



Construction Waste Management for LEED™ 2.1 in Seattle

This fact sheet provides information and resources to assist Seattle area contractors in achieving LEED™ waste management goals and is one of several in a series on how LEED™ applies to you. See the factsheet [A Contractor's Introduction to LEED™](#) for an overview of the U.S. Green Building Council's LEED™ certification system, as it applies to contractors. The Resource Venture also offers free information, assistance and referrals to help you achieve your project's LEED™ goals.

LEED™ 2.1 Materials & Resources Credits 2.1 & 2.2: Construction Waste Management

The **intent** of this credit is to divert construction, demolition and land clearing debris from landfill disposal; redirect recyclable recovered resources back to the manufacturing process; and redirect reusable materials to appropriate sites.

Develop and implement a waste management plan, quantifying material diversion goals. Calculations can be done by weight or volume, but must be consistent throughout.

- Credit 2.1 (1 point) Recycle and/or salvage at least 50% of construction, demolition and land clearing waste
- Credit 2.2 (1 point) Recycle and/or salvage an additional 25% (75% total) of construction, demolition and land clearing waste

The contractor will usually be required to achieve the 75% rate on LEED™ projects. Fortunately, the Seattle/King County area has a strong infrastructure for reusing and recycling construction waste making a 75% recycling rate highly achievable. And high local garbage disposal costs make recycling very cost-effective.

LEED™ Documentation Requirements

Each credit a project attempts to achieve using the LEED™ system requires documentation to prove the activity was completed. LEED™ 2.1 uses LEED™ Letter Templates to certify that LEED™ requirements are met for each prerequisite and credit. Additional documentation may still be required. Because the contractor is responsible for construction waste management, the contractor will generally be responsible for completing the required LEED™ Letter Template documentation for these two credits. The documentation required is:

- Provide the LEED™ Letter Template, signed by the architect, owner or other responsible party, tabulating the total waste material, quantities diverted and the means by which diverted and declaring that the credit requirements have been met.

Additional Recommended Documentation

The following documentation is recommended as good practice for operating an environmentally responsible job-site and as back up for an audit of your project's LEED™ application. A portion of the credits in each application will be audited, and the contractor should be prepared with back-up documentation for credits they are involved in implementing.

■ A Waste Management Plan

LEED™ projects will generally require a plan and regular submittals tracking progress. Develop a plan that shows how you will achieve the required recycling rate, including materials to be recycled or salvaged, cost estimates comparing recycling to disposal fees, materials handling requirements and how you will communicate the plan to the crew and subcontractors. Require your subcontractors to adhere to the plan in their contracts.

The [Contractors Guide](#) (see *Where to Get More Information*) has a sample waste

management plan and worksheet for calculating cost savings from recycling.

■ Recycling, Salvage and Disposal Calculations

Develop a system for tracking the volume or weight of all materials salvaged, recycled and disposed of during the project. At the end of the project, or more frequently if required in the specifications, submit a calculation documenting the project achieved a 50% or 75% diversion rate. (The rate will depend on the goals set for the project.)

Construction Waste Management Guidelines

Success for this credit hinges on the contractor. It will be up to you to develop a Construction Waste Management Plan and track the recycling rate. To guarantee success, make sure your crew and subcontractors are aware of the recycling plan and understand its importance. One effective way is to address construction recycling plans in pre-construction and construction progress meetings. The following guidelines will help you plan and implement a successful program.

- The following materials are readily recyclable in the Seattle area and generally cost less to recycle than to dispose of as garbage:

- Cardboard
- Clean wood (Includes engineered products. Nails OK.)
- Concrete, asphalt, brick and other cementitious materials
- Drywall
- Land clearing debris
- Metals
- Paper and beverage containers from the job shack
- Window glass

- Additional materials that may be cost-effective to recycle are:

- Acoustical ceiling tiles
- Asphalt roofing
- Carpet and carpet pad

- Fluorescent lights and ballasts
- Paint (through hazardous waste outlets)
- Plastic film (sheeting, shrink wrap, packaging)

To find recyclers for these and other materials check out the [Construction Recycling Directory](#) for Seattle/King County (see *Where to Get More Information*).

■ Co-mingled vs. source separated

In Seattle, CDL can be collected, hauled and recycled as either:

Source separated: Recyclables are placed into separate containers on the job-site as they are generated, i.e. drywall in one container, wood in another. Source separating is generally more cost effective than disposal or co-mingled recycling. It also helps create higher end markets for recyclables such as the manufacture of new recycled-content building materials.

Construction Waste Management Guidelines (continued)

Co-mingled: Recyclables are placed into one container and hauled off-site to a sorting facility for separation and recycling, i.e. wood, metal, cardboard.

