# SECTION 01151

# CONSTRUCTION AND DEMOLITION MATERIALS RECYCLING REQUIREMENTS

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section includes: Requirements and procedures for ensuring optimal diversion of construction and demolition (C&D) waste materials generated by the Work from landfill disposal within the limits of the Construction Schedule and Contract Sum.

1. California State law (Assembly Bill 75), requires the California State University to develop source reduction, re-use, recycling, and composting programs, to reduce the tonnage of solid waste disposed in landfills 50% by the year 2004. Construction waste materials generated by the Work are targeted to achieve these diversion rates.
2. The Work of this Contract requires that a minimum of 50% by weight of the construction and demolition materials generated in the Work is diverted from landfill disposal through a combination of re-use and recycling activities.
3. For LEED® projects, requirements for submittal of LEED documentation in compliance with Materials and Resources Credit 2.1 and Materials or Resources Credit 2.2, Construction Waste Management.
3. Requirements for submittal of Contractor's Construction Waste and Recycling Plan prior to the commencement of the Work.
4. Contractor's quantitative reports for construction waste materials as a condition of approval of the third progress payment.

### 1.2 DEFINITIONS

A. Class III Landfill: A landfill that accepts non-hazardous resources such as household, commercial, and industrial waste, resulting from construction, remodeling, repair, and demolition operations. A Class III landfill must have a solid waste facilities permit from the California Integrated Waste Management Board (CIWMB) and is regulated by the Enforcement Agency (EA).

B. Construction and Demolition Debris: Building materials and solid waste resulting from construction, remodeling, repair, cleanup, or demolition operations that are not hazardous as defined in California Code of Regulations, Title 22, Section 66261.3 et seq. This term includes, but is not limited to, asphalt concrete, Portland cement concrete, brick, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, plastic pipe, and steel. The debris may be commingled with rock, soil, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction or land development projects.

C. C&D Recycling Center. A facility that receives only C&D material that has been separated for reuse prior to receipt, in which the residual (disposed) amount of waste in the material is less than 10% of the amount separated for reuse by weight.

D. Disposal. Final deposition of construction and demolition or inert debris into land, including stockpiling onto land of construction and demolition debris that has not been sorted for further processing or resale, if such stockpiling is for a period of time greater than 30 days; and construction and demolition debris that has been sorted for further processing or resale, if such stockpiling is for a period of time greater than one year, or stockpiling onto land of inert debris that is for a period of time greater than one year.

E. Enforcement Agency. Enforcement agency as defined [i.e. in Public Resources Code 40130].

F. Inert Disposal Facility or Inert Waste Landfill: A disposal facility that accepts only inert waste such as soil and rock, fully cured asphalt paving, uncontaminated concrete (including fiberglass or steel reinforcing rods embedded in the concrete), brick, glass, and ceramics, for land disposal.

G. Mixed Debris: Loads that include commingled recyclable and non-recyclable materials generated at the construction site.

H. Mixed Debris Recycling Facility: A processing facility that accepts loads of commingled construction and demolition debris for the purpose of recovering re-usable and recyclable materials and disposing the non-recyclable residual materials.

I. Recycling: The process of sorting, cleansing, treating and reconstituting materials for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating or thermally destroying solid waste.

J. Reuse. The use, in the same or similar form as it was produced, of a material which might otherwise be discarded.

K. Separated for Reuse. Materials, including commingled recyclables, that have been separated or kept separate from the solid waste stream for the purpose of additional sorting or processing those materials for reuse or recycling in order to return them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace, and includes materials that have been “source separated.”

L. Solid Waste: All putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes. "Solid waste" does not include hazardous waste, radioactive waste, or medical waste as defined or regulated by State law.

M. Source-Separated: Materials, including commingled recyclables, that have been separated or kept separate from the solid waste stream at the point of generation for the purpose of additional sorting or processing of those materials for reuse or recycling in order to return them to the economic mainstream in the form of raw materials for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace.

N. Waste Hauler: A company that possesses a valid permit from the local waste management authority to collect and transport solid wastes from individuals or businesses for the purpose of recycling or disposal in the locality.

## 1.3 SUBMITTALS

A. Contractor’s Construction Waste and Recycling Plan

1. Review Contract Documents and estimate the types and quantities of materials under the Work that are anticipated to be feasible for on-site processing, source separation for re-use or recycling. Indicate the procedures that will be implemented in this program to effect jobsite source separation, such as, identifying a convenient location where dumpsters would be located, putting signage to identify materials to be placed in dumpsters, etc.

