

CONSTRUCTION & DEMOLITION DEBRIS DIVERSION REFERENCE MANUAL



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BACKGROUND

Through recovery of materials and source-reduction activities, the Construction & Demolition Debris Diversion Ordinance establishes recycling standards and requires developers and builders to incorporate these standards into their projects' construction process. The construction waste ordinance was originally added to the City of Burbank Municipal Code by Ordinance No. 3652, effective 11/20/04, as a companion project to the Green Building and Sustainable Architecture Program. The ordinance was amended effective July 1, 2007, and is now mandatory for applicable projects. The California Green Building Standards Code expanded the scope of the requirements to include projects subject to CalGreen.

WHAT ARE CONSTRUCTION AND DEMOLITION MATERIALS?

C&D MATERIALS	
Materials	Components
• Wood	• Lumber, plywood, scraps, laminates (no pressure-treated wood)
• Drywall	• Sheetrock, gypsum, plaster
• Metals	• Pipes, rebar, flashing, steel, aluminum, copper, brass, stainless steel
• Plastics	• Vinyl siding, doors, windows, floor tiles, pipes
• Roofing	• Asphalt & wood shingles, slate, tile, roofing felt
• Rubble	• Asphalt, concrete, cinder block
• Brick	• Bricks and decorative blocks
• Glass	• Windows, mirrors, lights
• Miscellaneous	• Carpeting, fixtures, insulation, ceramic tile

Inert materials removed from the project site such as dirt, natural soil and gravel do not have to be recycled and are not included in the required recycling tonnage.

AFFECTED PROJECTS

The mandatory ordinance requires residential and nonresidential new construction, additions, remodels, renovation, tenant improvements and alteration projects that are 500 square feet or more in total scope of work to recycle a minimum 50% of construction and demolition debris. Typically, most projects will send all of the debris to one waste hauler that does the actual separation of materials for recycling. In addition, all demolition projects, regardless of size, will have to recycle 50% of debris. The debris can be taken to a recycling facility, or a waste hauling service that recycles C&D materials can be hired to transport it. The goal of the ordinance is to divert the debris away from the landfill. Names of recycling centers are provided on pages 5-7 of this Manual.

Summary of projects affected by this mandatory ordinance:

- All residential and nonresidential re-roofs (temporarily exempted due to facility availability)
- All residential and nonresidential demolitions
- All new buildings
- Residential additions and alterations that increase the building's conditioned area, volume or size
- Non-residential additions of 1,000 square feet or greater
- Non-residential alterations, remodels, renovation and tenant improvements with a valuation or \$200,000 or greater

EXAMPLE 1: If a residential project includes an addition to the footprint of the building, it is an affected project and therefore 50% of the debris must be taken to a recycling facility.

EXAMPLE 2: A report by the National Association of Home Builders estimates a typical new 2,000-square-foot single-family home produces 50 cubic yards, or four tons, of debris. This project would qualify as an affected project and would have to recycle 50%, or two tons, of debris

EXAMPLE 3: If a commercial alteration has a valuation of \$200,000, it is an affected project and 50% of the debris must be recycled.

COMPLIANCE

Diversion of debris to a recycling facility does not require an additional step by the contractor or homeowner/builder. The difference is where the debris is hauled – to a recycling facility instead of a landfill.

The same methods of collection or containment that are used for waste disposal can be used for recycling. Typically, a bin from a waste hauling company is rented to contain and transport the debris from the job site. Many of the waste haulers licensed to do business in the City already recycle the C&D debris they transport because they find it a savings to do so. Using one of the waste haulers that already recycles debris is an acceptable method of meeting the requirements of the ordinance. A list of waste haulers can be found on page 7.

Sorting the waste into different types of materials is not required or necessary to recycle. The debris can be taken to one of three local Material Recovery Facilities (MRFs) that accept and sort co-mingled debris. By pre-sorting the debris, however, the contractor or homeowner could get money back from the recycling facility for certain materials. A complete list of recycling facilities and MRFs can be found on pages 5-7.

CALCULATION OF DEPOSIT

The amount of the refundable deposit is based on the total tonnage of debris generated. In a report entitled “*Characterization of Building-Related Construction and Demolition Debris in the United States*,” the U.S. Environmental Protection Agency determined a pounds/square foot debris generation rate for the major types of construction and demolition projects.

This chart below illustrates the typical amount of construction debris created in pounds per square foot for the most common types of residential and non-residential projects.

