8 Construction and Demolition Debris

Contents

Figures and Tables

Chapter 8 Construction and Demolition Debris

Overview

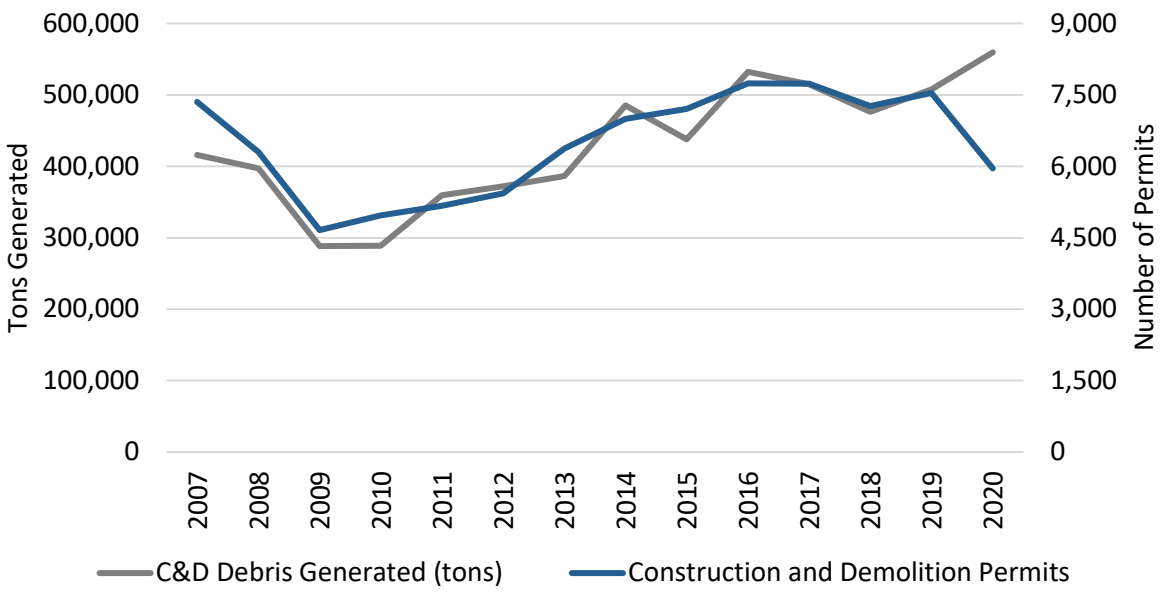
Construction and demolition (C&D) debris includes wood waste, metals, asphalt roofing, gypsum, concrete, and other materials generated by construction and demolition activities. C&D materials are self-hauled by construction contractors, third-party private haulers, or the City's contracted C&D waste collector to private recycling facilities for sorting or to private transfer stations for disposal. In some cases, construction contractors collect C&D materials in intermodal freight containers at C&D jobsites so they can be hauled directly to railheads for transport to a landfill.

C&D debris accounts for a large portion of Seattle's overall waste, estimated at approximately 560,000 tons in 2020 compared to nearly 712,000 tons of other waste from businesses and residents.[1] Typical C&D materials include concrete, asphalt paving, aggregates, wood waste, structural metals, asphalt composition roofing, gypsum wallboard, and insulation from C&D projects.

C&D debris generation is highly variable and closely correlated with economic activity, particularly in the construction industry (Figure 8.1 on page 8.3). The number of construction permits issued by the Seattle Department of Construction and Inspection (SDCI) has grown for nine out of the past 11 years, and SDCI anticipates that permits for new construction, remodeling, and demolition will generally continue at current rates, after recovering from dip in 2020 due to the COVID-19 pandemic. As a result, Seattle Public Utilities (SPU) expects C&D debris generation to be roughly as high as it is now for the foreseeable future.

[1] Seattle Public Utilities, "2020 Waste Prevention & Recycling Report," October 1, 2020, https://www.seattle.gov/Documents/Departments/SPU/Documents/Recycling_Rate_Report_2020.pdf.

Figure 8.1 C&D Debris Generation and Seattle Building Permits (2007-2020)



Sources: Permit counts from SDCI; tons from SPU, "2020 Annual Waste Prevention & Recycling Report."