2. Prior to commencing the Work, submit Contractor’s Construction Waste and Recycling Plan. Submit in format provided (Section 01151A). The Plan must include, but is not limited to the following:

a. Contractor’s name and project identification information;

b. Procedures to be used;
c. Materials to be re-used and recycled;
d. Estimated quantities of materials;
e. Names and locations of re-use and recycling facilities/sites;
f. Tonnage calculations that demonstrate that Contractor will re-use and recycle a minimum 50% by weight of the construction waste materials generated in the Work.

3. Contractor's Construction Waste and Recycling Plan must be approved by the Construction Administrator prior to the start of Work.

4. Contractor's Construction Waste and Recycling Plan will not otherwise relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures.

B. Contractor's Reuse, Recycling, and Disposal Report
Submit Contractor's Reuse, Recycling, and Disposal Report on the form provided (Section 01151B) with each application for progress payment. Failure to submit the form and its supporting documentation will render the application for progress payment incomplete and delay progress payments. If applicable, include manifests, weight tickets, receipts, and invoices specifically identifying the Project for re-used and recycled materials:

1. Reuse of building materials or salvage items on site (i.e. crushed base or red clay brick).
2. Salvaging building materials or salvage items at an off-site salvage or reuse center (i.e. lighting, fixtures).
3. Recycling source separated materials on site (i.e. crushing asphalt/ concrete for base course, or grinding for mulch).
4. Recycling source separated material at an off site recycling center (i.e. scrap metal or green materials).
5. Use of material as Alternative Daily Cover (ADC) at landfills.
6. Delivery of soils or mixed inerts to an inerta landfill for disposal (inert fill).
7. Disposal at a landfill or transfer station (where no recycling takes place).
8. Other (describe).

Contractor's Reuse, Recycling, and Disposal Report must quantify all materials generated in the Work, disposed in [Class III] landfills, or diverted from disposal through recycling. Indicate zero (0) if there is no quantity to report for a type of material.

As indicated on the form:
1. Report disposal or recycling either in tons or in cubic yards: if scales are available at disposal or recycling facility, report in tons; otherwise, report in cubic yards. Report in units for salvage items when no tonnage or cubic yard measurement is feasible.
2. Indicate locations to which materials are delivered for reuse, salvage, recycling, accepted as daily cover, inert backfill, or disposal in landfills or transfer stations.
3. Provide legible copies of weigh tickets, receipts, or invoices that specifically identify the project generating the material. Said documents must be from recyclers and/or disposal site operators that can legally accept the materials for the purpose of re-use, recycling, or disposal.

Indicate project title, project number, progress payment number, name of the company completing the Contractor's Report and compiling backup documentation, the printed name, signature, and daytime phone number of the person completing the form, the beginning and ending dates of the period covered on the Contractor's Report, and the date that the Contractor's Report is completed.

C. For LEED Projects, LEED Letter Template: Materials and Resources Credit [2.1 or 2.2] Construction Waste Management

Complete and sign LEED Letter Template in format provided under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program. Prepare Letter Template on company letterhead.

1. Certify that the project has completed a waste management plan and diverted construction, demolition, and land clearing waste to uses other than landfill.
2. Provide quantities of diverted materials and means of diversion in the table provided in the LEED Letter Template.
3. Indicate how and where waste was diverted.
4. Indicate quantities of waste diverted in tons [or cubic yards].
5. Letter Template will calculate: Total quantity of diverted waste, total quantity of waste, and the percentage of waste diverted.
6. For projects where 50% of waste is diverted, one LEED credit will be achieved; where 75% is diverted, two LEED credits will be achieved.
7. Include name, organization, role in project, provide signature and date completed.

## PART 2 PRODUCTS

(Not used.)

## PART 3 EXECUTION

### 3.1 SALVAGE, RE-USE, RECYCLING AND PROCEDURES

A. Identify re-use, salvage, and recycling facilities.

B. Develop and implement procedures to re-use, salvage, and recycle new construction and excavation materials, based on the Contract Documents, the Contractor's Construction Waste and Recycling Plan, estimated quantities of available materials, and availability of recycling facilities. Procedures may include on-site recycling, source separated recycling, and/or mixed debris recycling efforts.