ESTIMATED DEBRIS GENERATION (LBS/SF)			
	NEW	DEMOLITION	RENOVATION
RESIDENTIAL	4.5	115.0	24.0
NONRESIDENTIAL	4.0	155.0	3.0 - Medical Office 5.0 - Tenant Improvement 10.0 - Retail Space
	SHINGLES ONLY		SHINGLES & SHEATHING
REROOFS	2.5		5.0

The deposit amount is calculated at a rate of \$250 for the first ton and \$50 for each additional ton, with a cap of \$1,000 for residential and \$5,000 for nonresidential projects. An administrative fee amount of \$50 will be collected with the deposit and is not refundable. The following schedule lists the deposit information:

DEPOSIT			
	1st Ton	Ea. Add'l Ton	Max. Deposit
RESIDENTIAL	\$250	\$50	\$1,000
COMMERCIAL	\$250	\$50	\$5,000

The following are two examples of how the refundable deposit is calculated. Staff can assist the applicant with calculating the deposit.

EXAMPLE 1: To calculate the deposit amount for a 500-square-foot residential addition, multiply 500 sf by 4.5 lbs/sf, the value for new residential construction from the first table above. The product of this is 2,250 lbs. Rounding down to one whole ton (2,000 lbs.), the total deposit amount for this particular project is \$250, for the first whole ton.

EXAMPLE 2: To calculate the deposit amount for a 3,000-square-foot tenant improvement, multiply 3,000 sf by 5.0 lbs/sf, the value for a Tenant Improvement from the first table above. The product of this is 15,000 lbs or 7.5 tons. Rounding down to 7 whole tons, the deposit for the first ton is \$250 plus \$50/ton for each of the 6 additional tons. Six tons times \$50 equals \$300. The total deposit for this particular project is \$250 plus \$300 = \$550.

RECYCLERS IN THE BURBANK AREA

The following list is reprinted from the CalRecycle website, which provides a searchable database by county and material for C&D recyclers. All sites listed were chosen from the Glendale – San Fernando Valley area when available. When sites are not listed for these areas, the closest recyclers have been listed.
www.calrecycle.ca.gov/ConDemo/Recyclers/RecyclerSearch.aspx

This list is a sampling of facilities in the area and is for information purposes only. The City is not endorsing or recommending any of the listed providers. If you are a licensed recycling business and would like to be listed, please contact the Building Division.

ASPHALT		
Calmat-Sun Valley Rock www.vulcanmaterials.com	Sun Valley	(818) 983-0146 marketing@calmat.com
Looney Bins Inc. www.looneybins.com	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
Newman And Sons, Inc. www.newmansons.com	Sun Valley	(818) 767-0700
Pavement Recycling Systems		800-966-7774
Recycled Base Materials, Inc.	Sun Valley	818) 767-3088 recycledbase@aol.com
Valley Base Materials	Sun Valley	(818) 767-3088 recycledbase@aol.com
Vulcan Materials-Sun Valley www.vulcanmaterials.com	Sun Valley	(818) 768-4157 CalMat_info@VMCmail.com
BRICK		
Looney Bins Inc. www.looneybins.com	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
CARPET		
Dupont Carpet Reclamation/recycle Center www.flooring.dupont.com	Van Nuys	(818) 374-5200
American Reclamation www.americanreclamationinc.com	Los Angeles (Atwater)	(818) 552-4068 info@socoastrec.com
CONCRETE		
Calmat-Sun Valley Rock www.vulcanmaterials.com	Sun Valley	(818) 983-0146 marketing@calmat.com
Looney Bins Inc. www.looneybins.com	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
Newman And Sons, Inc. www.newmansons.com	Sun Valley	(818) 767-0700
Pavement Recycling Systems		800-966-7774

Recycled Base Materials, Inc.	Sun Valley	(818) 767-3088 recycledbase@aol.com
Valley Base Materials	Sun Valley	(818) 767-3088 recycledbase@aol.com
Vulcan Materials-Sun Valley www.vulcanmaterials.com	Sun Valley	(818) 768-4157 CalMat_info@VMCmail.com
DRYWALL		
Looney Bins Inc. www.looneybins.com	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
FLOORING		
Dupont Carpet Reclamation/recycle Cntr www.flooring.dupont.com	Van Nuys	(818) 374-5200
GLASS		
Ultraglass, Inc. www.ultraglas.com	Chatsworth	(818) 772-7744 sales@ultraglas.com
GRAVEL		
Looney Bins Inc. www.looneybins.com	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
METAL		
A-1 Metals Recycling	Sun Valley	(818) 767-4388 A1METALJA@aol.com
Kramar's Iron & Metal Incorporated www.kramarmetals.com	Sun Valley	(818) 767-4303 kimco@sbcglobal.net
Looney Bins Inc. www.looneybins.com	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
Valley Iron & Metal Company	Sun Valley	(323) 875-2520
OCC - CARDBOARD		
Looney Bins Inc. www.looneybins.com	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
PAINT		
Calabasas Landfill	Agoura	(818) 889-1430
Master Recycling Center, Inc.	El Monte	(626) 350-4404
PALLETS		
Looney Bins Inc. www.looneybins.com	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
PLASTIC, PVC		
Active Recycling	Los Angeles	(323) 295-7774