In addition to recycling and disposal, many building materials can be reused. Factors that influence the potential for reuse include style trends, supply, condition while installed, and ease of removal without damaging. As with other types of waste, reuse is the highest and best use of discarded building materials. Salvage is the removal of select materials from a building before demolition. Salvaged materials include items such as cabinets, windows, wood flooring, and architectural features. The typical home or commercial space often contains many reusable items. Deconstruction, an alternative to demolition, is the systematic disassembly of a structure in the opposite order it was constructed to maximize salvage of material for reuse. While salvage of selected items is often free, full deconstruction typically costs more than demolition.

C&D Debris Terms:

Deconstruction: Taking apart a structure in an orderly and systematic manner to maximize salvage, reuse, and recycling

Salvage: Recovery of valuable or useful C&D materials for reuse.

Beneficial use: The use of solid waste as an ingredient in a manufacturing process, or as an effective substitute for natural or commercial products in a manner that does not pose a threat to human health or the environment. One example is using clean wood as industrial boiler fuel in certain boilers.

Reclaimed lumber from a grant-supported Sledge Seattle project to deconstruct a house by hand and salvage the lumber for reuse in new construction (Source: Sledge Seattle, 2019).

Beneficial use is another way to divert C&D debris from landfills if reuse or recycling are not possible. A common example is using C&D debris as a fuel for industrial boilers to replace other fuels.

This chapter describes Seattle's policies that improve C&D debris recycling and then describes the C&D waste management system—from collection to recycling, reuse, and beneficial use, to final disposal.

C&D Debris Requirements Encourage Reuse and Recycling

To reduce the amount of C&D debris landfilled and monitor progress on C&D debris recycling, SPU adopted several regulations related to recycling C&D debris, assessing the feasibility of salvage before demolition, and reporting C&D debris quantities and destinations. To enforce C&D debris recycling regulations, SPU periodically inspects construction sites and C&D debris processing facilities. The section details Seattle's requirements to encourage C&D reuse and recycling and efforts to increase deconstruction.

Disposal Bans

In March 2011, the Seattle City Council passed Ordinance 123553, codified in Seattle Municipal Code 21.36.089.[2][3] The ordinance prohibits disposing of asphalt paving, bricks, and concrete in any type of garbage container at construction sites. It also prohibits disposing of these materials at private or public transfer stations. Materials must be delivered to a certified C&D recycling facility. Exceptions to this disposal ban include painted materials, those made with hazardous materials, or those present only in very small quantities.

Disposal bans began in 2012 with education and outreach about the new requirement, and penalties were not applied until 2013. In 2014, Seattle implemented disposal bans on metal, cardboard, and new construction gypsum scrap. In 2015, the disposal bans expanded to include clean wood. To enforce C&D debris disposal bans, SPU periodically inspects construction sites. Additional disposal bans are currently on hold, pending the development of recycling markets for these materials.

Salvage Assessments

To improve diversion and reuse of C&D materials, Seattle requires salvage assessments for certain construction projects, in addition to banning specific C&D materials from disposal. Salvage assessments document the quantity of materials that could be salvaged and reused on- or off-site before deconstruction and demolition of a project. Examples of salvageable materials include clean wood, siding, roofing materials, plumbing, and lighting fixtures.

[2] http://clerk.seattle.gov/search/ordinances/123553
[3] https://library.municode.com/wa/seattle/codes/municipal_code/281112?nodeId=TIT21UT_SUBTITLE_IIISOWA_CH21.36SOWACO_SUBCHAPTER_IISOWACO_21.36.089CODEWARERE

All demolition and alteration projects of 750 square feet or greater or $75,000 or more in value must complete a salvage assessment before they can obtain a building permit from SDCI. Seattle adopted this requirement to increase building material diversion by raising awareness of materials that can be salvaged and resold and connecting construction decision-makers with building salvage professionals.

For alteration projects, the salvage assessment can be completed by an owner or owner's representative. For whole building removal, the assessment must be completed by a salvage verifier, which is a salvage or reuse retail company or a professional deconstruction or demolition contractor with knowledge of salvage retail markets.

