

Appendix 3.1

SAMPLE WASTE MANAGEMENT PLAN

Company : Northwest Best Construction
Project : Northwest Bank Building, Kent, WA
Designated Recycling Coordinator : John Doe

Waste Management Goals:

- o This project will recycle or salvage for reuse xx% [e.g. 75%] by weight of the waste generated on-site.

Communication Plan:

- o Waste prevention and recycling activities will be discussed at each safety meeting
- o As each new subcontractor comes on-sites, the recycling coordinator will present him/her with a copy of the Waste Management Plan and provide a tour of the recycling area
- o The subcontractor will be expected to make sure all their crews comply with the Waste Management Plan
- o All recycling containers will be clearly labeled
- o Lists of acceptable/unacceptable materials will be posted throughout the site

Expected Project Waste, Disposal and Handling:

The following charts identify waste materials expected on this project, their disposal method and handling procedures.

Demolition Phase

Material	Quantity	Disposal Method	Handling Procedure
Asphalt from parking lot	100 tons	Ground on-site, reuse as fill	
Wood Framing	6 tons	Recycle – Wood Recycling Northwest	Separate ‘clean wood’ in clean wood bin
Decorative Wood Beams	300 bd. Ft.	Salvage – Timber Frame Salvaging	Remove by hand, store on-site, palletize for pickup
Remaining Materials	8 tons	Landfill – Sound Disposal	Dispose in trash dumpster

Construction Phase

Material	Quantity	Disposal Method	Handling Procedure
Concrete	2 tons	Recycle – Pacific Concrete	Rebar OK
Forming Boards		Reuse as many times as possible then recycle – Wood Recycling NW	Stack next to supply of new form boards for reuse. Recycle clean unusable forms in wood recycling bin
Clean Wood Scrap	12 tons	Scraps reused for formwork, fire breaks, etc. Remaining recycled – Wood Recycling NW	Stack reusable pieces next to saw for reuse. Place unusable clean wood in wood recycling container
Scrap Metal	5 tons	Recycle – Seattle Metals	Deposit all metals in metal container
Drywall	10 tons	Subcontractor will recycle and submit receipt	Either provide container or collect in vehicle for recycling
All other wastes	14 tons	Landfill – Sound Disposal	Dispose of in trash dumpster

Appendix 3.2

MASTER
SECTION 017419 [01524]
CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Administrative and procedural requirements for construction waste management activities.

1.2 DEFINITIONS

- A. Construction, Demolition, and Landclearing (CDL) Waste: Includes all non-hazardous solid wastes resulting from construction, remodeling, alterations, repair, demolition and landclearing. Includes material that is recycled, reused, salvaged or disposed as garbage.
- B. Salvage: Recovery of materials for on-site reuse or donation to a third party.
- C. Reuse: Making use of a material without altering its form. Materials can be reused on-site or reused on other projects off-site. Examples include, but are not limited to the following: Grinding of concrete for use as subbase material. Chipping of landclearing debris for use as mulch.
- D. Recycling: The process of sorting, cleaning, treating, and reconstituting materials for the purpose of using the material in the manufacture of a new product.
- E. Source-Separated CDL Recycling: The process of separating recyclable materials in separate containers as they are generated on the job-site. The separated materials are hauled directly to a recycling facility or transfer station.
- F. Co-mingled CDL Recycling: The process of collecting mixed recyclable materials in one container on-site. The container is taken to a material recovery facility where materials are separated for recycling.
- G. Approved Recycling Facility: Any of the following:
 1. A facility that can legally accept CDL waste materials for the purpose of processing the materials into an altered form for the manufacture of a new product.
 2. Material Recovery Facility: A general term used to describe a waste-sorting facility. Mechanical, hand-separation, or a combination of both procedures, are used to recover recyclable materials. Take co-mingled containers to **<insert name of approved Material Recovery Facility(s) from the King County Solid Waste Division Report of Co-mingled Recycling Facilities at www.metrokc.gov/dnrp/swd/construction-recycling/comingled.asp#rates>**

1.3 SUBMITTALS

- A. Waste Management Plan: Submit [3] <Insert number> copies of plan within [7] [14] [30] <Insert number> days of date established for [commencement of the Work] [the Notice to Proceed] [the Notice of Award].
- B. Waste Management Report: Concurrent with each Application for Payment, submit [3] <Insert number> copies of report. [Include separate reports for demolition and construction waste.]