<u>ACTIVERECYCLING@aol.com</u>		
American Reclamation <u>www.americanreclamationinc.com</u>	Los Angeles (Atwater)	(818) 552-4068 info@socoastrec.com
Calabasas Landfill	Agoura	(818) 889-1430
Master Recycling Center, Inc.	El Monte	(626) 350-4404
ROOFING		
Active Recycling <u>ACTIVERECYCLING@aol.com</u>	Los Angeles	(323) 295-7774
SAND		
Looney Bins Inc. <u>www.looneybins.com</u>	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
SOIL		
Looney Bins Inc. <u>www.looneybins.com</u>	Sun Valley	(818) 768-7197 mikehammer@looneybins.com
WOOD		
Bradley Landfill And Recycling <u>www.wm.com</u>	Sun Valley	(818) 767-6180 webmaster@wm.com

LOCAL MRFs (FOR MIXED WASTE DEBRIS):

- Downtown Diversion - 2424 E Olympic Blvd., Bldg.#3, LA 90021, (213) 612-5005, www.downtowndiversion.com
- Community Recycling & Resource Recovery, 9147 DeGarmo Av., Sun Valley, (818) 767-6000, www.communityrecycling.net
- Looney Bins, Inc., 11616 Sheldon St. ,Sun Valley, (818) 252-0019, www.looneybins.com

WASTE HAULERS THAT RECYCLE C&D DEBRIS

The recycling requirement can be fulfilled by utilizing a licensed waste hauling service that recycles the mixed C&D debris. The following is a list of licensed waste haulers that recycle:
(The City is not endorsing or recommending any of the listed providers. If you are a licensed recycling business and would like to be listed, please contact the Building Division.)

American Reclamation/South Coast Fibers	Los Angeles	(888) 999-9330
BFI Waste Systems	Sun Valley	(888) 742-5234
Crown Disposal	Sun Valley	(818) 767-0675
Frank's Disposal	Sun Valley	(818) 352-5001
Looney Bins Inc. www.looneybins.com	Sun Valley	(818) 768-7197
Metropolis Disposal		(818) 901-2020
Southland Disposal		(818) 500-4884

RESOURCES

The BURBANK RECYCLE CENTER accepts (but does not pay for) scrap metal, mixed waste plastics and mixed waste paper. The Center accepts and pays for cardboard. Please call the Recycle Center at (818) 238-3900.

HAZARDOUS/UNIVERSAL WASTES: For large quantities of electronics, fluorescents, batteries or other hazardous waste, call Burbank Recycle Center (818) 238-3900.

The CONSTRUCTION MATERIALS RECYCLING ASSOCIATION is a trade group that provides support to the recycling industry and promotes the use and recycling of C&D debris. The web site is www.cdrecycling.org. Phone (818) 548-8996. Fax (818) 265-5171.

CalRecycle, California's Department of Resources Recycling and Recovery, created a tool to help characterize a C&D waste stream by visually estimating the composition of C&D samples. The tool helps determine the percentage of the various materials in the C&D disposed waste stream. See: <http://www.calrecycle.ca.gov/climate/calculator/>

DATABASES:

- Construction Directory and Demolition Recyclers, City of Los Angeles, published 2005. www.lacity.org/SAN/docs/c-and-d-recycling-guide.pdf
- C&D Debris Recyclers Database for Los Angeles County, published by CalRecycle, www.ciwmb.ca.gov/ConDemo/
- Construction Directory and Demolition Recyclers, City of Los Angeles, published 2005. www.lacity.org/SAN/docs/c-and-d-recycling-guide.pdf
- C&D Diversion informational Guide, published by CalRecycle www.calrecycle.ca.gov/LGCentral/Library/canddmodel/
- California Green Building Standards Code (CALGreen) www.bsc.ca.gov/Home/CALGreen.aspx

REUSE OPPORTUNITIES:

- Habitat for Humanity, Pasadena, (626) 792-3838 or www.sgvhabitat.org
- CalMAX (California Materials Exchange), 877-520-9703 or www.CalMAX.org
- LA SHARES, (213) 485-1097 or www.lashares.org (For old, excess or unwanted office furniture, office equipment, office supplies, given to schools and non-profit agencies)
- *The Recycler* publication (818) 772-3590
- Craig's list, www.losangeles.craigslist.org
- Freecycle, www.freecycle.org
- The Reuse People, 3015 Dolores Avenue, Los Angeles, CA 90065, 818-244-5635 www.thereusepeople.org

APPLICATION PROCESS

Compliance with the ordinance can be achieved through one of two options.