Kitchen tile removal for salvaging (Source: Second Use, 2020)

C&D Facility Certification

To comply with Seattle's C&D debris recycling requirements and disposal bans, construction contractors and C&D debris haulers are required to deliver C&D materials to certified facilities for processing if they contain significant amounts of materials banned from disposal. SPU certifies the recycling activities at these receiving and processing facilities to ensure they comply with Seattle's C&D debris disposal bans. These facilities must meet state and local permitting requirements as well as performance standards for recovering key C&D materials from waste sent to landfill disposal. They must also report to Seattle on incoming and outgoing

construction materials that are reused, recycled, beneficially used, and disposed.[4] This reporting helps Seattle track C&D debris generation and recycling. SPU's enforcement of C&D recycling and management requirements includes periodically inspecting construction sites and processing facilities.

Waste Diversion Reporting

All demolition projects and all new construction and alteration projects with a value of $75,000 or greater or with an area of work that is 750 square feet or more must submit a Waste Diversion Report to SPU upon completion of the project.[5]

Waste Diversion Reports identify quantities of C&D materials generated from a specific project and where they were delivered for reuse (onsite), salvage (offsite), recycling, and landfill disposal. SPU may randomly audit Waste Diversion Reports for timeliness of submission and completeness. Audits may also investigate whether materials were delivered to qualified facilities in compliance with City regulations.

Recommendations

To improve compliance with C&D debris recycling and reporting requirements and increase C&D debris recycling, SPU makes the following recommendations:

Expand construction and demolition debris industry outreach and education

Education and compliance strategies include dedicated education and outreach support to C&D industry professionals and additional review of and follow-up on Waste Diversion Reports.

Improve enforcement of and incentives for compliance with C&D system rules

Increase enforcement of existing C&D system rules, such as flow control, disposal bans, and disposal taxes, as applied to C&D haulers, transfer sites, and sorting facilities. Consider new levers and price signals to improve recycling compliance and ensure processing of most C&D waste rather than disposal.

[4] Certified facility recycling rate reports are completed by facilities and include their diversion rate estimates each quarter. Certified C&D recycling facilities are required to provide Seattle with data on incoming and outgoing construction materials for reuse, recycling, beneficial use, and disposal.
[5] http://www.seattle.gov/documents/Departments/SPU/Manual_WDR_Form.pdf

Deconstruction

Where demolition simply destroys a building, deconstruction involves deliberately removing individual materials so they can be reused elsewhere. Recycling, deconstruction, and salvaging materials for reuse must happen in ways that add minimal extra time and labor, which increase costs. Limited space and safety concerns also create challenges for diversion on job sites as structures may contain potentially hazardous material or materials that are difficult to remove or recycle.

The number of demolition permits has increased over the last few years to 731 permits in 2020 but is still lower than during the last economic peak in 2007 (806 permits).[6] The combination of high numbers of demolished buildings and growing challenges of homelessness has highlighted the need to reduce the likelihood of buildings sitting vacant. SDCI previously incentivized residential deconstruction by expediting permits for deconstruction compared to demolition, but due to the larger concern around vacant buildings, SCDI now expedites permits for demolition.

Sledge Seattle deconstructed a house by hand and salvaged lumber for reuse in new construction as part of an SPU grant project. (Source: Sledge Seattle, 2019)

Given that Seattle does not currently incentivize deconstruction and demolition is typically the less expensive option, SPU is working with King County to evaluate the feasibility of a residential deconstruction ordinance and contractor certification program. SPU and King County formed the Deconstruction Advisory Group to develop an ordinance that would require deconstruction or alternative methods to substantially increase deconstruction, such as the deconstruction policy implemented by the City of Portland, Oregon. Portland requires deconstruction instead of demolition of single-family homes or duplexes built in 1916 or earlier or designated a historic resource.[7] Portland's ordinance covers approximately one-third of single-family demolition permits.

[6] Seattle Department of Construction and Inspection.
[7] City of Portland Bureau of Planning and Sustainability, "Deconstruction Requirements," Accessed August 25, 2019, https://www.portlandoregon.gov/bps/70643.

Recommendation

The following recommendations focus on increasing C&D debris salvage and deconstruction. Though intended for implementation in the short-term planning period (within five years), these recommendations may take longer, as efforts specific to salvage and deconstruction for reusable building materials—and particularly requirements for deconstruction—depend on market conditions for reused and recyclable C&D material.