1. Identify materials that are feasible for salvage, determine requirements for site storage, and transportation of materials to a salvage facility.
2. Source separate new construction, excavation and demolition materials including, but not limited to the following types:
   - f. Asphalt.
   - g. Concrete, concrete block, slump stone (decorative concrete block), and rocks.
   - c. Drywall.
   - d. Green materials (i.e. tree trimmings and land clearing debris).
   - e. Metal (ferrous and non-ferrous).
   - f. Miscellaneous Construction Debris.
   - g. Paper or cardboard.
   - h. Red Clay Brick.
     Reuse or Salvage Materials
   - i. Soils.
     Wire and Cable.
   - j. Wood.
   - k. Other (describe)

3. Miscellaneous Construction Debris: Develop and implement a program to transport loads of mixed (commingled) new construction materials that cannot be feasibly source separated to a mixed materials recycling facility.

## 3.2 DISPOSAL OPERATIONS AND WASTE HAULING

A. Legally transport and dispose of materials that cannot be delivered to a source separated or mixed recycling facility to a transfer station or disposal facility that can legally accept the materials for the purpose of disposal.

B. Use a permitted waste hauler or Contractor's trucking services and personnel. To confirm valid permitted status of waste haulers, contact the local solid waste authority.

C. Become familiar with the conditions for acceptance of new construction, excavation and demolition materials at recycling facilities, prior to delivering materials.

D. Deliver to facilities that can legally accept new construction, excavation and demolition materials for purpose of re-use, recycling, composting, or disposal.

E. Do not burn, bury or otherwise dispose of solid waste on the project job-site.

## 3.3 RE-USE AND DONATION OPTIONS

A. Implement a re-use program to the greatest extent feasible. Options may include:

1. California Materials Exchange (CAL-MAX) Program is sponsored by the California Integrated Waste Management Board. CAL-MAX is a free service provided by the California Integrated Waste Management Board, designed to help businesses find markets for materials that traditionally would be discarded. The premise of the CAL-MAX Program is that material discarded by one business may be a resource for another business. To obtain a current Materials Listings Catalog, call CAL-MAX/California Integrated Waste Management Board at (916) 255-2369 or send a FAX to (916) 255-2200. The CALMAX Catalog is available through the Internet Site at http://www.ciwmb/ca.gov/calmax.

## 3.4 REVENUE

A. Revenues or other savings obtained from recycled, re-used, or salvaged materials shall accrue to Contractor unless otherwise noted in the Contract Documents.

**END OF SECTION**

# SECTION 01151A
# CONTRACTOR'S CONSTRUCTION WASTE AND RECYCLING PLAN

*(Submit After Award of Contract and Prior to Start of Work)*

| | | |
|---|---|---|
| Project Title: | | |
| Contract or Work Order No.: | | |
| Contractor's Name: | | |
| Street Address: | | |
| City: | State: | Zip: |
| Phone: ( ) | Fax: ( ) | |
| E-Mail Address: | | |
| Prepared by: (Print Name) | | |

| | | |
|---|---|---|
| Date Submitted: | | |
| Project Period: | From: | TO: |

Reuse, Recycling or Disposal Processes To Be Used

*Describe the types of recycling processes or disposal activities that will be used for material generated in the project. Indicate the type of process or activity by number, types of materials, and estimated quantities that will be recycled or disposed in the sections below:*

01 - Reuse of building materials or salvage items on site (i.e. crushed base or red clay brick)
02 - Salvaging building materials or salvage items at an off site salvage or re-use center (i.e. lighting, fixtures)
03 - Recycling source separated materials on site (i.e. crushing asphalt/concrete for reuse or grinding for mulch)
04 - Recycling source separated materials at an off site recycling center (i.e. scrap metal or green matls)
05 - Recycling commingled loads of C&D matls at an off site mixed debris recycling center or transfer station
06 - Recycling material as Alternative Daily Cover at landfills
07 - Delivery of soils or mixed inerts to an inert landfill for disposal (inert fill).
08 - Disposal at a landfill or transfer station.
09 - Other (please describe) _____

Types of Material To Be Generated

*Use these codes to indicate the types of material that will be generated on the project*

| | | | | |
|---|---|---|---|---|
| A = Asphalt | C = Concrete | M = Metals | I = Mixed Inert | G = Green Matls |
| D = Drywall | P/C=Paper/Cardboard | W/C = Wire/Cable | S= Soils (Non Hazardous) | |
| M/C = Miscellaneous Construction Debris | | R = Reuse/Salvage | W = Wood | O = Other (describe) |

Facilities Used: Provide Name of Facility and Location (City)

Total Truck Loads: Provide Number of Trucks Hauled from Site During Reporting Period

Total Quantities: If scales are available at sites, report in tons. If not, quantify by cubic yards. For salvage/reuse items, quantify by estimated weight (or units).

