

SECTION 01505

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

1.01 SUMMARY

- A. Section specifies diversion of construction and demolition (non-hazardous) debris from landfill.
- B. Related requirements specified elsewhere include: *[Edit to suit]*
 - 1. Submittals to accompany requests for payment - Section 01290, Payment Procedures.
 - 2. General requirements for meetings - Section 01310, Project Management and Coordination
 - 3. General requirements for submittals - Section 01330, Submittal Procedures
 - 4. Definition of general environmental terms - Section 01420, References
 - 5. Requirements for temporary facilities and controls as indicated in Section 01500, Temporary Facilities and Controls
 - 6. General requirements for demolition operations - 01735, Selective Removal and Repair

1.02 SYSTEM DESCRIPTION

- A. Performance Requirement: Divert a minimum of **[50] [70] [85]** percent of construction and demolition (non-hazardous) waste from landfill. *[In establishing percentage, verify with local jurisdiction, whether jurisdiction will count concrete, earth, and hard surface paving into diversion totals].*

1.03 DEFINITIONS

- A. "Conversion Rate" means the rate set forth in the standardized Conversion Rate Table approved by the City of [] for use in estimating the weight of materials identified in the Waste Management Plan.
- B. "Divert" means to use material for any purpose other than disposal in a landfill or transfer facility.
- C. "Good faith" shall be as defined by law.
- D. "Net cost" means that the following have been subtracted from the cost of separating and recycling:
 - 1. Revenue from the sale of recycled or salvaged materials
 - 2. Landfill tipping fees saved due to diversion of materials from the landfill.
- E. "Recycling Service" means an off-site service that provides processing of material and diversion from landfill.
- F. "Hauler" means the entity who transports construction and demolition debris to either a landfill or a recycling service.

1.04 QUALITY ASSURANCE

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- A. The Contractor shall obtain all special permits and licenses and meet all special requirements for performance and completion of the work of this section.
- B. Regulatory Requirements
 - 1. Comply with City of [] Construction and Demolition Recycling Debris Ordinance.
 - 2. Approval of the Waste Management Plan by City of [] is required before beginning on-site mobilization. *[Include if this requirement is mandated by the jurisdictional authority]*
- C. Recycling Service Company Qualifications – any of the following:
 - 1. Listed in the City [], "...Directory of Recycling Services for Construction and Demolition Material", latest edition. *[Edit to suit; use if available]*
 - 2. Listed in the Alameda County Waste Management Authority's "Builders' Guide to Reuse and Recycling, A Directory for Construction and Demolition Materials, latest edition *[Edit to suit]*
 - 3. Any recycling services that will certify in writing that accepted waste will be diverted from landfill, not dumped illegally, or dumped at sea.

1.05 SUBMITTALS

- A. Submit specified Waste Management Plan using written and graphic representation to indicate how waste will be diverted from landfills. Include procedures and schedule for debris disposal. Submittal is required within 7-calendar days after receipt of Notice to Proceed.
- B. Submit certification from recycling services that are not listed in [Alameda County Waste Management Authority's "Builders' Guide to Reuse & Recycling, A Directory For Construction and Demolition Materials"] [the City _____, "...Directory of Recycling Services for Construction and Demolition Material "] *[Edit to suit]* Written documentation must be provided identifying where the construction and demolition material is taken, what method or process is being used to recycle the material, and identifying applicable state and local permits held by the recycling service provider and recycling facility.
- C. Submit completed Waste Management Plan at 50 percent progress payment and at 100 percent status report completion of the Work. 100 percent status report is required before full release of retention.

1.06 WASTE MANAGEMENT PLAN

- A. Plan Development: Develop a plan for diverting the specified percentage of construction debris from landfill. Include in plan either or both written and graphic information to indicate how waste will be diverted from landfills.