Promote salvage and deconstruction for reusable building materials

In this strategy, SPU would support establishing a salvage lumber warehouse or network of reusable lumber processors and retailers. In addition, SPU would explore opportunities to increase salvage through voluntary and regulatory efforts in partnership with SDCI. SPU would also be strengthening current salvage assessment requirements to promote follow-through implementation of salvage plans, an action recommended by Seattle SWAC in its response to the 2020 Waste Prevention & Recycling Report.[8]

Require deconstruction for select project sizes and/or project types to increase C&D debris recovery

This strategy involves developing requirements for project sizes and/or types with high diversion potential to use deconstruction instead of demolition. For preliminary planning and evaluation, this strategy focuses on single-family houses and assumes approximately 30% of permitted demolitions (about 150 houses per year) would be affected by the requirement. Seattle SWAC recommended this strategy in its response to the 2020 Waste Prevention & Recycling Report.[9]

C&D Collection, Reuse, Recycling, and Disposal

SPU defines "recycling," "beneficial use," and "disposal" of C&D by how the material will be used, also called the end market, in Administrative Rule #SPU-DR-01-07.[10] Examples of recycling end markets include concrete made into aggregate for road base, wood waste made into paper pulp for paper products, and gypsum wallboard reprocessed into new wallboard. An example of

[8] Seattle Public Utilities, "2019 Waste Prevention and Recycling Report," October 1, 2020, https://www.seattle.gov/Documents/Departments/SPU/Documents/Recycling_Rate_Report_2019.pdf.
[9] Ibid.
[10] https://www.seattle.gov/Documents/Departments/SPU/Documents/DR0107WhatConstitutesBeneficialUseforConstructionDemolitionWaste.pdf

beneficial use is unpainted and untreated wood waste chipped and sent to an industrial boiler for energy recovery. The Washington State Department of Ecology may also approve a specific use as beneficial use under Washington Administrative Code 173-350-200.[11]

Disposal includes using mixed C&D debris at a landfill as alternative daily cover (ADC) for garbage or as industrial waste stabilizer to solidify waste prior to placing in industrial waste landfills. Disposal also includes energy recovery at a mass burn facility that generates electricity from burning waste. Seattle's definitions of these end markets for C&D debris help ensure that materials are reused or recycled, when possible, rather than used as fill or directly disposed.

Collection

Seattle Municipal Code limits the hauling of C&D debris destined for disposal using dumpsters and drop-boxes to designated contractors selected by SPU. Seattle has contracted for disposed C&D debris collection since 2001 and awarded the current contract to Waste Management, Inc. in 2019. Material hauled by Seattle's contracted collector represents only a small portion (less than 1%) of the C&D debris generated within the city, because most of Seattle's C&D debris is either self-hauled by the construction contractors that generate the material, hauled by third-party private haulers for recycling, or collected directly in intermodal freight containers for transport by rail to landfill for disposal. The following explains who may haul C&D debris in Seattle based on the type of destination facility, either disposal or diversion.

SPU staff by an intermodal container during a transfer station tour (Source: SPU Image Library)

[11] https://apps.leg.wa.gov/wac/default.aspx?cite=173-350-200

Hauling for disposal. Waste Management, Inc. is the only company allowed to charge a fee for hauling C&D debris from any construction site within city limits for disposal. Businesses are not required to use the City-contracted collector if they haul their own waste or they haul wastes resulting from another service provided by the business.

Hauling for diversion (recycling or beneficial use). Any company or person can collect C&D debris materials if they are destined for recycling or beneficial use, which are both considered to be diversion. However, the collected materials may contain no more than 10% non-recyclable or non-beneficially used material, by volume. Recycling collection containers must be clearly labeled. C&D debris generators can save money if they recycle because they avoid city and state solid waste (garbage) taxes.

C&D recyclables can be collected either source-separated (each material type separated onsite) or commingled (mixed materials) recycling. An example of source-separated recycling is a drop box for clean wood waste only. New construction sites often use source-separated recycling containers because materials are easy to separate at each stage of building construction. By state law, jobsites must have a separate dumpster for waste when a recycling container is present.[12] An example of commingled recycling is a drop box for mixed recoverable recyclables such as wood waste, metal, and wallboard. In our region, several facilities process mixed C&D waste, which offers alternatives to source-separated recycling and to disposal.