1.4 PERFORMANCE REQUIREMENTS

- A. General: Divert a minimum of [50%] [75%] <insert number> CDL waste, by weight, from the landfill by one, or a combination of the following activities:
 1. Salvage
 2. Reuse
 3. Source-Separated CDL Recycling
 4. Co-mingled CDL Recycling
- B. CDL waste materials that can be salvaged, reused or recycled include, but are not limited to, the following:
 1. Acoustical ceiling tiles
 2. Asphalt
 3. Asphalt shingles
 4. Cardboard packaging
 5. Carpet and carpet pad
 6. Concrete
 7. Drywall
 8. Fluorescent lights and ballasts
 9. Landclearing debris (vegetation, stumpage, dirt)
 10. Metals
 11. Paint (through hazardous waste outlets)
 12. Wood
 13. Plastic film (sheeting, shrink wrap, packaging)
 14. Window glass
 15. Wood
 16. Field office waste, including office paper, aluminum cans, glass, plastic, and office cardboard.

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Conduct construction waste management activities in accordance with State of Washington RCW 39.04.13, Seattle Municipal Code Chapter 21.36 and all other applicable laws and ordinances.
- B. Preconstruction Conference: Schedule and conduct meeting at Project site prior to construction activities.
 1. Attendees: Inform the following individuals, whose presence is required, of date and time of meeting.
 - a. Owner.
 - b. Architect.
 - c. Contractor's superintendent.
 - d. Major subcontractors.
 - e. <Insert the appropriate municipality representative. For projects in King County, outside the city of Seattle insert [King County Construction Recycling and Green Building program representative (206) 296-4466]. For projects within the City of Seattle insert [Resource Venture representative (206) 389-7304].>
 - f. Other concerned parties.

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2. Agenda Items: Review methods and procedures related to waste management including, but not limited to, the following:
 - a. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 - b. Review requirements for documenting quantities of each type of waste and its disposition.
 - c. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - d. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - e. Review waste management requirements for each trade.
 - f. Review and distribution of the following publications and programs (request copies by calling the King County Solid Waste Division at (206)296-4466):
 - 1) Construction Recycling Directory for Seattle/King County.
 - 2) Contractors Guide: Save money and resources through job-site recycling and waste prevention
 - 3) Construction Works program for Seattle/King County.
 - 4) King County Solid Waste Division Report of Co-mingled Recycling Facilities (available at www.metrokc.gov/dnrp/swd/construction-recycling/comingled.asp#rates).
3. Minutes: Record discussion. Distribute meeting minutes to all participants within 3 days.

1.6 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste types, quantity by weight, methods of disposal, handling and transportation procedures. Include separate sections in plan for demolition and construction waste.
- B. Organize the waste management plan in accordance with the sample plan included at end of Part 3, including the following information:
 1. Types and estimated quantities, by weight, of CDL waste expected to be generated during demolition and construction.
 2. Proposed methods for CDL waste salvage, reuse, recycling and disposal during demolition including, but not limited to, one or more of the following:
 - a. Contracting with a deconstruction specialist to salvage materials generated,
 - b. Selective salvage as part of demolition contractor's work,
 - c. Reuse of materials on-site or sale or donation to a third party.
 3. Proposed methods for salvage, reuse, recycling and disposal during construction including, but not limited to, one or more of the following:
 - a. Requiring subcontractors to take their CDL waste to a recycling facility,
 - b. Contracting with a recycling hauler to haul recyclable CDL waste to an approved recycling or material recovery facility,
 - c. Processing and reusing materials on-site
 - d. Self-hauling to a recycling or material recovery facility.
 4. Name of recycling or material recovery facility receiving the CDL wastes.
 5. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

