SECTION **01 74 19** - **CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL

Retain or delete this article in all Sections of Project Manual.

* + - 1. SUMMARY

Section includes administrative and procedural requirements for the following:

Recycling nonhazardous demolition construction waste.

Disposing of nonhazardous waste.

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

* + - 1. DEFINITIONS

Retain terms that remain after this Section has been edited for a project.

Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

* + - * 1. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.
        2. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Government’s property.
        3. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
        4. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
        5. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.
      1. MATERIALS OWNERSHIP

Unless otherwise indicated, demolition and construction waste becomes the property of Contractor.

* + - * 1. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Government that may be uncovered during demolition remain the property of Government.

Carefully salvage in a manner to prevent damage and promptly return to Government.

* + - 1. ACTION SUBMITTALS

Waste Management Plan: Submit plan within 10 days of Notification of Award and not less than 5 days prior to preconstruction conference.

* + - * 1. Solid Waste Disposal Report: Submit monthly and at Project closeout.
      1. INFORMATIONAL SUBMITTALS

See Evaluations for examples of progress reports and sample forms in "Waste Reduction Progress Reports" Paragraph below. See "Attachments" Article for example of location for attachment of forms according to CSI's "SectionFormat."

Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Form CWM-7 for construction waste and Form CWM-8 for demolition waste. Include the following information:

Material category.

Generation points of waste.

Total quantity of waste in tons (tonnes).

Quantity of waste salvaged, both estimated and actual in tons (tonnes).

Quantity of waste recycled, both estimated and actual in tons (tonnes).

Total quantity of waste recovered (salvaged plus recycled) in tons (tonnes).

Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project total waste quantity, rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work. Respond to questions and requests from Government regarding construction waste management and disposal.

* + - * 1. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
        2. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
        3. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
        4. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

Retain "LEED Submittal" Paragraph below if Contractor rather than Architect or Owner is required to sign letter for LEED credits.

Coordinate "Qualification Data" Paragraph below with qualification requirements in Section 01 40 00 "Quality Requirements" and as may be supplemented in "Quality Assurance" Article.

Refrigerant recovery may be addressed in demolition Sections instead of this Section. If retaining refrigerant recovery in this Section, retain refrigerant recovery technician option in "Qualification Data" Paragraph below, retain "Statement of Refrigerant Recovery" Paragraph below, and delete "Refrigerant Recovery" paragraph below.

* + - * 1. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
      1. QUALITY ASSURANCE

Some Contractors may use waste management coordination services of an outside waste management firm.

Retain one of or both subparagraphs below if acceptable.

Refrigerant recovery technicians are certified as Type    I for small appliances, Type II for high- or very high-pressure appliances, Type III for low-pressure appliances, and Universal for technicians who work on all types of appliances. If including refrigerant recovery in this Section, retain first "Refrigerant Recovery Technician Qualifications" Paragraph below and delete second paragraph.

Refrigerant Recovery Technician Qualifications: Universal certified by EPA-approved certification program.

* + - * 1. Regulatory Requirements:

Comply with transportation and disposal regulations of authorities having jurisdiction.

Comply with OSHA’s Toxic and Hazardous Substances requirements for blood-borne pathogens - 29 CFR 1910.1030.

In "Waste Management Conference(s)" Paragraph below, identify specific participants not mentioned in Division  01.

* + - * 1. Waste Management Conference(s): Conduct conference(s) at Project site to comply with requirements in Section 01 31 00 "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:

Retain subparagraphs below if required. Revise to suit Project.

Review and discuss waste management plan including responsibilities of each contractor and waste management coordinator.

Review requirements for documenting quantities of each type of waste and its disposition.

Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.

Review procedures for periodic waste collection and transportation to recycling and disposal facilities.

Review waste management requirements for each trade.

* + - 1. WASTE MANAGEMENT PLAN

Retain option in "General" Paragraph below if Project requires selective demolition or building demolition.

* + - * 1. Construction and Demolition Waste Management Planning:

Establish waste diversion goals for the project by identifying at least 5 materials (both structural and nonstructural) targeted for diversion. Approximate a percentage of the overall project waste that these materials represent.

Specify whether materials will be separated or commingled and describe the diversion strategies planned for the project. Describe where the materials will be taken and how the recycling facility will process the material.