Who Can Haul C&D Debris?

C&D debris in Seattle is typically collected by the four types of people or entities and hauled to processing facilities for recycling, to private or public transfer stations for disposal, or to train yards for transporting to a landfill.

1. **City-contracted collector**. The Seattle's contracted collector for C&D debris destined for disposal is Waste Management, Inc.
2. **Self-haulers.** The person or entity that hauls the C&D debris is a self-hauler if they also generated the material. One example is a homeowner taking remodeling debris to Seattle transfer stations for disposal. C&D contractors who do demolition, new construction, and home or commercial remodeling are self-haulers when they take C&D debris from their own jobs to a city or private transfer station in Seattle.
3. **Third-party private C&D debris haulers.** These entities offer hauling services to construction or demolition contractors. If they receive a fee for their service, they may

[12] Washington Administrative *Code (WAC) 173-345-040, Collection of solid waste and recyclable materials,* states "All sites where recyclable materials are generated and transported for recycling must provide a separate container for nonrecyclable materials (solid waste), using collection practices consistent with Chapter 173-350 WAC." https://apps.leg.wa.gov/WAC/default.aspx?cite=173-345-040.

transport only C&D debris for recycling and must deliver it to qualified receiving and recycling facilities.

4 **Intermodal haulers**. These haulers provide intermodal freight containers to collect C&D debris from construction sites and transport them directly to railhead for long-haul transport to landfills. C&D debris collected directly in intermodal containers is excluded from the City collection contract. Construction contractors can hire any third-party private company for intermodal service. Demolition contractors often use 100-cubic-yard intermodal containers. A transfer tax applies to intermodal containers of C&D debris loaded at job sites and delivered to Seattle's two railheads for landfill disposal.

Reuse and Recycling

Although the private sector has substantially expanded C&D debris processing capacity in the Puget Sound area over the past decade, C&D debris recycling remains a dynamic industry subject to changes in economic activity and variable markets that mostly rely on the capacity and value of regional hog fuel, without any guarantees that the recycling infrastructure will remain available. Given the highly varied nature of C&D debris recycling, Seattle closely monitors local processing capacity for current and potentially recyclable C&D materials.

Effective and resilient C&D debris recycling requires strong and stable end markets for recovered building materials. SPU tracks markets for materials currently banned from disposal to identify opportunities to expand bans to additional materials. SPU monitors markets for plastic wrap, asphalt shingles, and carpet to evaluate the feasibility of future disposal bans as these have shown potential in the past.

SPU also engages in market development, which refers to efforts to develop local processing capacity and end markets. Market development may include activities such as increasing the supply of structural lumber for reuse instead of disposal or increasing the supply of clean wood for use in wood composite product or pulp and paper manufacturing, rather than diverting it to lower value "beneficial use" end markets such as industrial boiler fuel.

In the Seattle area, a wide variety of facility types receive and process C&D debris for reuse or recycling according to City certification standards. The following sections describe and list facilities based on their certification with Seattle as of September 2021. The City certifies salvage and reuse facilities (Table 8.1), source-separated recyclers (Table 8.2), and mixed C&D recycling facilities (Table 8.3). Seattle prohibits the disposal of recyclable C&D debris.

Salvage and reuse facilities for building materials. These businesses collect and sell used fixtures, structural lumber, metal pieces, and other salvageable materials.

Table 8.1 Seattle Salvage and Reuse Facilities for Building Materials

FACILITY NAME	ADDRESS	MATERIALS
Ballard Reuse	1440 NW 52nd St. Seattle, WA	Reusable building materials, reusable wood, brick
Second Use Building Materials	3223 6th Avenue S. Seattle, WA	Reusable building materials, reusable wood, brick
Earthwise Building Salvage	3447 4th Avenue S. Seattle, WA	Reusable building materials, reusable wood, brick

Construction site for three new homes using reclaimed lumber in West Seattle (Source: Seattle Sledge, 2019)

Source-separated C&D debris recycling facilities. These facilities recycle single commodities that have been separated at the job site, such as clean wood waste, concrete, gypsum scrap, metal, or tear-off asphalt shingles. Source-separated facilities account for much of the C&D debris recycling in the region. These facilities are often located outside Seattle, usually have very low tip fees compared to disposal, and report achieving high recovery rates (around 95%).