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1.7 WASTE MANAGEMENT REPORT

- A. Waste Management Report: Submit a cumulative waste management report on the form included at end of Part 3 with each Application for Payment with the following attachments:
 1. A record of the type and quantity, by weight, of each material salvaged, reused, recycled or disposed.
 2. Total quantity of waste recycled as a percentage of total waste.
 3. Disposal Receipts: Copy of receipts issued by a disposal facility for CDL waste that is disposed in a landfill.
 4. Recycling Receipts: Copy of receipts issued by an approved recycling facility.
 - a. For co-mingled materials, include weight tickets from the recycling hauler or material recovery facility and verification of the recycling rate for co-mingled loads at the facility.
 5. Salvaged Materials Documentation: Types and quantities, by weight, for materials salvaged for reuse on site, sold or donated to a third party.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT, GENERAL

- A. Provide containers for CDL waste that is to be recycled clearly labeled as such with a list of acceptable and unacceptable materials. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor.
- B. The collection containers for recyclable CDL waste must contain no more than 10% non-recyclable material, by volume.
- C. Provide containers for CDL waste that is disposed in a landfill clearly labeled as such.
- D. Use detailed material estimates to reduce risk of unplanned and potentially wasteful cuts.
- E. To the greatest extent possible, include in material purchasing agreements a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and to take back all unused product. Insure that subcontractors require the same provisions in their purchase agreements.
- F. Conduct regular visual inspections of dumpsters and recycling bins to remove contaminants.

3.2 SOURCE SEPARATION

- A. General: Separate recyclable materials from CDL waste to the maximum extent possible. Separate recyclable materials by type.
 1. Provide containers, clearly labeled, by type of separated materials or provide other storage method for managing recyclable materials until they are removed from Project site.
 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 3. Stockpile materials away from demolition area. Do not store within drip line of remaining trees.
 4. Store components off the ground and protect from weather.

3.3 CO-MINGLED RECYCLING

- A. General: Do not put CDL waste that will be disposed in a landfill into a co-mingled CDL waste recycling container.

3.4 REMOVAL OF CONSTRUCTION WASTE MATERIALS

- A. Remove CDL waste materials from project site on a regular basis. Do not allow CDL waste to accumulate on-site.
- B. Transport CDL waste materials off Owner's property and legally dispose of them.
- C. Burning of CDL waste is not permitted.

END OF SECTION

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WASTE MANAGEMENT PROGRESS REPORT				
	DISPOSED IN MUNICIPAL SOLID WASTE LANDFILL	DIVERTED FROM LANDFILL BY RECYCLING, SALVAGE OR REUSE		
MATERIAL CATEGORY		Recycled	Salvaged	Reused
1. Asphalt (cu yds)				
2. Concrete (cu yds)				
3. Porcelain Plumbing Fixtures (lbs)				
4. Ferrous Metals (lbs)				
5. Non-Ferrous Metals (lbs)				
6. Wood (lbs)				
7. Glass (lbs)				
8. Clay Brick (lbs)				
9. Bond Paper (lbs)				
10. Newsprint (lbs)				
11. Cardboard (lbs)				
12. Plastic (lbs)				
13. Gypsum (lbs)				
14. Paint (gal)				
15. Insulation (lbs)				
16. Other (insert description)				
17. Other (insert description)				
Total (In Weight)		(TOTAL OF ALL ABOVE VALUES - IN WEIGHT)		
		Percentage of Waste Diverted	(TOTAL WASTE DIVIDED BY TOTAL DIVERTED)	

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Expected Project Waste, Disposal, and Handling:

The following charts identify waste materials expected on this project, their disposal method, and handling procedures.