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1. Include in Plan on-site recycling of construction debris and also off-site diversion from landfill. *[Include only for new construction and if the distinction between on-site recycling and off-site diversion is of importance]*
2. [Submit and discuss the plan at or before the Pre-construction meeting.]
[Submit within 7-calendar days after receipt of Notice of Award of Bid, or prior to any waste removal, whichever occurs sooner.] *[Edit to suit]*
3. Propose means and methods for collecting and separating each type of debris deemed reusable or recyclable.
4. Identify the off-site recycling service and hauler of each designated debris item, who have agreed to accept and divert that item from landfill, in the proposed quantities anticipated. Schedule each item and list off-site recycling service and hauler company name, telephone number, address, and person contacted.
5. Include a "good faith" estimate of each type of construction waste that would be generated if no diversion methods were implemented. Submit with calculations based upon weight of each material *[Weight is measure most commonly used by landfills, revise if 'volume' measure is required][if necessary, add requirements for calculating based upon 'dry' vs. 'wet' weight].*

The following items are subject to the "good faith" estimate and diversion requirement: *[Add to or edit per project; items "i" thru "q" may be grouped as a single item entitled "mixed waste" for demolition of entire buildings and site demolition work.]*

- a. Asphalt concrete
 - b. Portland cement concrete
 - c. Brick, clay products and ceramic tile
 - d. Aggregate
 - e. Clean earth fill
 - f. Metals
 - g. Wood products, including pallets
 - h. Plant and tree trimmings *[may be included in wood products if so accepted by recycling service]*
 - i. Gypsum board
 - j. Latex paint *[not applicable to demolition work]*
 - k. Plastic piping
 - l. Glass, excluding that used for containers
 - m. Insulations
 - n. Acoustical ceiling tiles, panels and boards
 - o. Resilient floorings
 - p. Carpets, and polyurethane foam pads *[other types of pads may be included if accepted by recycling service]*
 - q. Cardboard and paper products
 - r. *[other]*
6. Calculate quantities, and convert volume measurements to weights in accordance with the defined Conversion Rate.

B. Plan Implementation

1. Maintain log of each load, of each category item diverted from landfill. Log in separately debris sent to a Class III landfill and materials sent to recycling facilities.
 - a. Include in log, type of load, load weight, name of hauling service; recycling service or landfill, and date accepted by recycling service or by landfill.
 - b. Owner reserves the right to audit the log at any time, retain and make available, all weight tickets, copies of receipts and invoices.
 - c. Units of measure: Use same units as stated in the approved plan "good faith" estimate of construction waste that would be generated if no remedial methods were implemented.

 2. Material handling
 - a. Separation facilities
 - 1) Designate a specific on site area or areas to facilitate separation of materials for potential reuse, salvage, recycling, and return.
 - 2) Keep waste bins and pile areas neat and clean. Clearly mark bins for each category of waste. Do not commingle non-recyclable waste with materials designated for reuse or recycling.
 - b. Environmental controls during handling, storage, or transport: Do not permit designated materials to become contaminated or to contaminate site or surrounding areas.

 3. Training and coordination
 - a. Furnish copies of the Waste Management Plan to all on-site supervisors, each subcontractor, the Owner, and the Architect.
 - b. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all entities at the appropriate stages of the Project.
 - c. Meetings: Include construction waste management on the agenda of meetings. At a minimum, discuss waste management goals and issues at the following meetings:
 - 1) Pre-bid meetings.
 - 2) Pre-construction meeting.
 - 3) Regularly scheduled job-site meetings.
- C. Hazardous waste: Separate hazardous waste. Store and dispose of according to local regulations.

PART 2 PRODUCTS

2.01 MATERIALS, EQUIPMENT AND FACILITIES

- A. Furnish all materials, tools, equipment, devices, appurtenances, facilities, and services required for performing waste management of construction and demolition debris covered under this Section's scope of work.

- B. Facilities authorized to accept mixed C&D waste for recycling and facilities that accept other types of waste are listed in the Alameda County Waste Management Authority's "Builder's Guide to Reuse and Recycling: A Direction for Construction and Demolition Materials," latest edition.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Perform as required in the approved Waste Management Plan.