SECTION I - RE-USED/RECYCLED MATERIALS

*Include all recycling activities for source separated or mixed material recycling centers where recycling will occur.*

| Type of Material | Type of Activity | Facility to be Used, Location | Total Truck Loads | Total Quantities Tons | Cubic YD | Other Wt. |
|---|---|---|---|---|---|---|
| (ex.) M | 04 | ABC Metals, Los Angeles | 24 | 355 | | |
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| a. Total Diversion | | | - | - | - | - |

SECTION 011511A

CONTRACTOR'S CONSTRUCTION WASTE AND RECYCLING PLAN

Continued

| SECTION II - DISPOSED MATERIALS | | | | | | |
|---|---|---|---|---|---|---|
| *Include all disposal activities for landfills, transfer stations, or inert landfills where no recycling will occur.* | | | | | | |
| Type of Material | Type of Activity | Facility to be Used, Location | Total Truck Loads | Total Quantities | | |
| | | | | Tons | Cubic YD | Other Wt. |
| (ex.) D | 08 | DEF Landfill, Los Angeles | 2 | 35 | | |
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| b. Total Disposal | | | | - | - | - |

| SECTION III - TOTAL MATERIALS GENERATED | | | | | | |
|---|---|---|---|---|---|---|
| *This section calculates the total materials to be generated during the project period (Reuse/Recycle + Disposal = Generation* | | | | | | |
| | | | | Tons | Cubic YD | Other Wt. |
| a. Total Reused/Recycled | | | | - | - | - |
| b. Total Disposed | | | | - | - | - |
| c. Total Generated | | | | - | - | - |

| SECTION IV - CONTRACTOR'S LANDFILL DIVERSION RATE CALCULATION | | | | | |
|---|---|---|---|---|---|
| *Add totals from Section I + Section II* | | | | | |
| | Tons | Cubic Yards | Other Wt. | | |
| a. Materials Re-Used and Recycled | - | | | | |
| b. Materials Disposed | - | | | | |
| c. Total Materials Generated (a. + b. = c.) | - | - | - | | |
| d. Landfill Diversion Rate (Tons Only)* | #DIV/0! | | | | |

** Use tons only to calculate recycling percentages: Tons Reused/Recycled/Tons Generated = % Recycled*

Contractor's Comments (Provide any additional information pertinent to planned reuse, recycling, or disposal activities):

Notes:

1. Section 01151A is a Division 01 General Requirement under CSI MasterFormat 1998 Edition.
   For CSI MasterFormat 2004 Edition, this Section may be renumbered as follows:
   Under Division 00, Procurement and Contracting Requirements, Project Forms 00 60 00
   Use: Section 00 62 22 Construction Waste Diversion Plan

2. Suggested Conversion Factors: From Cubic Yards to Tons (Use when scales are not available)
   Asphalt: .61 (ex. 1000 CY Asphalt = 610 tons. Applies to broken chunks of asphalt)
   Concrete: .93 (ex. 1000 CY Concrete = 930 tons. Applies to broken chunks of concrete)
   Ferrous Metals: .22 (ex. 1000 CY Ferrous Metal = 220 tons)
   Non-Ferrous Metals: .10 (ex. 1000 CY Non-Ferrous Metals = 100 tons)
   Drywall Scrap: .20
   Wood Scrap: .16

# SECTION 01151B
# CONTRACTOR'S REUSE, RECYCLING, AND DISPOSAL REPORT

*(Submit With Each Progress Payment)*

| | | |
|---|---|---|
| Project Title: | | |
| Contract or Work Order No.: | | |
| Contractor's Name: | | |
| Street Address: | | |
| City: | State: | Zip: |
| Phone: ( ) | Fax: ( ) | |
| E-Mail Address: | | |
| Prepared by: (Print Name) | | |

| | | |
|---|---|---|
| Date Submitted: | | |
| Period Covered: | From: | To: |

Reuse, Recycling or Disposal Processes Used

*Describe the types of recycling processes or disposal activities used for material generated in the project. Indicate the type of process or activity by number, types of materials, and quantities that were recycled or disposed in the sections below:*