Provide a final report detailing all major waste streams generated, including disposal and diversion rates.

**[Land-clearing debris is not considered construction, demolition, or renovation waste that can contribute to waste diversion.]**

If applicable, list local charitable organizations (such as Habitat for Humanity) in "Salvaged Materials for Donation" Subparagraph below.

See Evaluations for examples of cost/revenue analysis forms in "Cost/Revenue Analysis" Paragraph below.

1. PRODUCTS

"Recycling Receivers and Processors" Article below may be helpful for bidders with little or no previous experience with recycling. List of recycling and processing facilities is available from many local and state authorities. Before inserting names, verify that Recycling Receivers and Processors listed there comply with requirements of local authorities having jurisdiction.

* + - 1. RECYCLING RECEIVERS AND PROCESSORS

Integrate Installation recycling process into Waste Management Plan.

* + - 1. PERFORMANCE REQUIREMENTS
         1. Construction and Demolition Waste Management:

Recycle and/or salvage nonhazardous construction and demolition materials. Calculations can be by weight or volume but must be consistent throughout.

Exclude excavated soil and land-clearing debris from calculations. Include wood waste converted to fuel (biofuel) in the calculations; other types of waste-to-energy are not considered diversion.

Option 1, Diversion: Divert at least 50% of the total construction and demolition material; diverted materials must include at least 3 material streams.

**[Option 2, Reduction of Total Waste Material in New Store Projects: Do not generate more than 2.5 pounds of construction waste per square foot of the building's floor area.]**

Retain "Demolition Waste" and "Construction Waste" subparagraphs below with last option in "General" Paragraph above to suit Project. Subparagraphs are examples of the most common demolition and construction waste that can be salvaged or recycled; revise list or insert other types of waste to suit Project; verify capabilities of local recycling facilities.

1. EXECUTION
   * + 1. PLAN IMPLEMENTATION

General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

Comply with operation, termination, and removal requirements in Section 01 50 00 "Temporary Facilities and Controls."

Retain option in "Waste Management Coordinator" Paragraph below when Project size and complexity of waste management justifies full-time, on-site waste management coordinator.

Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

* + - * 1. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

Distribute waste management plan to everyone concerned within 3 days of submittal return.

Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.

Retain "Waste Management in Historic Zones or Areas" Paragraph below when construction waste-handling operations take place in historic area; revise to suit Project.

Delete first paragraph below if salvage is specified in this Section; retain first paragraph below and delete remainder of article if salvage is specified in another Section.

Remaining paragraphs below are examples of additional requirements that can be added for salvaging materials. Insert other requirements to suit Project.

Leaving door hardware attached to doors can make it easier to reuse in another project.

* + - 1. RECYCLING DEMOLITION CONSTRUCTION WASTE, GENERAL

General: Recycle paper and beverage containers used by on-site workers.

Allowing Contractor to accrue some portion of the incentives in "Recycling Incentives" Paragraph below could result in better recovery rates than if Owner accrues all of the incentives.

* + - * 1. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
        2. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

Procedures in "Procedures" Paragraph below describe the "source-separated" method for handling recyclable waste. If space at Project site is limited, consider revising below to allow "co-mingled" method, which takes less space because it permits all recyclable waste to be placed in a single container that is separated later at the recycling facility.

* + - * 1. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.

Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

Inspect containers and bins for contamination and remove contaminated materials if found.

Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

Stockpile materials away from construction area. Do not store within drip line of remaining trees.

Store components off the ground and protect from the weather.

Remove recyclable waste from Government's property and transport to recycling receiver or processor as often as required to prevent overfilling bins.

* + - 1. RECYCLING DEMOLITION WASTE

Paragraphs in this article are examples only; retain or insert other specific disposal, cleanup, or removal requirements to suit Project or recycling facilities. Ceramic tile is also often recycled.

Retain one of two "Asphalt Paving" paragraphs below; first paragraph can be used for general fill.

Retain subparagraph below if recycled asphaltic concrete paving is permitted in the Work. If permitted, insert requirement to allow its use in Section  31 20 00 "Earth Moving."

Asphalt Paving: Break up and transport paving to asphalt-recycling facility.

