

Setting up a Jobsite Recycling Program

A well thought out strategy is as helpful for managing jobsite waste as it is to any other aspect of planning and building. A waste management plan includes setting prevention goals, documenting waste generation and recycling rates, adapting designs to reduce materials, reducing packaging and other jobsite trash, and emphasizing reuse.

Understanding the conditions affecting waste management costs and recycling options in your area is the key to developing a successful waste management plan. There are many variables affecting cost and efficiency, including availability of local recyclers, disposal fees and fee structure, distances to landfills and recycling facilities, and whether pickup services are available.

Recycling Options

Commingled recovery allows for all recyclable waste to be collected in a roll-off container. Some recyclers accept self-hauled commingled loads. Materials can also be picked-up at regular intervals or an as-needed basis.

Self haul involves a greater time investment by the general contractor or project superintendent. On small jobs this may be a cost-effective way to facilitate recycling. In this method disposal fee savings should be calculated as a combination of transportation, avoided landfill tipping fees and labor costs. Effective use of this option will require keeping up to date on policies and fee structures of the various material outlets and recyclers.

Depending on the composition of the waste generated, a **combined approach** can work most effectively. If a large quantity of concrete is being generated, it may make sense to separate and self-haul this material.

Packaging waste is increasing on construction sites. One way to prevent a large quantity of cardboard waste is to request that suppliers ship items with less packaging, or use reusable packaging.

Revenues can also be generated by recycling. The buy-back price of old corrugated cardboard (OCC) fluctuates between \$12 - \$70 per ton, and it may makes sense to monitor prices if you are generating large quantities on the job (Call your community recycling center for information on current prices).

Refer to local government publications and online sources for further information.



Bright Ideas

Recycling containers must be at least as convenient to use as trash bins. If your jobsite is large, make certain that bins are centrally located and easily accessible. Effort should be made to see that containers do not become over full. To prevent unwanted drive-by dumping, locate recycling containers away from public sight and access.

Additional Information

The C&D Waste Reduction and Recycling series consists of 9 fact sheets, each focusing on a different aspect of waste management. Factsheets in this series include:

- What's in a Building: Composition Analysis of C&D Debris
- Onsite Source Reduction: Cutting the Scrap
- Setting up a Jobsite Recycling Program
- Deconstruction: New Opportunities for Salvage
- Calculating Effectiveness: The Waste Management Plan
- Reducing Waste for Building Owners
- Waste Recycling Through Commingled Recovery: the Summerland Heights Residential Development
- Deconstruction on Commercial Renovation Projects: the Victoria Street Presbyterian Sanctuary
- Source Reduction in Residential Remodeling: the Las Alturas Adobe

Other resources:

<i>Environmental Resource Guide</i> , American Institute of Architects	(800) 365-2724
<i>Environmental Building News</i> and <i>GreenSpec Product Directory</i>	(802) 257-7300
<i>Environmental Design & Construction Magazine</i>	(847) 291-5224
<i>Deconstruction</i> (video), Materials for the Future Foundation	(415) 561-6530
<i>Builder's Field Guide</i> , National Association of Home Builders	(202) 822-0200
<i>WasteSpec: Model Green Building Specifications</i> , Triangle J Council of Governments	(919) 549-0551
<i>Sustainable Building Technical Manual</i> , U.S. Green Building Council	(202) 828-7422

Visit these web sites for downloadable publications, listserve information, and links to other green building sites:

www.ciwmb.ca.gov	www.tjcog.dst.nc.us/cdwaste.htm	www.EDCmag.com
www.epa.gov/greenbuilding	www.buildinggreen.com	www.materials4future.org
www.aia.org	www.oikos.org	www.usgbc.org

The C&D Waste Reduction and Recycling Series is a joint project of the Santa Barbara County Solid Waste and Utilities Division, The Community Environmental Council, and The Sustainability Project.

For more information please contact U.S. EPA, Region 9 Office of Solid Waste and Pollution Prevention at (415) 972-3282.

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Conversion of Common C&D Waste Components

Space limitations and the cost of additional bins for source separated materials are the key factors affecting recycling on the jobsite. Consider the following conversion table to help estimate the size and number of containers you will require.

Material	lbs/cubic yard	yards/ton
Mixed Construction Waste	350	5.7
Wood	300	6.7
Drywall	500	4.0
Rubble	1,400	1.4
Cardboard	100	20.0
Landscape Debris	240-400	5-8

(A 20-yard "lowboy" roll-off with mixed construction waste weighs 8-10 tons.)



Profile: MarBorg Industries, C&D Materials Recovery Facility

MarBorg Industries, a waste hauling and recycling company, currently processes separated and commingled C&D debris loads. After a recent expansion of their facilities, MarBorg's processing capacity is now at 300 tons per day.

Materials accepted at MarBorg's C&D Material Recovery Facility include mixed dirt, concrete, concrete with rebar, rocks, bricks, tile and stucco, mixed wood waste, green waste, drywall, and metal loads. Their services include debris hauling and roll-off container rentals in 11, 17, 25, and 40 cubic yard sizes. Self-haul loads are also accepted.

Call MarBorg's Quarantina Street offices in downtown Santa Barbara for a schedule of prices and services at (805) 963-1852.

The Recycling Team:

Involve Crew and Subcontractors and Suppliers in Waste Reduction and Recycling

Subcontractors and workers are integral to the success of a recycling program. An effective program will include all project participants: subcontractors, workers and suppliers. Here are some things you can do to ensure recycling program success:

- x Include waste handling requirements in all project documents. Encourage suggestions from crew on improving efficiency or including additional materials.
- x Consider designating a crew member who has an interest in recycling as the jobsite recycling coordinator. Check in with them regularly to assist with troubleshooting and adopting new strategies. Form a waste management team for larger projects.
- x Allow time for a learning curve. As always, learning new procedures takes time. Initial savings garnered through recycling efforts may not seem like they compensate for extra time spent, but over time recycling strategies have been proven to pay off.
- x To reduce on-site waste, coordination among the workers and subcontractors is critical. Discuss your recycling program at safety meetings and other regular meetings.
- x Work with subcontractors to develop improved material handling methods. Efficient material use can be encouraged by ordering quantities and timing deliveries that coordinate accurately with project tasks. Purchasing in excess can increase damaged and stolen materials and encourage inefficient use. Just in time purchasing, and improved storage and handling can prevent damage or theft.
- x Waste reduction can be accomplished through contract structure. By making it part of the bidding process, subcontractors can be required to dispose of their own waste or required to use on-site recycling bins. For sample contract language refer to *WasteSpec*, published by the Triangle J Council of Governments (contact information on the back page).
- x A defined clean-up policy can designate storage areas and limit the length of time waste remains on site. When planned carefully, this can lessen the likelihood of drive-by contamination (the dumping of waste by unauthorized persons) and significantly improve the site appearance.
- x Ask suppliers to take back or buy back substandard or unused items. Request that suppliers deliver items on returnable pallets or reusable containers.

Tips for recycling bin use

- x Allocate adequate space for separation of recyclables. If space is limited, identify two or three materials that will be targeted, and obtain small bins for just these.
- x Post signs that clearly designate recycling containers with lists of what is recyclable.
- x Check bins regularly for non-recyclable items.
- x Check trash bins to see if recyclables are being discarded.
- x Follow-up with crew and subcontractors on an ongoing basis.