

IMPLEMENTING A RECYCLING PROGRAM ON THE JOBSITE “STEP-BY-STEP”⁶⁶

Step #1: Determine materials that can be recycled

In order to determine which materials would be most logical to recycle, you should take a look at your jobsite waste stream. As described previously, the most common materials generated and recyclable from a construction site include wood, metals, corrugated cardboard, asphalt or brick, and land-clearing materials. However, each contractor generates these materials in differing quantities, and while it may make sense for one contractor to recycle brick, another may generate it in such small quantities that it would not be economically feasible to do so. To figure out what will work, check what materials you generate and estimate that volume.

Determining your waste stream can be as simple as keeping an eye on how quickly your waste containers fill up with certain materials at certain points in the building process. Most wood waste is generated during the framing stage, so a builder can often get an idea of how much wood waste will be generated after this point. For instance, if you have filled up approximately half of a 20-cubic yard waste container after the framing stage, you can estimate that you generated roughly 8 to 10 yards of wood waste per home. Repeat this estimation process for cardboard (most often generated during finish and trim phases) and for other materials you may wish to recycle. See the sidebar at right for tips why it is a good idea to determine which materials are generated at different points in the building process.

Contractors also should be aware of markets for the materials generated. Markets for wood, cardboard and metals are readily available across the country, while markets for materials such as drywall and vinyl siding vary by region. Michigan is still looking to develop markets for these materials, but none are readily available at the moment. Therefore, contractors in the Saginaw area should likely focus on recovering cardboard, wood and metals.

Keeping an eye on which materials fill up your waste container most quickly will help you determine which materials to recycle

“What?” & “When?”


Once you have determined *which* materials are generated in a significant quantity, it can be valuable to determine *when* during the building process they are generated.

- ♦ Most wood waste is generated during the framing phase, while most cardboard would be generated towards the end, when finish work such as fixture installation, etc. is performed.
- ♦ If you will recycle the materials individually, identifying when they are created is wise. You could potentially save time and money by consolidating materials for delivery to a recycler until the particular stage of the building process is complete. Costs will also be kept low by obtaining a container for cardboard recycling at the end of the project, rather than paying to rent a container for it from framing on, when little cardboard waste is normally generated.
- ♦ Regardless of the waste handling method you select, you should estimate disposal cost savings due to materials that are recycled or salvaged. Subtract the quantity of those target materials from the total waste to determine how much waste remains to be disposed of. Next, determine if the size of waste container or frequency of pickup can be reduced, either of which would result in cost savings.


Step #2: Select a method of handling materials

Many studies on waste handling methods have been done throughout the country, and each has produced different results. As with many things, the facets of the new home construction market are many and varied, and differ greatly from one area of the country to another. To put together a recycling program that works in this area, contractors need to read the options outlined below and pick the best fit. Once you have determined which materials would be logical to recycle, you will need to contact various haulers and recyclers (see Appendix B for a listing) to determine the best method of handling the materials.

For instance, in some cases it may be more cost effective to contract with a hauler to remove all materials in one roll-off container at the same time. But others may find it easier to separate each material into a different container (i.e., wood, cardboard) and have them hauled individually. Some contractors may even decide they do not generate enough material to justify hiring a hauler to remove the materials, and instead deliver the product to a recycler themselves. To help you determine how to prepare to recycle, the various program options are detailed below.

 **Mixed Material Collection.** Contractors that are concerned with space for more than one dumpster on site often prefer the mixed material collection method. This type of collection typically allows the contractor to dispose all materials in one container, and requires the waste hauler or recycler to sort out the materials at their location.

This method requires virtually no additional labor for separating materials, which means that less effort is needed to educate workers. However, this can be a more costly method of disposal, and due to the mixture of all materials in one container, contamination often decreases the value of the materials. In addition, this method of collection may not be available in all areas of the country. Check with your local haulers for availability if you are interested in this type of collection.

 **Time-Based Separation.** In more metropolitan areas, a method of waste handling known as “time-based separation” has proven popular with some builders. This type of program focuses on recovering the materials as they are generated. Sometimes this type of collection is offered by “site clean-up”

So You Want to Start Recycling in the Tri-City Saginaw Area?

There are two materials that will be easiest to recycle in the Saginaw area: **wood** and **cardboard**. The best method for recycling these materials will be based upon the quantity of the material generated. This will depend largely on the number of homes being built.