OPTION 1:

Under Option 1, the application does not have to fill out any special forms or submit extra plans. The amount of generated debris will be determined during Plan Check Review based on the default waste generated per square foot values that have been determined by the U.S. Environmental Protection Agency for the main types of construction projects. A chart containing these rates can be found on page 4.

A \$50 administrative fee and refundable deposit will be paid at the time of permit issuance. The deposit is calculated at a rate of \$250 for the first ton and \$50 for each additional ton of debris.

During the course of construction, recycle at least 50% of the solid waste tonnage by taking the debris to a recycling facility or hiring a waste hauler that recycles. A list of what qualifies as C&D debris materials is included on page 2. Inert materials removed from the job site such as dirt, natural soil and gravel do not have to be recycled and are not included in the required recycled tonnage.

The deposit is refundable upon submittal of recycling receipts and a Request for C&D Deposit Refund form within 90 of an approved Final Inspection. A refund check will be mailed to the person or company that paid the deposit fee within 30 days.

Construction projects that were started without required permits forfeit refund of the deposit because diversion of 50% of the total debris cannot be confirmed.

OPTION 2:

Option 2 is an alternative method for applicants who wish to itemize and provide their own debris estimate. The applicant may design their own Waste Management Plan or used the sample long form provided by the Building Division. The WMP must be certified by a licensed contractor, engineer, or architect.

Waste Management Plan – Long Form

Project Address: Address where work is taking place

Contact Information: The Contact Name should be the contractor or the homeowner/builder. Please include company name and address, or home address if homeowner/builder, the phone number and email address.

Column A: The Total Tons Debris column is an *estimate* of the **total quantity of discarded materials** by material type that will be generated from all phases (i.e. demolition and construction) of the project. Quantities must be listed in tons. If quantities are only available in yards or square feet, use the *Materials Conversion Worksheet* to convert material volume to tons.

Column B: The Reuse column is for materials in **usable condition only that are being reused**. Examples include wood from foundation forms that will be reused on this job, usable lighting fixtures, windows, doors, lumber, cabinets, etc.

Column C: The Recycle column is for C&D materials that will be recycled.

Column D: The Disposal column is used for materials that **will not** be reused or recycled such as painted wood, pressure-treated wood, insulation and hazardous materials.

Note: When filling out all columns, indicate quantities in tons for each material. The quantities listed in Columns B, C, and D must add up to the quantity for that material listed in Column A. For example, if your project will generate 20 tons of concrete debris and you are planning on recycling half and disposing half, you would list 20 tons in Column A, and then put 10 tons in Column C and 10 tons in Column D.

Column E: List the facility or service provider you intend to use for reusing, recycling or disposing of each material generated from your project. Appropriate facilities are listed on pages 5-7 of the **Reference Manual**. Facilities not appearing on the list must be verified by City staff.

Non-Recyclable Debris: Hazardous or similar debris that may not be reused or recycled.

Recyclable Mixed Debris: This line refers to debris generated **in addition to** the separated materials listed in the lines above. In order to receive credit for recycling Mixed Debris, a facility or service recognized by the City must be utilized. Bulk Mixed Debris may not be reused. A list of facilities that provide mixed C&D debris recycling services is provided on pages 5-7. This information is also available on the Building Division's website at www.burbankca.org/building.

Column Totals: Add up quantities listed in each column and indicate totals at the bottom.

Question 1: Fill in the blanks using the quantities of C&D debris listed at the bottom of each Column Totals for B, C, and D, and divide by Column A to determine the percentage of waste reused or recycled. This amount should be equal to or greater than 50%.

Question 2: Take total tons from Column A and subtract one ton. Multiply result by \$50 per ton and enter the product on line b. Add line a (\$250) and line b. This sum is the amount of the **total refundable deposit**.

Sign and date the WMP at the bottom.

Recycling Summary Report (RSR)

The RSR form is a request for refund of the deposit that documents **actual** quantities recycled and facilities or service providers used rather than estimates. RSR quantities listed must be based on verifiable data gathered throughout the project, e.g. weight tags, gate receipts, etc.