* + - * 1. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

Option for larger size in first subparagraph below can be used for general fill or riprap; option for smaller size can be used with satisfactory soil as fill or subbase.

Retain subparagraph below if recycled concrete is permitted in the Work, if smaller size is retained in subparagraph above, and if crushed concrete is acceptable for fill or base material for roads. If permitted, insert requirement to allow its use in Section  31 20 00 "Earth Moving."

Crush concrete and screen to comply with requirements for use as satisfactory soil for fill or subbase.

Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

Retain one of two subparagraphs below. Option for largest size in first subparagraph can be used for general fill; brick masonry in smaller sizes can be used for landscape mulch; concrete masonry in smaller sizes can be used as satisfactory soil for fill or subbase.

Pulverize masonry to maximum 1-1/2-inch (38-mm) size.

Retain first two subparagraphs below if recycled masonry is permitted in the Work. If permitted, insert requirement to allow its use in appropriate Section.

Crush masonry and screen to comply with requirements for use as general fill.

Clean and stack undamaged, whole masonry units on wood pallets.

Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

* + - * 1. Metals: Separate metals by type.

Structural Steel: Stack members according to size, type of member, and length.

Remove and dispose of bolts, nuts, washers, and other rough hardware.

Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.

* + - * 1. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
        2. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
        3. Metal Suspension System: Separate metal members, including trim and other metals from acoustical panels and tile, and sort with other metals.
        4. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.

Store clean, dry carpet and pad in a closed container or trailer provided by carpet reclamation agency or carpet recycler.

Carpet Tile: Remove debris, trash, and adhesive.

Stack tile on pallet and store clean, dry carpet in a closed container or trailer provided by carpet reclamation agency or carpet recycler.

Piping: Reduce piping to straight lengths and store by material and size. Separate supports, hangers, valves, sprinklers, and other components by material and size.

* + - * 1. Conduit: Reduce conduit to straight lengths and store by material and size.
        2. Lamps: Separate lamps by type and store according to requirements in 40 CFR 273.
      1. RECYCLING CONSTRUCTION WASTE

Paragraphs in this article are examples of items that are common to normal construction operations; retain or insert other specific disposal, cleanup, or removal requirements to suit Project or recycling facilities.

Packaging:

Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.

Polystyrene Packaging: Separate and bag materials.

Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.

Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

Wood Materials:

Clean Cut-Offs of Lumber: Grind or chip into small pieces.

Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

Retain subparagraph below if recycled sawdust is permitted in the Work. If permitted, insert requirement to allow its use in Section  32 93 00 "Plants."

Comply with requirements in Section 32 93 00 "Plants" for use of clean sawdust as organic mulch.

Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

Retain "Clean Gypsum Board" Subparagraph below if gypsum board will be chipped on-site; delete if gypsum board to be processed off-site.

Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

Retain subparagraph below if recycled gypsum board is permitted in the Work. If permitted, insert requirement to allow its use in Section  32 93 00 "Plants."

Comply with requirements in Section 32 93 00 "Plants" for use of clean ground gypsum board as inorganic soil amendment.

Paint: Seal containers and store by type.

* + - 1. DISPOSAL OF WASTE

Insert other specific disposal, cleanup, or removal requirements to suit Project.

Retain first of two "General" paragraphs below when disposal off Owner's property is required. Insert specific requirements for off-site disposal to suit Project.

Retain second "General" Paragraph below and delete first paragraph if disposal is permitted on Owner's property; revise, if applicable, to indicate limits on type of materials that may be disposed of on-site.

General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.

Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

General: Except for items or materials to be salvaged or recycled, remove waste materials and legally dispose of at designated spoil areas on Government's property.

Retain one of two "Burning" paragraphs below; burning is usually not permitted.

* + - * 1. Burning: Do not burn waste materials.
      1. ATTACHMENTS

Attach forms referenced in this Section that will be issued with this Section either before or after end of Section according to office preference. Retain paragraphs in this article to list those forms retained in the Section Text that will be attached after end of Section. Insert forms here and delete listing if including forms as part of the Section Text.

* + - * 1. Form CWM-7 for construction waste reduction progress report.
        2. Form CWM-8 for demolition waste reduction progress report.

END OF SECTION