

INTRODUCTION TO CONSTRUCTION SITE RECYCLING

Background

Areas across Saginaw County have been experiencing a housing boom in recent years, with a 39% increase in single family, duplex and multi-family building permits issued since 2000 ¹. Associated with this increase in housing starts is an increase in waste materials generated. According to the Michigan Department of Environmental Quality (MDEQ), approximately 8,400,000 cubic yards of construction and demolition (C&D) waste are generated yearly in Michigan, of which 1,300,000 cubic yards comes from new residential construction. It is estimated that this represents 20% - 30% of all waste generated in mid-Michigan.

These numbers are staggering in terms of the quantity of materials being sent to landfills. Luckily, there are alternative disposal options for much of the waste generated on a construction site. The National Association of Home Builders Research Center (NAHBRC) estimates that between 50% - 80% of construction waste has the potential to be recycled. Salvage, reuse and recycling can handle a large percentage of the material generated from building homes.

Mid Michigan Waste Authority (MMWA) would like to encourage contractors to begin “thinking green” when building. Examples of green thinking include:

- 🔧 purchasing environmentally friendly materials;
- 🔧 purchasing materials made from recycled-content products; and
- 🔧 reducing waste on site by adopting sound building practices that will reduce the generation of waste in the first place and recycling.

This document was developed to help contractors get into the “green” mindset. Inside are step-by-step directions to develop and implement recycling programs that will reduce the amount of waste generated for regular disposal in the landfill. A list of haulers and recyclers in the area who can help you get recycling is also included. In addition, this guide will provide a list of recycled-content products and other green products that could easily be incorporated into the building process, as well as information on how to purchase these products.

¹ Building permit summaries provided by the Saginaw County Metropolitan Planning Commission.

Common Terms or Concepts

Avoided disposal costs: materials that are diverted for recycling will reduce the amount of waste remaining for traditional disposal. The difference is known as avoided disposal costs.

C&D debris: waste materials, (including packaging, wood scraps, drywall cutoffs, shingles, land-clearing debris and more) generated at construction and demolition sites.

Recyclables: materials that can be diverted from the waste stream to a market for recycling. On a typical Saginaw-area construction site, these materials are wood, cardboard, and metals.

Waste Stream: the total amount of waste materials from a particular area (such as a jobsite or entire subdivision), as it moves from point of origin to disposal.

Why Consider Recycling?

Construction site recycling is important for many reasons. In addition to the obvious environmental benefits achieved, such as saving landfill space, there are other benefits which can have a positive impact for your company. Listed below are three significant benefits to implementing a recycling program.

1. Potential cost savings.

The cost of waste disposal at a residential construction site can be quite high (see box at right). Diverting materials from the landfills is good not only for environmental reasons, but also for economic reasons. Waste materials often cost significantly less to recycle than to dispose of in the traditional method (at a landfill).

2. Waste reduction and recycling can help your company become more efficient.

Materials that end up in the dumpster actually are paid for twice -- once at the time of purchase, and again in the cost of disposal. By carefully observing which materials are being wasted, you can determine how efficiently your crews and subcontractors are using materials, which in turn can affect your bottom line.

3. Good marketing tool.

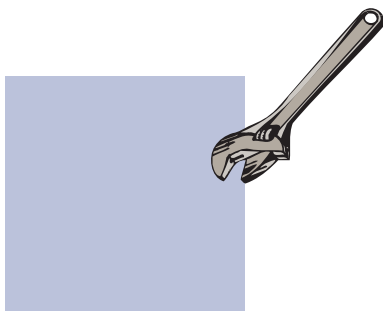
As you build, promote your company as a contractor who is responsible for proper management of waste. Post signs and advertise to prospective buyers that "XYZ Construction is striving to protect the environment." You may also wish to distribute a pamphlet or flyer explaining your company's unique "green building" approach. You may be surprised how many people will respond positively to this claim.

Did You Know?

Job site recycling can save you money!

The average cost of a 30-yard dumpster in the Saginaw area is \$390 per pull. With the average 2,000 square foot house needing two dumpsters per house, that means that building contractors are spending nearly \$800 per house on waste disposal.

It is estimated that 50%-80% of the construction waste stream could be reduced, reused, or recycled. That in turn would reduce waste disposal costs accordingly.



Types of Waste Materials Generated

Typical materials generated on a new home construction site include wood, drywall, corrugated cardboard, metals, brick, vinyl siding, plastic piping, shingles, insulation, glass, land-clearing materials and more. It is possible to determine when during the building process each of these materials is typically generated. For instance, land-clearing waste is often generated prior to the start of construction; wood scraps usually are generated during the framing stage; drywall scraps would come next. Corrugated cardboard is usually a packaging product associated with fixtures, windows, etc. and would come during the trim and finishing stages of the project. Knowing when during the construction process each material is generated can be helpful when designing your recycling program, and is discussed further in that section.

According to research for the National Association of Homebuilders Research Center, the following table demonstrates a breakdown of typical materials generated.

“Typical” Construction Waste Estimated for a 2,000-square-foot Home

Material	Weight (in pounds)	Volume (in cubic yards)*
Solid sawn wood	1,600	6
Engineered wood	1,400	5
Drywall	2,000	6
Cardboard (OCC)	600	20
Metals	150	1
Vinyl (PVC)**	150	1
Masonry ***	1,000	1
Hazardous materials	50	-
Other	1,050	11
Total	8,000	50

* Volumes are highly variable due to compressibility and captured air space in waste materials.

** Assuming three sides of exterior clad in vinyl siding.

*** Assuming a brick veneer on home’s front facade.

Quick Facts:

- ◆ Wood waste can account for 40% to 50% of the residential construction waste stream.
- ◆ Corrugated cardboard is the most common building product packaging material, and while it may not contribute much to total weight, it can represent up to 30% of the total volume of waste generated on the jobsite. Large pieces of cardboard often take up large amounts of space in the dumpster, and can result in the dumpster being emptied long before it is actually necessary.
- ◆ Drywall waste makes up about 15% of jobsite waste. In some areas of the country, drywall can be ground and land-applied as a soil amendment. This is currently not a widely-practiced method of disposal for clean drywall scraps in Michigan, but hopefully it will become popular in the future.