Demolition Phase

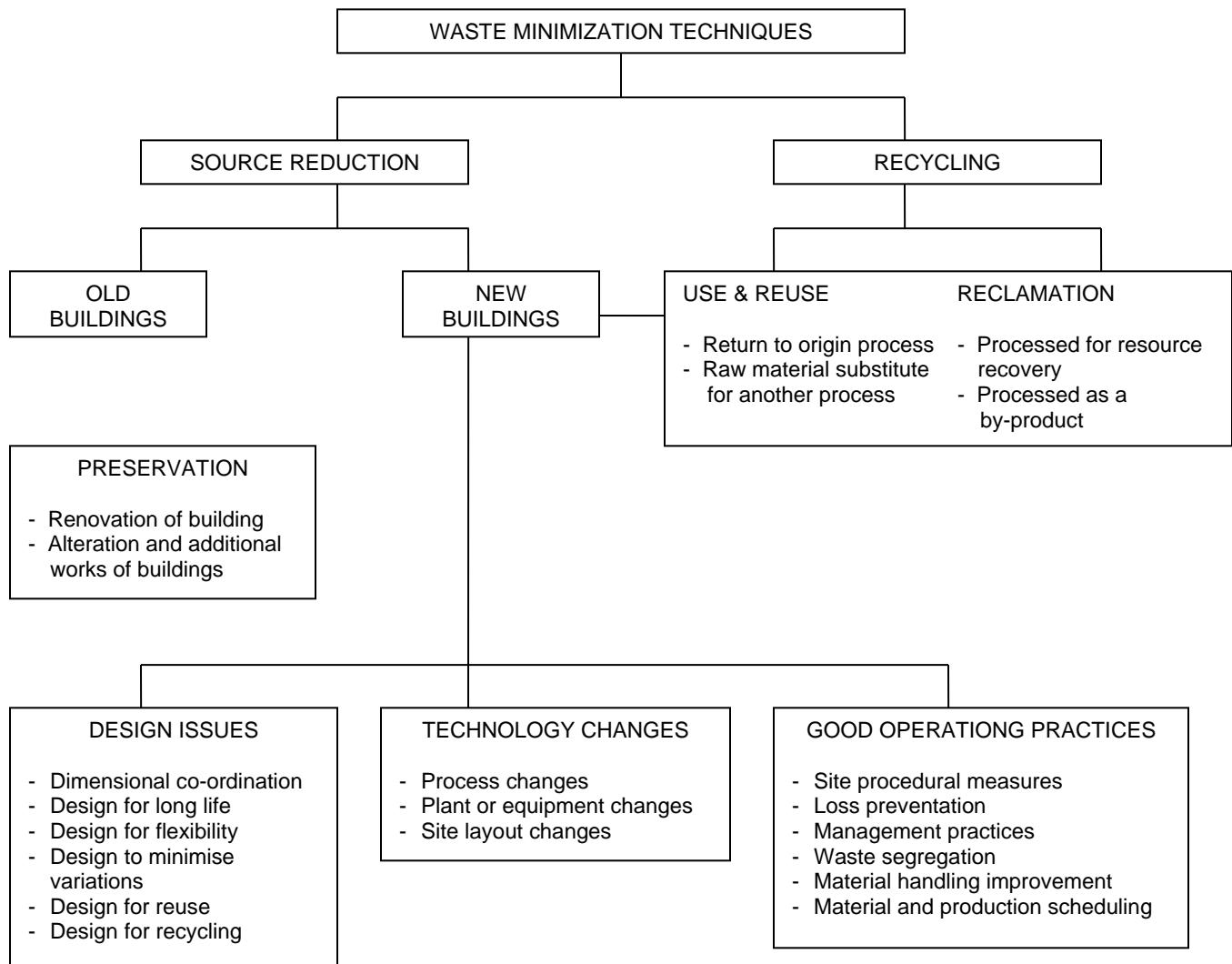
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Construction Phase

Material	Quantity	Disposal Method	Handling Procedure
Concrete	2 tons	Recycle - Puget Sound Concrete	Break up any wastes or mistakes and put in concrete bin. Rebar OK
Forming Boards		Reuse as many times as possible then recycle - Wood Recycling NW	Stack next to supply of new form boards for reuse. Recycle clean unusable forms in wood recycling bin
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Figure 3.2

WASTE MINIMIZATION TECHNIQUES IN CONSTRUCTION
(Modified from Ciambrone, 1996)



Source: C.S.Poon, "A Guide for managing and minimizing building and demolition waste", The Hong Kong Polytechnic University