Table 8.2 Source-Separated C&D Debris Recycling Facilities

FACILITY NAME	ADDRESS	MATERIALS
Ace Metals	11110 Mukilteo Speedway Mukilteo, WA	Metals
All Wood Recycling	8504 192nd Avenue NE Redmond, WA	Asphalt paving, concrete and rocks, metals, landclearing and yard debris, pallets, wood
Binford Metal Recycling	26133 78th Avenue S. Kent, WA	Metals
Bloch Steel Industries	4580 Colorado Avenue S. Seattle, WA	Metals
Cadman, Inc.	18816 NE 80th Street Redmond, WA 26111 SE Green River Road Black Diamond, WA 19221 High Rock Road Monroe, WA	Asphalt paving, bricks, clean soils
Cedar Grove Composting Co.	7400 8th Avenue S. Seattle, WA 17825 Cedar Grove Road SE Maple Valley, WA	Landclearing and yard debris, pallets, wood
CEMEX – Everett	6300 Glenwood Avenue Everett, WA	Asphalt paving, bricks, concrete and rocks, clean soils
Dirt Exchange	1521 NW 50th Seattle, WA	Asphalt paving, landclearing and yard debris, clean soils
Fruhling Sand and Topsoil	1010 228th Street SW Bothell, WA	Asphalt paving, clean soils
Icon Materials	R Street SW & Oravetz Road Auburn, WA	Asphalt paving, metals
Lautenbach Industries	13084 Ball Road Mt. Vernon, WA	Asphalt paving, concrete and rocks, metals (steel only), wood
Lloyd Enterprises, Inc.	80 5th Avenue Milton, WA	Asphalt paving, bricks, concrete and rocks, clean soils, wood
Lynnwood Recycling	16123 Highway 99 Lynwood, WA	Metals

FACILITY NAME	ADDRESS	MATERIALS
Maltby Container & Recycling	20225 Broadway Avenue Snohomish, WA	Asphalt paving (limits), concrete and rocks (limits), drywall (limits), metals (limits), cardboard (limits), wood (limits)
Miles Resources	2800 104th St. Court South Lakewood, WA	Concrete
National Pallet Service	15505 S. Prairie Carbon River Rd Orting, WA	Pallets
New West Gypsum	8657 S. 190th St. Kent, WA	Drywall
Non-Ferrous Metals, Inc.	230 S. Chicago St. Seattle, WA	Metals
Northwest Metal and Salvage	9607 Aurora Avenue N. Seattle, WA	Metals
Pacific Iron & Metal	2230 4th Avenue S. Seattle, WA	Metals
Pacific Topsoils, Inc.	1212 N 107th St. Seattle, WA 6000 S. 129th St. Seattle, WA 1733 127th Avenue NE Bellevue, WA 7500 NE 175th Kenmore, WA 9830 Renton-Issaquah Road SE Issaquah, WA 20871 NE Redmond Fall City Rd Redmond, WA 8616 219th St. SE Woodinville, WA 21700 SE Lake Francis Road Maple Valley, WA	Asphalt paving, concrete and rocks, landclearing and yard debris, pallets, clean soils, wood
Palmer Coking Coal Co.	31407 3rd Ave Black Diamond, WA	Bricks, concrete and rocks, clean soils