- ◆ Unlike large builders that develop an entire subdivision simultaneously and can use one centrally-located recycling container for numerous houses, most builders in the Saginaw area build a limited number of houses in a particular neighborhood. Often the wood waste or cardboard generated at a single home is not enough quantity to fill an entire container. Therefore, it is suggested that several builders work together to share the cost of containers for cardboard and wood recycling.
- ◆ Another option would be for a builder or several builders to haul the cardboard and wood waste generated at different construction sites to one central location for disposal in a recycling container.

services. In some instances, the service provider will actually do some pre-processing on site (e.g., bale the cardboard, grind the wood). This type of program works best if materials from multiple homes are generated at one time.

The main advantage of a time-based separation program is that while individual recyclable materials are recovered through source-separation, separate containers are not generally required. Instead, areas are often fenced off for storage of materials. The main disadvantage is that they often require additional room on site for storage of materials and processing equipment, and can be more costly than other methods of collection. Another disadvantage is that this concept of waste collection is not available in all areas of the country.

The Saginaw area does not appear to have any recyclers practicing this method at this time. A large volume of material is needed to make this a viable option.

✦ **Recyclable Sorting On-Site (Source Separation)**. A good method of recycling a few designated materials is source separation. Source separation requires the segregation of a particular waste material in a specific container or designated storage area. For example, the photo below right shows a dumpster that has been designated for wood scrap recycling only and the photo on page 8 demonstrates a similar method of collecting cardboard.

This method could be costly for a contractor building a single house, as it often does not generate enough of a single type of waste material to fill an entire roll-off container. However, this could still work well for several homes and/or several contractors.

If you are interested in implementing this type of program, you may wish to talk with other contractors that are building in your neighborhood and discuss the possibility of sharing costs for a centrally-located recycling container. Another option that has been known to work well is for a single contractor to select one jobsite to locate the wood or cardboard recycling container, and use their pickup trucks to haul scraps of wood and cardboard from other houses for disposal.

Recycling With Multiple Builders = Cost Savings

As noted previously, many of the mid-Michigan new home developments are built out by multiple contractors. Partnering with another builder or two for recycling can be the key.

Working together can be the best way to achieve cost savings by recycling enough material, as well as widen access to recycling and expand your professional network.

To make this happen, read the five steps through, copy them and share with your colleagues. With just a little effort and this guide, you can set up a great recycling program.



Step #3: Put the Program in Place

A. Contact Haulers -- Now that you have decided which materials you generate in significant quantities to recycle, and determined the best method of handling the materials, you should contact haulers in the area and discuss different options for your jobsite.

It is important to discuss waste handling methods, the amount of separation required, the space requirements (for containers) on the site, and costs. A list of haulers and recyclers operating in the Saginaw area is included in this Guide. See Appendix B for more information.

B. Get Recycling Containers -- After you agree to terms with a hauler or recycler, obtain the necessary recycling containers or designate an area for storage and collection of recyclables. Depending on the type of program selected, you could either purchase these containers yourself, or pay to rent the container from the waste hauler or recycler.

C. Teach Workers What & How to Recycle -- The next important step in implementing the recycling program is to educate your employees and any subcontractors on how to actually recycle the selected materials. Some companies choose to designate one person onsite to function as the “Recycling Coordinator” and oversee the program. This person may be the site manager or another willing individual who will work to ensure that everyone, including the subcontractors, understands and follows the program. However, selecting one person to perform this role is not necessary if you have a small group of workers that are willing to cooperate and participate in the program.

Some steps to easily educate workers about your recycling program include:

- ✦ ***Discuss the recycling program at site safety or other meetings with the subcontractors.*** This education step could simply involve a verbal explanation to the contractors, depending on the number of subcontractors involved and the complexity of the recycling program itself. On the other hand, it might be better to distribute a handout or checklist explaining how the materials are to be separated, preparation of materials (i.e., nails removed, no garbage, etc.), and other pertinent details. Seeing the steps they need to follow in black and white can increase program success. A sample handout is included in this guide as Appendix A.

Possible barriers to recycling program implementation:

While implementing a recycling program can be quite simple, it is important to consider possible issues that may arise in order to more easily address them.

- ♦ ***Costs.*** The contractor must evaluate all aspects (current disposal costs, cost to add recycling services, avoided disposal costs) to determine the true cost of recycling.
- ♦ ***Additional time may be required for sorting.*** Once the program is in place, sorting will become routine for workers. In some instances, the contractor may choose to deliver the materials themselves to the recycling center, and additional drive time should be taken in to consideration.
- ♦ ***Space issues for storing containers or materials.*** This issue can typically be resolved with some creative thinking by the contractor -- store cardboard scraps in the same area as wood scraps after they are removed for recycling, for instance.
- ♦ ***Contamination.*** Fly dumping by neighbors is the most common source of contamination. Some contractors choose to store their scraps in a locked garage to prevent this from happening.

