct consisting of a deconstruction plan, a written description of deconstruction work, or the County Deconstruction Checklist must be provided at building permit application.

Concord, CA	<u>CalGreen / Construction & Demolition (C&D) Debris Recovery Program</u> 2019	This ordinance requires that 65% by weight of job site debris generated by most types of building projects be recycled, reused, or otherwise diverted from landfill disposal. This applies to demolition projects and most new construction, as well as most building additions or alterations. It requires submission of plans and reports with verifiable post-project documentation of diversion.
Cook County, IL	<u>Cook County's Demolition Debris Diversion Ordinance</u> 2016	This ordinance includes debris diversion requirements. Any residential building is subject to a minimum 5% by weight reuse requirement and a minimum total 70% by weight diversion requirement. Any non-residential building is subject to a 70% by weight recycling requirement with reuse encouraged whenever possible.
Milwaukee, WI	<u>Deconstruction Ordinance</u> 2018	Structures built in 1929 or earlier, designated historic structures, and structures in historic districts must be deconstructed rather than demolished. Every deconstruction project shall achieve a documented 85% landfill diversion rate by weight, unless otherwise approved by the commissioner.
Nashville, TN	<u>Construction and Demolition Debris Management Plans</u> 2021	Through this ordinance, applicants for commercial building permits, building demolition permits, and large multifamily residential building permits must complete a Debris Management Plans via an online form. There is a fee schedule for the review and processing of building permit applications relating to waste management to recover the cost.
Palo Alto, CA	<u>Deconstruction & Construction Materials Management Ordinance</u> 2020	This ordinance requires that all residential and commercial projects where structures are being completely removed (formerly known as demolition) must comply with the requirements for deconstruction, salvage for reuse, and source separation of materials.
Baltimore, MD	<u>Project Creating Opportunities for Renewal and Enterprise - or Project C.O.R.E</u> 2016	This initiative addresses uninhabitable housing stock by removing thousands of vacant buildings to serve as the catalyst for redevelopment, reinvestment, and stabilization in Baltimore. Project C.O.R.E. partners ensure that City residents have access to jobs that result from C.O.R.E. investments, including through such activities as demolition, deconstruction, building stabilization and rehabilitation, and site redevelopment.
Boston, MA	<u>Deconstruction In Boston</u> 2021	Initiative to encourage deconstruction by providing free technical assistance through MassDEP. Development teams select one of five deconstruction pathways to pursue: waste management plan, pre-demo clean out, soft stripping, hybrid, or full deconstruction. Incentives for participation include: receiving free technical assistance, proactive preparing in advance of potential future policies, proactive engagement with city goals, and potential tax benefits.

Pittsburgh, PA	Deconstruction in Pittsburgh 2021	This initiative aims to develop a unified city-led deconstruction policy and establish a city-led pilot program utilizing deconstruction methods on city-owned condemned properties. This pilot applies to the 1,700 buildings that are currently condemned as uninhabitable.
San Antonio, TX	Deconstruction and Salvage Initiative/ Deconstruction & Reuse Program 2018	This initiative aims to recapture building materials from the waste stream and redirect them back into communities for reuse.
San Jose, CA	Construction & Demolition Diversion (CDD) Program 2001	An initiative that encourages residents to recycle, reuse and salvage construction debris and to deter disposing the Construction and Demolition (C&D) materials directly in the landfills. It applies to all new construction and tenant improvement projects valued over \$200,000 or greater, and to all residential alterations of \$2,000 or more, all non-residential alterations of \$5,000 or more, and all residential and non-residential demolitions.

Types of Deconstruction

There are multiple types of deconstruction. A building’s material composition and age, market demand, project scope, and storage capacity all factor into which deconstruction type(s) best achieves an incentive program’s or policy’s purpose and desired outcome. A municipality can prescribe a single type of deconstruction or create “deconstruction pathways” that provide participants a menu of options to select which type(s) of deconstruction is best for a project.

SCALE	TYPE	DEFINITION	EXAMPLES
	Adaptive Reuse	Maintaining a building structure while renovating its interior for a different purpose	
	Waste Management Plan	Document to plan for the reuse and recycling materials during a project	Nashville, TN
	Pre-Demo Clean Out	Removing items like furniture that can be donated before the project begins	
	Soft-Stripping	Recovers high value and easy to remove materials like appliances, lighting, cabinetry, and architectural items	
	Partial Deconstruction	Encompasses additional material including doors, trim, flooring, and windows	
	Full Deconstruction	Salvaging all materials with value and outlets	Portland, OR
	Deconstruction Pathways	Provides menu of deconstruction types to select best fit based on a project	Boston, MA

IMPORTANT CONSIDERATIONS

The section below outlines several key areas that a municipality should consider when developing a deconstruction policy or initiative.

