

# CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

## PART 1 - GENERAL

### **1.1 Related Sections (edit as appropriate for consistency)**

- A. Section 01031 - Waste Management / Recycling Alternates
- B. Section 01060 - Regulatory Requirements
- C. Section 01094 - Definitions
- D. Section 01300 - Submittals
- E. Section 01600 - Materials and Equipment

### **1.2 Description of Work**

- A. This section describes the requirements for the Contractor and all subcontractors to minimize construction waste and debris and to reuse, salvage, and recycle to the greatest extent feasible.
- B. This section includes a statement of [INSTITUTION]'s Waste Management Goals, requirements for the development of a draft and final Waste Management Plan, a reference to resources to assist in recycling, and steps for Management Plan Implementation.
- C. This section specifies certain wastes that are required to be recycled.
- D. This section specifies obligations for Reporting to the [INSTITUTION] weights of materials recycled and materials not recycled or reused throughout the project.

### **1.3 Intent and Waste Management Goals**

- A. [INSTITUTION]'s waste management goals include increased recycling and conservation of materials. Construction and Demolition Wastes have been identified as a particular target for reuse and recycling, for several reasons:
  - C&D debris typically represents a large volume of material;
  - Many of the waste streams generated during building demolition and construction projects are highly recyclable at reasonable prices;
  - Massachusetts has banned landfill disposal of some C&D debris beginning in 2003, and expects to ban other C&D debris in subsequent years.
- B. [INSTITUTION] has determined that reducing, to the maximum extent practicable, the amount of waste disposed of in this project is a high priority. The Contractor and subcontractors shall take steps to generate the least amount of waste possible by minimizing waste due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be segregated for reuse, salvage, or recycling, or recycled as mixed debris. In no case shall material be disposed of in a landfill or incinerator where an approved and less

costly recycling or reuse alternative exists. Waste disposal in landfills and incinerators shall be minimized and shall be considered the alternative of last resort.

- D. With regard to these goals the Contractor shall develop, for the Owner's review and approval, a Waste Management Plan for this Project as described in Section 1.4.

#### **1.4 Draft Waste Management Plan**

- A. Within 14 calendar days after receipt of Notice of Award of Bid, and prior to any waste removal, the Contractor shall submit a Draft Waste Management Plan to [INSTITUTION OR PROJECT MANAGER OR ARCHITECT, AS APPROPRIATE]. The Draft Waste Management Plan shall contain, as a minimum:
1. A written analysis of the project wastes expected to be generated, by type and approximate quantity.
  2. Disposal options: The name of all landfill(s) and/or incinerator(s) proposed for trash disposal, the respective tipping fee(s) for each of these disposal options including transportation costs, and the projected cost of disposing of all Project waste in the landfill(s).
  3. Alternatives to Landfill Disposal/Incineration: A list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed end use or market for each material, the respective tipping fees for each end use or market (including transportation costs), and the estimated net cost savings or cost increase resulting from recycling each material (versus landfilling or other disposal), taking into account revenue from the sale of recycled or salvaged materials and tipping fees saved due to diversion of materials.
  4. The Draft Waste Management Plan shall include, at a minimum, the materials included in Section 1.5 that are required to be reused or recycled.
- B. Following the submittal of the Draft Waste Management Plan, [INSTITUTION] and Architect will review the plan and consider the proposed recycling and waste disposal alternatives. The Owner and/or Architect may suggest alternatives to the proposed disposal options in order to increase recycling, reduce costs, or both.

#### **1.5 Materials for Which Recycling Is Required**

- A. [INSTITUTION] requires that, as a minimum, the following materials must be considered for recycling, salvage, or reuse during this project:

[ADD OR ELIMINATE MATERIALS AS APPROPRIATE TO PROJECT]

Asphalt

Concrete, concrete block, concrete masonry units (CMU), slump stone (decorative concrete block), and rocks

Asphalt Concrete

Brick  
Paper, including bond, newsprint, cardboard, mixed paper, packing materials, and packaging  
Cement Fiber Products, including shingles, panels, siding  
Paint  
Rigid Foam  
Glass  
Plastics  
Carpet and Pad  
Beverage Containers  
Insulation  
Gypsum Wallboard  
Porcelain Plumbing Fixtures  
Fluorescent Light Tubes, per [REGULATORY AGENCY] regulations  
Green materials (i.e. tree trimmings and land clearing debris).  
Metals including, but not limited to, stud trim, ductwork, piping, reinforcing steel (rebar), roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze. (ferrous and non-ferrous).  
Soils  
Wood, including clean dimensional wood, pallet wood, plywood, oriented strand board (OSB), particle board

B. [MODIFY FOR OTHER STATE AS APPROPRIATE] The Contractor should be aware that the Commonwealth of Massachusetts has banned the following waste streams from incineration or landfill disposal. These items may not be included in waste destined for incineration or landfills:

1. Lead-acid batteries
2. Leaves and Yard Waste
3. Whole Tires
4. White Goods (Appliances)
5. Cathode Ray Tubes (CRTs) including computer monitors
6. Metal, Plastic and Glass Containers
7. Recyclable Paper

## 1.6 Resources for Development of Waste Management Plan

The following sources may be useful in developing the Draft Waste Management Plan:

1. *Recycling Haulers and Markets*. An extensive list of Massachusetts haulers and markets for recyclable materials is available on-line at the following URL: <http://www.STATE.MA.US/DEP/recycle/files/rsd.pdf>. This list is provided for information only and may not be comprehensive; other haulers and markets may also be available.
2. [INSTITUTION] has a current business relationship with the Institution Recycling Network, 7 South State Street, Concord, NH 03301 (Phone: 603-229-1962. Email: XXX. Web: [www.ir-network.com](http://www.ir-network.com)). The Institution Recycling Network provides

comprehensive planning and recycling services for all of the materials listed above, including selection and placement of recycling containers, source separation procedures, transportation, and access to markets.

## **1.7 Final Waste Management Plan**

- A. Once [INSTITUTION] has considered the draft Waste Management Plan and made appropriate suggested modifications, the Contractor shall submit, within 14 Calendar days of receiving such suggested modifications, a Final Waste Management Plan, incorporating [INSTITUTION]'s input. The Final Waste Management Plan shall contain the following:
1. Analysis of the proposed jobsite wastes to be generated, including types and approximate quantities.
  2. Disposal options: The name of all landfill(s) and/or incinerator(s) proposed for trash disposal, the respective tipping fee(s) for each of these disposal options including transportation costs, and the projected cost of disposing of all Project waste in the landfill(s)
  3. Alternatives to Landfilling: A list of the waste materials from the Project that will be separated for reuse, salvage, or recycling.
  4. Markets: A list of the market(s) or other on-site or off-site end use(s) that will be used for each material that will be separated for reuse, salvage, or recycling.
  5. Materials Handling Procedures: A description of the means to be employed in separating and recycling the materials identified in item (3) above consistent with requirements for acceptance by designated facilities, including the means by which such materials will be protected from contamination.
  6. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site-separated and hauled to designated markets, or whether mixed materials will be collected by a hauler and removed from the site and later separated for recycling).
  7. Cost of Reuse, Salvage, or Recycling. An estimate of the cost, including separation, transportation, and marketing, to reuse, salvage, or recycle the materials identified in item (3) above.
  7. Meetings: A description of the regular meetings to be held to address waste management. Refer to Section [XXX] - Project Meetings

## **1.8 Waste Management Plan Implementation**

- A. Manager: The Contractor shall designate a specific party (or parties) responsible for instructing workers in recycling and overseeing and documenting results of the Waste Management Plan for the Project.

- B. Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner, and the Architect.
- C. Instruction: The Contractor or his designated waste manager shall provide on-site instruction regarding appropriate separation, handling, and recycling, salvage, reuse, and/or return methods to be used by all involved parties at the appropriate stages of the Project.
- D. Separation facilities: As appropriate during each stage of the Project, the Contractor shall lay out and label a specific area(s) to facilitate separation of materials for potential recycling, salvage, reuse, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.
- E. Hazardous wastes: Hazardous wastes shall be separated and disposed of according to Section [XXX].

### **1.9 Reporting Required at Time of Invoicing**

- A. Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a Summary of Waste generated by the Project. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The Summary shall be submitted on a form acceptable to the Owner and shall contain the following information:
  - 1. The amount (in tons) of material landfilled or incinerated from the Project, the identity of the landfill or incineration facility, the total amount of tipping fees paid, transportation costs (if separate) and the total disposal cost. Include manifests, weight tickets, receipts, and invoices.
  - 2. For each material recycled, reused, or salvaged from the Project, the amount (in tons or cubic yards), the date removed from the jobsite, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of salvage or recycling each material. Attach manifests, weight tickets, receipts, and invoices.

### **1.10 Final Waste Management Report**

- A. Upon project completion, the Contractor shall submit in a format acceptable to the owner a Final Waste Management Report which shall include the following information:
  - 1. The amount (in tons) of material disposed of by landfill or incineration from the Project, the identity of the landfill or incineration facility, the total amount of tipping fees paid, transportation costs (if separate) and the total disposal cost. Include manifests, weight tickets, receipts, and invoices.
  - 2. For each material recycled, reused, or salvaged from the Project, the total quantity (in tons or cubic yards), the receiving party or parties, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or receipt of revenue for salvage or recycling each material.

Manifests, weight tickets, receipts, and invoices sufficient to document these quantities shall be attached.

3. The project recycling rate, defined as

The quantity (in tons) of materials salvaged, recycled or reused)

DIVIDED BY

[The quantity (in tons) of materials salvaged, recycled or reused] PLUS [The quantity (in tons) of materials disposed of by landfill or incineration]