To achieve LEED™ recycling rates, you will need to source separate recyclables or source separate in combination with co-mingled. If using a co-mingled service, specify your co-mingled container is hauled directly to a material recovery facility with a very high recycling rate. To find out what the recycling rate is for these facilities, visit King County's Web site and read their [Co-Mingled CDL Recycling Facilities Report](#) (see *Where to Get More Information*).

You will need to work with your recycling hauler to calculate and document your recycling rate in case this credit is audited for LEED™ documentation.

Refer to the [Contractors Guide](#) (see *Where to Get More Information*) for a sample waste management plan and worksheet for calculating cost savings from recycling.

■ City of Seattle CDL Recycling Requirements

Effective December 1, 2002 in the City of Seattle:

- Collection containers for recyclable CDL waste must be clearly labeled as recycling containers and have a list of acceptable and unacceptable materials prominently located on the container. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor. Any unlabeled container will be considered a waste container.
- The collection containers for recyclable CDL waste must contain no more than 10% non-recyclable material, by volume. This means job-sites should also have a container for collecting garbage.

Seattle Public Utilities will periodically inspect containers to enforce these requirements. Failure to comply with the provisions described above could eventually result in penalties or fines to the contractor and recycling hauler. If you have questions regarding this change, contact Liz Kain (Seattle Public Utilities) at (206) 684-4166.

■ Salvage and Reuse

There are a number of companies in Seattle that salvage building materials for reuse rather than recycling. Be sure to have one of these companies visit your site early in the project and identify the materials that are salvageable. Include time in your schedule for removal of these materials, and track the amount (weight or volume) of materials diverted for your calculation.

To find salvage companies, check out the [Construction Recycling Directory](#) for Seattle/King County (see *Where to Get More Information*).

If a portion of a building is being reused on a project, you can count the weight of those preserved materials in your calculations for this credit as well as for Materials and Resources Credit 1: Building Reuse.

However, individually salvaged materials specified for Materials and Resources Credit 3: Resource Reuse, cannot count for Credit 2: Construction Waste Management.

Cost

- In Seattle, the cost per ton to recycle a material is less than the cost per ton to dispose of it as garbage. For example, the current disposal tipping fees in Seattle range from \$75 to \$94 per ton. Various fees and taxes associated with garbage can also increase garbage costs by as much as 25%. In comparison, tipping fees for recyclables are less, ranging from \$0 to \$60 per ton, depending on the material(s) and current market. Co-mingled recycling costs less than refuse disposal but more than source separated recyclables.

Cost (continued)

- Some recyclers will actually pay for your source-separated construction waste (metals, for example). Salvage companies generally pay a small amount for materials they salvage, in other cases, they will take a material for free.
- Recycling does incur some costs - both administrative costs for planning and managing your recycling program and operational costs for siting, hauling and renting of any additional containers. However, with the exception of street use fees paid to site containers on a public street, costs for running a recycling program are minimal and are usually offset by the cost savings.

Where to Get More Information

- The **Resource Venture's** Sustainable Building Program offers free assistance for Seattle design and construction professionals.

www.resourceventure.org
(206) 389-7304

Call us to arrange a free visit to your job site or office. We can help you develop a waste management plan and address LEED™ questions.

Our Web site includes:

- Construction recycling information
- A directory of recycling companies
- Sample construction recycling specifications
- Other LEED™ credit fact sheets

The Resource Venture also provides the following great resources on our Web site, or you can call us for a hard copy:

- **Contractors Guide**
Simple how-to's for preventing waste, recycling and using recycled-content building products. Includes a sample waste management plan and worksheet to help contractors determine the cost-effectiveness of job-site salvaging and recycling.
- **Construction Recycling Directory**
A comprehensive listing of construction material recyclers in Seattle/King County.

■ Construction Works Program

Free assistance to building contractors on waste prevention, recycling and using recycled-content products on Seattle and King County job-sites. Contractor's achievements are publicly recognized. For information, call (206) 389-7304.

■ King County Solid Waste Division Co-mingled CDL Recycling Facilities Report

This report lists the monthly co-mingled CDL recycling rate of local material recovery facilities and the materials each facility recycles. The recycling rates are calculated from mandatory reports to King County from Waste Management and Rabanco, and voluntary reports from Recovery 1. The recycling rates and list of material recycled are helpful to determine which waste materials on your project will be source-separated or co-mingled in each construction phase. Visit King County's Web site at http://dnr.metrokc.gov/swd/bizprog/sus_build/commingled.htm.

■ LEED™ Reference Guide Version 2.0

The Reference Guide discusses the credits and prerequisites of the LEED Rating System™ in depth and provides information on documentation requirements. The architect can give the contractor photocopies of the credits and prerequisites for which the contractor is responsible, or the guide can be purchased at www.usgbc.org.

At Your Service

The Resource Venture provides *free* information, assistance and referrals to help Seattle design and construction professionals improve their building project's environmental performance. We are a partnership of the Greater Seattle Chamber of Commerce and Seattle Public Utilities.



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www.resourceventure.org / (206) 389-7304