Identify Priorities

As demonstrated by these examples, municipalities often center a deconstruction incentive program or policy around a specific qualification. A municipality may choose several parameters to achieve its purpose and desired outcome. These criteria can also be helpful to build a phased approach that frames later iterations or phases.

PARAMETERS FOR POLICY/INCENTIVE	EXAMPLE
Demolition Process, Including Alterations and Renovations	Boston, MA Boulder County, CO Concord, CA Cook County, IL
Building Age	Milwaukee, WI Portland, OR San Antonio, TX
Building Size	Austin, TX
Building Type	Nashville, TN Palo Alto, CA Portland, OR San Antonio, TX
Historic Preservation/ Adaptive Reuse	Boston, MA Milwaukee, WI Portland, OR San Antonio, TX
Uninhabitable Housing Stock	Baltimore, MD Pittsburgh, PA San Antonio, TX
Project Value	San Jose, CA
Minimum % C&D recycled Minimum % C&D reused	Austin, TX Cook County, IL Milwaukee, WI
Specific types of materials that need to be recovered	Boulder County, CO

Available incentives that can be provided for deconstruction initiatives or policies include:

- Offering deconstruction permits for free vs. charging a fee for demolition permits
- Fast-tracked permitting for deconstruction
- Grants to offset cost difference between demolition and deconstruction (i.e., a \$/ft² incentive)
- Providing free technical assistance
- Sticker or certification promoting deconstruction
- Workforce training
- Zoning relief

Engaging Stakeholders

Deconstruction requires commitment from entities across several sectors and industries. These may include representatives from government departments, interest groups such as historic preservation, reuse and recycling outlets or markets, and developers, contractors, or property owners. Motivations may range from economic development and equity to materials reuse, cost savings, and recognition.

Diversity, Equity, and Inclusion (DEI)

Deconstruction provides an opportunity to integrate and advance a municipality's diversity, equity, and inclusion efforts. If a municipality has minimal resources to support this collaboration, promoting deconstruction can also serve as an intervention point to advocate for greater resources to advance DEI efforts. Some opportunities include:

OPPORTUNITY	EXAMPLE
<p>Promote equitable and diverse procurement by coordinating with the economic development department to ensure Minority/Women-owned Business Enterprises (MWBES) have access to bidding opportunities or working to develop language which encourages projects to contract with MWBES.</p>	<p>Boston's Equitable Procurement Executive Order</p>
<p>Prioritize access of reusable goods for economically disadvantaged individuals and families by coordinating with neighborhood services department to identify organization and shelters that accept or coordinate the dispersion of donated furniture or encourage projects to contract with organizations that provide discounts to low-income customers.</p>	<p>Boston Building Resources Finger Lakes ReUse - ReMAP</p>
<p>Support green job training for youth, vocational school students, or individuals re-entering from incarceration by developing or partnering with organizations which offer job training program.</p>	<p>Pittsburgh, PA Boston, MA</p>

Addressing Barriers

The following table highlights some common barriers to deconstruction and strategies or considerations to address them. Identifying barriers early in the process can inform development of the policy or initiative. Doing so can help minimize unforeseen consequences and increase stakeholder's comfort by decreasing the risk associated with a new process like deconstruction.

STAKEHOLDER GROUP	COMMONLY IDENTIFIED BARRIERS	STRATEGIES TO ADDRESS BARRIERS
<p>Government/ Municipality</p>	<ul style="list-style-type: none"> Minimal internal support Minimal personnel capacity 	<ul style="list-style-type: none"> Identify synergies with existing city departments and programs or external stakeholder efforts Identify where demolition process already happens in city process (permitting, planning review) – identify if deconstruction can be integrated into existing policy through updates
<p>Developers/ Contractors/ Property Owner</p>	<ul style="list-style-type: none"> Additional cost Hazardous materials How to reintegrate materials into project Identifying outlets Labor training and knowledge Schedule changes – delays and extensions On-site storage 	<ul style="list-style-type: none"> Providing pathways to determine economically viable type of deconstruction Engage early in the development process (i.e. when plans are being drafted rather than final approval) CET can provide free technical assistance or share helpful resources
<p>Reuse/ Recycling Infrastructure – Outlets and Markets</p>	<ul style="list-style-type: none"> Generating demand for recycled building materials Material stream is inconsistent Expanding outlets for and storage for recovered materials Insufficient number of markets Need for adequate, well-trained workforce 	<ul style="list-style-type: none"> Identify high demand/valuable materials for outlets, prioritize in policy or initiative Adopt policy mechanisms that mandate material diversion Seek creative solutions like virtual exchange platforms (see San Antonio's Building Material "Dating App") Building Material Reuse Centers Brochure (Connecticut Department of Energy and Environmental Protection DEEP)