FACILITY NAME	ADDRESS	MATERIALS
Rainier Pallet and Crating Corp.	4402 B. St NW Auburn, WA	Pallets
Rainier Wood Recyclers	27529 Covington Way SE Covington, WA 3216 SE Redmond Fall City Rd Fall City, WA	Metals, landclearing and yard debris, pallets, wood
Renton Concrete Recyclers	500 Monster Rd SW Renton, WA	Asphalt paving, bricks, concrete and rocks
Resource Recovery Services, Inc	21818 76th Drive SE Woodinville, WA	Drywall
Resource Woodworks Inc.	627 E 60th St Tacoma, WA	Reusable building materials, wood
Schnitzer Steel	1902 Marine View Dr. Tacoma, WA 23711 63rd Ave SE Woodinville, WA	Metals
Seadrunar Recycling	28 S. Brandon St Seattle, WA	Cardboard
Seattle Iron & Metals Corp	601 S Myrtle St. Seattle, WA	Metals
Squak Mountain Materials LLC.	10430 Renton-Issaquah Rd SE Issaquah, WA	Asphalt paving, bricks, metals
Stoneway Concrete	510 Monster Rd SW Renton, WA	Asphalt paving, bricks, concrete and rocks
Sutta Company	2719 California Ave SW Seattle, WA	No materials specified
The Recycle Depot	851 Rainier Avenue S. Seattle, WA	Metals
United Metals	18827 Yew Way Snohomish, WA	Metals

FACILITY NAME	ADDRESS	MATERIALS
United Recycling	18827 Yew Way Snohomish, WA	Asphalt paving, bricks, concrete and rocks, drywall, metals, landclearing and yard debris, cardboard, pallets, clean soils, wood
Valley Recycling	312 W Valley Hwy S. Pacific, WA	Metals
Watson Asphalt and Paving Inc.	19220 Union Hill Road Redmond, WA	Asphalt paving
West Seattle Recycling, Inc.	3881 16th Ave SW Seattle, WA	Metals, cardboard
Wolford Recycling Facility	220014 W. Bostian Road Woodinville, WA	No materials specified

Qualified mixed C&D debris recycling facilities. These facilities recycle various commingled commodities such as wood waste, metal, gypsum scrap, carpet, packaging materials, and aggregates that have been collected mixed together. Nine facilities that are qualified to recycle mixed waste C&D debris operate in the Seattle-Tacoma area (Table 8.3). One additional facility is qualified to receive mixed C&D debris and transfer it to a qualified recycler. The qualified mixed C&D debris recycling facilities' tip fees in the table that follows are typically lower than disposal fees. On average, these facilities report recycling up to 90% of the loads they receive that consist of primarily clean, recyclable C&D debris.

Table 8.3 Qualified Mixed C&D Debris Recycling and Receiving Facilities

FACILITY NAME	ADDRESS	TYPE
DTG Maltby	8624 219th St SE Woodinville, WA	Mixed C&D recycling
DTG Renton	701 SW 34th St Renton, WA	Mixed C&D recycling
DTG Seattle	7201 E Marginal Way S Seattle, WA	Mixed C&D recycling
DTG Woodinville	5906 238th St SE Woodinville, WA	Mixed C&D recycling
Maltby Container and Recycling	20225 Broadway Ave Snohomish, WA	Mixed C&D recycling

FACILITY NAME	ADDRESS	TYPE
Recovery 1, Inc.	1805 Steward Street Tacoma, WA	Mixed C&D recycling
Republic's Black River Transfer Station	501 Monster Rd S Renton, WA 98055	Mixed C&D recycling
United Recycling & Container	18827 Yew Way Snohomish, WA	Mixed C&D recycling
United Recycling Seattle	74 S Hudson Street Seattle, WA	Mixed C&D recycling
Waste Management Eastmont Transfer Station	7201 W Marginal Way SW, Seattle, WA	Transfer to another Qualified Facility

To promote C&D debris waste prevention and recycling, SPU developed public information materials for contractors together with King County and SDCI in 2012.[13] SPU's C&D debris waste management website now refers to King County's online recycling database for the most up-to-date information.[14][15]

Disposal

The City of Seattle has legal authority to decide where and how to manage all of Seattle's solid waste that is not recycled or composted, including C&D debris. This legal authority is commonly called "flow control." C&D materials generated in Seattle and not delivered directly to the railhead in intermodal containers must be managed through the City's C&D disposal system, which currently includes the North and South Transfer Stations. Seattle handles C&D debris delivered by residents and small businesses to the transfer stations in self-haul loads the same way it handles other garbage. About 60,000 tons, or 62%, of the self-haul stream in the 2017–2018 self-haul waste composition study was estimated to be C&D materials.[16]