3.02 DISPOSAL OF DEBRIS

- A. Dispose of waste, trash, and debris in a safe, acceptable manner, in accordance with applicable laws and ordinances and as prescribed by authorities having jurisdiction. Burying of trash and debris on the site will not be permitted.
- B. Remove demolished materials from site as work progresses. Remove debris from the site so that its presence will not delay the progress of the work.
- C. Debris shall be the property of the Contractor and shall be removed and disposed of in a legal manner off the property in accordance with the approved Waste Management Plan described herein. Location of recycling facility or landfill and length of haul shall be the Contractor's responsibility.

END OF SECTION

Construction & Demolition Waste Management Plan

Many of the materials generated from your project can be recycled. You are required to list materials that will be reused, recycled or disposed from your project.

The required goal is to reuse or recycle at least 50% of project waste.

Use **tons** to quantify total estimated waste and percentages for materials (see attached conversion table). Ask your hauler, recycler or site cleanup vendor to assist you with this plan. Receipts of all recycling and disposal must be submitted after project completion (or prior to sign off at Final Inspection).

Project Name: _____

Location: _____

Type of Project: New Construction Demolition
 Residential Commercial Public Building

Square Footage or Number of Units: _____

Type of Construction (wood frame, concrete, steel, etc.): _____

Total Project Value: \$_____

Company Name: _____ Contact: _____

Address: _____ Phone: _____

Questions? Call (City staff)

Submit this form and the attached Waste Management Plan to:

Construction & Demolition Waste Management Plan

Project Name: _____

Total Estimated Waste Generated by Project: _____ tons (Ask your hauler, recycler or site cleanup vendor to assist you. Use receipts from your previous jobs for estimates)					
Complete and return with Building Permit Application Or, if applicable: Complete and return within 7-calendar days after receipt of Notice to Proceed/Notice of Award to Bid, or prior to beginning demolition or construction, whichever occurs sooner			Complete and return with receipts within 30 days of project completion (or: prior to sign off at Final Inspection) Or, if applicable: Complete and return with receipts at 50% progress payment and at 100% status report.		
Material Type	Estimated Reused/ Recycled	Estimated Disposed/ Landfilled	Actual Reused/ Recycled	Actual Disposed/ Landfilled	Vendor or Facility Used (Destination), city, state, contact, phone #
Asphalt & Concrete					
Bricks/Masonry/Tiles					
Building Materials (doors, windows, fixtures, etc.)					
Cardboard					
Carpet/Carpet Padding/Foam					
Ceiling Tiles (acoustic)					
Drywall (new, unpainted)					
Film Plastic & Styrofoam Blocks					
Landscape Debris (Plant & Tree Trimmings)					
Scrap Metal					
Unpainted Wood & Pallets					
Other (painted wood & drywall, roofing, etc.)					
Mixed C&D*					
Trash/Garbage					
TOTAL					

* Recycling rates for mixed C&D loads vary among the facilities listed in the Alameda County Waste Management Authority's "Builder's Guide to Reuse and Recycling: A Directory for Construction and Demolition Materials." For the purposes of calculating your Waste Management Table, contact your mixed C&D recycler for the percentage of reused/recycled and disposed/landfilled.

Did you have difficulties finding recycling vendors? Yes No

If the estimated amount reused/recycled is less than 50%, please explain why:

If the actual amount reused/recycled is less than 50%, please explain why:

Prepared by: _____ Date: _____

Signature: _____

Conversion Rates

The following conversion rates are estimates. The ranges vary widely, depending on how the materials are handled (compacted, loose, chipped, etc.). Use the conversion factors and receipts from previous projects to help you estimate the potential amount of materials and waste. Take into consideration the type and load of vehicles that will be used to haul the materials.

Ask your hauler or recycler to assist you in estimating these numbers.

Material	Lbs/cy	Tons/cy
Aphalt	1,400 lbs/cy	0.7 tons/cy
Cardboard	100 lbs/cy	0.05 tons/cy
Concrete	2,600 lbs/cy (Sources range from 1,000 to 4,000)	1.3 tons/cy
Drywall	700 lbs/cy	0.35 tons/cy
Wood (chipped)	300 - 650 lbs/cy	0.15 – 0.3 tons/cy
Mixed C&D Debris	900 lbs/cy	0.45 tons/cy
Mixed Waste/Trash	100 - 350 lbs/cy	0.5 - 0.175 tons/cy