01 - Reuse of building materials or salvage items on site (i.e. crushed base or red clay brick)
02 - Salvaging building materials or salvage items at an off site salvage or re-use center (i.e. lighting, fixtures)
03 - Recycling source separated materials on site (i.e. crushing asphalt/concrete for reuse or grinding for mulch)
04 - Recycling source separated materials at an off site recycling center (i.e. scrap metal or green matls)
05 - Recycling commingled loads of C&D matls at an off site mixed debris recycling center or transfer station
06 - Recycling material as Alternative Daily Cover at landfills
07 - Delivery of soils or mixed inerts to an inert landfill for disposal (inert fill).
08 - Disposal at a landfill or transfer station.
09 - Other (please describe) _____

Types of Material Generated

*Use these codes to indicate the types of material that were generated on the project*

| | | | | |
|---|---|---|---|---|
| A = Asphalt | C = Concrete | M = Metals | I = Mixed Inert | G = Green Matls |
| D = Drywall | P/C=Paper/Cardboard | W/C = Wire/Cable | S= Soils (Non Hazardous) | |
| M/C = Miscellaneous Construction Debris | | R = Reuse/Salvage | W = Wood | O = Other (describe) |

Facilities Used: Provide Name of Facility and Location (City)

Total Truck Loads: Provide Number of Trucks Hauled from Site During Reporting Period

Total Quantities: If scales are available at sites, report in tons. If not, quantify by cubic yards. For salvage/reuse items, quantify by estimated weight (or units).

SECTION I - RE-USED/RECYCLED MATERIALS

*Include all recycling activities for source separated or mixed material recycling centers where recycling occurred.*

| Type of Material | Type of Activity | Facilities Used, Location | Total Truck Loads | Total Quantities Tons | Cubic YD | Other Wt. |
|---|---|---|---|---|---|---|
| (ex.) M | 04 | ABC Metals, Los Angeles | 24 | 355 | | |
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| a. Total Diversion | | | - | - | - | - |

SECTION 011511B

CONTRACTOR'S REUSE, RECYCLING, AND DISPOSAL REPORT

Continued

| SECTION II - DISPOSED MATERIALS | | | | | | |
|---|---|---|---|---|---|---|
| *Include all disposal activities for landfills, transfer stations, or inert landfills where no recycling occurred.* | | | | | | |
| Type of | Type | Facilities Used, | Total Truck | Total Quantities | | |
| Material | of Activity | Location | Loads | Tons | Cubic YD | Other Wt. |
| (ex.) D | 08 | DEF Landfill, Los Angeles | 2 | 35 | | |
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| b. Total Disposal | | | | - | - | - |

| SECTION III - TOTAL MATERIALS GENERATED | | | | | | |
|---|---|---|---|---|---|---|
| *This section calculates the total materials generated during the project period (Reuse/Recycle + Disposal = Generation* | | | | | | |
| | | | | Tons | Cubic YD | Other Wt. |
| a. Total Reused/Recycled | | | | - | - | - |
| b. Total Disposed | | | | - | - | - |
| c. Total Generated | | | | - | - | - |

| SECTION IV - CONTRACTOR'S LANDFILL DIVERSION RATE CALCULATION | | | | | |
|---|---|---|---|---|---|
| *Add totals from Section I + Section II* | | | | | |
| | Tons | Cubic Yards | Other Wt. | | |
| a. Materials Re-Used and Recycled | - | | | | |
| b. Materials Disposed | - | | | | |
| c. Total Materials Generated (a. + b. = c.) | - | - | - | | |
| d. Landfill Diversion Rate (Tons Only)* | #DIV/0! | | | | |

** Use tons only to calculate recycling percentages: Tons Reused/Recycled/Tons Generated = % Recycled*

Contractor's Comments (*Provide any additional information pertinent to planned reuse, recycling, or disposal activities*):

Notes:

1. Section 01151A is a Division 01 General Requirement under CSI MasterFormat 1998 Edition.
   For CSI MasterFormat 2004 Edition, this Section may be renumbered as follows:
   Under Division 00, Procurement and Contracting Requirements, Project Forms 00 60 00
   Use: Section 00 62 22 Construction Waste Diversion Plan

2. Suggested Conversion Factors: From Cubic Yards to Tons (Use when scales are not available)
   Asphalt: .61 (ex. 1000 CY Asphalt = 610 tons. Applies to broken chunks of asphalt)
   Concrete: .93 (ex. 1000 CY Concrete = 930 tons. Applies to broken chunks of concrete)
   Ferrous Metals: .22 (ex. 1000 CY Ferrous Metal = 220 tons)
   Non-Ferrous Metals: .10 (ex. 1000 CY Non-Ferrous Metals = 100 tons)
   Drywall Scrap: .20
   Wood Scrap: .16