Of the 60,000 tons of C&D debris in the self-haul disposal stream identified in the self-haul waste composition study, approximately one-fifth (nearly 13,000 tons) is material that is

[13] Construction Recycling Directory (2012), which provides worksheets and guidance on how contractors can best reuse and recycle building materials
[14] http://www.seattle.gov/utilities/construction-resources/collection-and-disposal/construction-and-demolition
[15] https://kingcounty.gov/depts/dnrp/solid-waste/garbage-recycling/recycling.aspx
[16] Seattle Public Utilities, prepared by Cascadia Consulting Group, "2017-2018 Self-Haul Waste Stream Composition Study," 2018, https://www.seattle.gov/Documents/Departments/SPU/Documents/18%20Self-Haul%20Waste%20Stream%20Composition%20Study.pdf.

covered by existing C&D disposal bans.[17] If customers took the recyclable C&D debris directly to C&D recycling processors instead of to the City's transfer stations, this material could get recycled and Seattle's self-haul recycling rate and overall recycling rates would increase.

Residents and small businesses also sometimes dispose of C&D materials in curb or alley garbage containers that are set out for collection. An estimated additional 21,000 tons (5,000 tons in residential and 16,000 tons in commercial waste) were collected in residential and commercial garbage containers in 2018.[18] Diverting recoverable C&D debris from curb or alley collection would increase Seattle's overall weight-based recycling rate.

Though some C&D debris enters Seattle's waste stream via the transfer stations, most non-recyclable C&D debris in Seattle is disposed of through private transfer stations, which typically have lower tip fees than Seattle's public transfer stations. Private transfer stations are typically set up to handle large, self-unloading trucks. Two railheads in Seattle accept large intermodal containers directly—mostly from demolition projects—for transport to a landfill. Table 8.4 lists facilities designated by the City to receive C&D debris from jobsites in Seattle for disposal of nonrecyclable mixed C&D debris.

A load of clean wood disposed at one of Seattle's transfer stations (Source: Katie Kennedy)

[17] C&D materials currently banned for disposal include asphalt paving, bricks, concrete, metal, cardboard, new construction gypsum scrap, and unpainted and untreated wood. See http://www.seattle.gov/utilities/businesses-and-key-accounts/construction/construction-waste/recycling-requirements.

[18] Estimated by applying compositions from the 2014 residential and 2016 commercial waste composition studies to 2018 tonnages.

Table 8.4 Qualified Receiving Facilities for Disposal

FACILITY NAME	ADDRESS	TYPE
City of Seattle North Transfer Station	1350 N 34th St Seattle, WA	Transfer station (receiving)
City of Seattle South Transfer Station	130 S Kenyon St Seattle, WA	Transfer station (receiving)
Republic Black River Transfer Station	501 Monster Road SW, Renton, WA	Transfer station (receiving)
Waste Management Alaska Street Reload Facility	70 South Alaska Street Seattle, WA	Transfer station (receiving)
Waste Management Eastmont Transfer Station	7201 W Marginal Way SW Seattle, WA	Transfer station (receiving)

Recommendations

SPU evaluated several options to expand and enhance its efforts to improve diversion of C&D debris from landfill. Based on this evaluation, SPU makes two recommendations.

Expand recycling market development for construction and demolition debris to support diversion of these materials from landfill

Expanded market development activities would support the sustainability and resilience of existing C&D recycling markets and foster new recycling markets to increase opportunities to recycle additional types of C&D materials. This strategy involves expanding efforts around recycling markets for asphalt shingles and clean wood as well as continued collaboration with King County Solid Waste Division on market development. Based on market conditions, SPU plans to periodically evaluate and reconsider the list of C&D materials proposed for disposal bans.

Enhance diversion of construction and demolition debris at transfer stations

This strategy includes enhancing education at transfer stations for self-haul customers who bring mixed C&D loads because 62% of self-haul waste is C&D debris and a large portion of this material is covered by existing C&D disposal bans5F. Education would address the availability of local C&D recycling facilities and the list of recyclable C&D materials banned from disposal. Transfer station staff may redirect customers to these local C&D recycling facilities. SPU would also evaluate options for its transfer stations to capture reusable materials from loads that contain mainly one type of recoverable C&D material, such as reusable building materials and salvaged lumber.