The RSR must be submitted within 90 days of Final Inspection approval to obtain a refund of the recycling deposit that was collected at the time of application submittal. The RSR and accompanying receipts will be reviewed for compliance. If compliance is confirmed, a refund check will be mailed within 30 days of submittal to the person or company who paid the fee.

Applicants who fail to divert 50% or more of the debris from their project may not receive a refund of the recycling deposit. Construction projects that were started before the issuance of a permit or were issued a Notice to Stop Work order also forfeit refund of the deposit.

C&D Materials Conversion Worksheet

Use this worksheet to convert from common construction units to TONS. This worksheet can be used to complete a Waste Management Plan (WMP) or Recycling Summary Report (RSR), **but it does not have to be completed or submitted**. WMPs and RSRs should be submitted with all materials listed in TONS.

Step 1 - Calculate scrap or waste quantity for each material in typical units - square feet, board feet or cubic yards. Calculate from materials take offs and waste factors. Enter into Column I.

Step 2 - Multiply by the conversion factor in Column II and put answer in Column III.

Step 3 - Transfer the TONS listed in Column III to the WMP or RSR, Column A, and follow the directions on those forms.

<u>Material Category</u>	Column I		Column II	Column III
	<u>Volume</u>	<u>Unit</u>	<u>Tons/unit</u>	<u>Tons</u>
Asphalt/Concrete	Asphalt (broken)	cy x	0.7	=
	Concrete (broken)	cy x	0.9	=
	Concrete (solid slab)	cy x	1.3	=
Brick/Masonry/Tile	Brick (broken)	cy x	0.7	=
	Brick (whole, palletized)	cy x	1.512	=
	Masonry block (broken)	cy x	0.6	=
	Tile	sq ft x	0.00175	=
Building Materials (doors, fixtures, windows/plate glass, cabinets)		cy x	0.15	=
Cardboard		cy x	0.05	=
Carpet	flat	sq ft x	0.0005	=
	loose	cy x	0.3	=
Carpet Padding/Foam	flat	cy x		
	loose	sq ft x	0.00013	=
Ceiling Tiles	whole (palletized)	sq ft x	0.0003	=
	loose	cy x	0.0875	=
Drywall, new or used	1/2"	sq ft x	0.0008	=
	5/8"	sq ft x	0.00105	=
	mixed	cy x	0.25	=
Scrap Metal		cy x	0.453	=
Wood & Pallets	clean, unpainted	bd ft x	0.00138	=
	(no pressure treated lumber) loose	cy x	0.15	=
Non-Recyclable Debris		cy x	0.175	=
Recyclable Mixed Debris		cy x	0.175	=
<i>cy = cubic yards sq ft = square feet bd ft = board feet</i>				

Be prepared to provide weight receipts or other verifiable documents.

Construction & Demolition Debris Project Tracking Sheet – Part I

This sheet can be used prior to completing the C&D Debris Recycling Summary Report to help with recording the various materials that will be generated at each major phase of the project. Use of this sheet is optional, not required.

Material Type	Foundation		Floor		Frame		Final	
	Reuse	Recycle Dispose	Reuse	Recycle Dispose	Reuse	Recycle Dispose	Reuse	Recycle Dispose
Asphalt & Concrete								
Brick/Masonry/Tile								
Building Materials (doors, windows, fixtures)								
Carpet								
Carpet Padding/Foam								
Cardboard								
Ceiling Tile (acoustic)								
Drywall (used)								
Drywall (new, unpainted sheets or scrap)								
Scrap Metal								
Unpainted Wood & Pallets								
Other (Do not include dirt)								
Mixed Debris								
Column Totals								

Construction & Demolition Debris Project Tracking Sheet – Part II

This sheet can be used prior to completing the C&D Debris Recycling Summary Report to help with recording the various materials that will be generated at each major phase of the project. Use of this sheet is optional and not required.

Material Type	A Reused/Salvaged	B Recycled	C Disposed	D Destination
Example: Cardboard		<i>1.5 cy, 2.5 cy, 3.5 cy</i>	<i>1.5 cy</i>	<i>Downtown Diversion</i>
Asphalt & Concrete				
Brick/Masonry/Tile				
Building Materials (doors, windows, fixtures)				
Carpet				
Carpet Padding/Foam (only)				
Cardboard				
Ceiling Tile (acoustic)				
Drywall (used)				
Drywall (new, unpainted sheets or scrap)				
Scrap Metal				
Unpainted Wood & Pallets				
Other (don not include dirt)				
Mixed Debris				
Column Totals				