✂ **Create large, simple signs.** Depending on the design of the program, this could simply be a sign designating “MIXED RECYCLABLES” to hang near the roll-off container (in multiple languages, if necessary). On the other hand, if the materials are to be source-separated and placed on piles or in separate containers, multiple signs will be necessary to prevent contamination. Sign examples: “CLEAN WOOD RECYCLING ONLY,” “CARDBOARD RECYCLING ONLY,” “GARBAGE ONLY.”

The photograph at right shows a roll-off container properly labeled for cardboard recycling only. Also posting “NO DUMPING” signs may help to reduce the amount of contamination through fly dumping as well.



Step #4: Begin recycling

Now that you have the containers in place and the workers and subcontractors have been educated about the program, you should start recycling. Separate out the wood and cardboard (or whichever materials you have selected) and place them in the designated areas or containers. The remainder of the waste should continue to go in the regular roll-off container as before.

It’s as easy as that - four simple steps and you are now recycling! If you are partnering with other builders, check in with them to ensure they have informed their subcontractors and staff about the program and that they continue to participate.

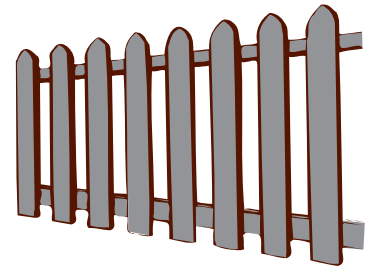
Step #5: Follow-up and maintenance

The final step in the process of implementing a recycling program is to check in periodically with the workers and subcontractors, as well as the waste hauler, to find out if any problems are occurring. The waste hauler will inform you if contamination is a problem, and you can discuss with workers ways to avoid that issue. Some ideas for following up and maintaining the program include:

✂ **Check-up on participation and check-in when needed.** Follow-up with the subcontractors to see if they are participating, through informal discussion on site, phone calls or formal meetings if needed. If the program is not being followed adequately, you may wish to call additional meetings with the group, or with a specific individual, to discuss the program.



The program should be evaluated periodically as well. If subcontractors are not following the program and have complaints about the setup (i.e., the dumpster for recyclables is located too far from the work site), take steps to address the concerns. You may also find that the program needs to be adjusted along the way to suit your needs better -- don't be afraid to change things.



🔑 **Provide results and rewards!** Remember to keep your workers and partners up to date on program results so they know they are making a difference. And, knowing that their activities have an impact encourages people to keep participating.

It's always good practice to say thanks for a job well done, or to provide incentives to get the result you need -- recycling program success. If the program seems to be working well, the person in charge may wish to provide encouragement to the subcontractors in the form of donuts at a coffee break or pizza for lunch.

THANKS
FOR A JOB WELL DONE!

Thomas Farms Pilot Recycling Project

During the fall of 2003, the Mid Michigan Waste Authority partnered with the Saginaw Home Builders Association, Waste Management of Michigan, Putt Inc., and a number of contractors to implement a pilot project for new home construction job-site wood and cardboard recycling.

Three contractors took advantage of the project to recycle their wood and cardboard waste. Two roll-off containers from Waste Management were placed in an empty lot in the Thomas Farms development located in Thomas Township, one each for wood waste and cardboard. At the end of the project, the waste from approximately ten homes was placed in the roll-off containers. These homes were all at varying stages of construction, and therefore contributed different kinds and amounts of waste. For instance, one home only generated cardboard, and two homes generated only wood waste. In addition, some waste was generated at homes outside of the Thomas Farms subdivision and transported to these containers for disposal by the contractors.

In four months, both the wood and the cardboard roll-off containers were pulled four times each. This represents over 4 tons of cardboard that was recycled, and 120 cubic yards of wood that was chipped into mulch to use in landscaping.



In addition, this program showed contractors the amount of money that could be saved by recycling: **over \$500!** Had the waste been placed in regular roll-off containers, it would have cost \$3,120 for disposal. By recycling, it cost only \$2,600.

The participating contractors were more than happy to help out their environment and reduce waste by recycling; they commented that the program was wonderful and look forward to continuing recycling.