

# THE WAR

FOR BUILDERS WHO WANT TO **REDUCE AND RECYCLE** THEIR EXCESS JOBSITE MATERIALS, THERE ARE ECONOMIC AND LOGISTIC HURDLES TO OVERCOME



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# ON WASTE

by JOE BOUSQUIN

Getting a handle on waste in the construction industry is a messy business.

Troy Johns discovered that painful truth when he first tried to cut down on the amount of waste generated at his homesites six years ago. As owner of Vancouver, Wash.-based Urban NW Homes, which builds 120 homes a year, he wanted to reduce his waste by at least half to earn points for National Green Building Standard (NGBS) certification.

He started by identifying what could easily be recycled—wood scrap, metal, plastic—and got after his subs to use color-coded boxes to sort materials on-site. But then his local waste hauler “wanted to charge us through the nose to pick up our makeshift separation boxes,” Johns says. Worse, he then found out that the hauler wasn’t recycling it at all, but instead just throwing the carefully sorted materials in with the rest of the trash.

While Johns’ experience trying to cut down on waste seems baffling, it’s not an uncommon scenario for builders who want to do the right thing with excess jobsite materials, of which there are literally tons—about 8,000 pounds for every 2,000-square-foot home, according to the NAHB. In fact, even as U.S. home builders have put the energy savings of their highly efficient homes front and center in the American psyche in the past 15 years, the waste that’s created building them—and what happens to it—gets far less attention.

“Nobody really looks at trash, because trash just isn’t sexy,” says Richard Ludt, director of environmental affairs at South Gate, Calif.-based Interior Removal Specialists, and a board member of the Los Angeles chapter of the U.S. Green Building Council (USGBC). “There are all of these different things that make you think we’re moving in the right direction with construction waste, but, in many instances, that’s just not the case.”

Even as curbside recycling has become the norm in U.S. cities for household trash, recycling for construction and demolition (C&D) waste, which accounts for more than twice the



volume in America’s landfills, still just happens in fits and starts. It’s highly dependent on various state and municipal regulations that vary drastically and boils down to the availability of C&D recycling facilities in local markets. On average, it costs builders more to recycle than to take their loads to the dump. What’s more, in the age of data science, it’s difficult to ascertain consistent metrics on what exactly is being thrown out versus recycled.

“Construction and demolition debris is a big black box,” says Bill Bradley, owner of Denver-based hauler and recycler 5280 Waste Solutions, as well as waste and recycling software platform company Starlight. “Nobody really knows what’s in there.”

According to the EPA, 548 million tons of C&D waste was generated in the U.S. in 2015, the latest period for which data is available. (By comparison, household waste accounted for 262 million tons.) When road and bridge construction is removed from the overall 2015 number, buildings accounted for 169 million tons of C&D waste, or about 30% of the total.

But citing state and regional differences in recovery practices, regulations, and lack of data, an exhaustive 2017 EPA study couldn’t put a specific number on how much of that C&D waste was recycled, instead opting for a range of 30% to 70%.

Against that backdrop, the Chicago-based Construction and Demolition Recyclers Association (CDRA), a trade group of C&D haulers and processors, estimates that 73% of all C&D materials were recycled in 2014. That overall rate belies the even higher recycling rates of concrete and brick (85%) and asphalt (99%) generated by bridge and road construction.

When looking at “mixed” C&D waste—the portion generated from building construction sites—the recovery rate drops to just 38%. “That sounds low, but it really depends on where you are in the country,” says William Turley, executive director of CDRA, who notes that states like California have more C&D processing plants, and thus provide more opportunity for contractors to recycle building waste. He also adds that the current mixed C&D recycling rate is up from the single digits of 25 years ago, when he founded CDRA to bring more attention to this issue. Even so, he concedes that when it comes to builders trying to recycle waste from their sites today, “in some parts of the country, it still just doesn’t make economic sense.”

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## A LOCAL APPROACH

Part of the challenge of dialing in C&D recycling data comes from the various federal and state benchmarks applied to this waste stream. The federal goal is to recycle 50% of C&D waste, including that from road and bridge construction. According to CDRA’s numbers, that goal is being met, and even surpassed.

In California, state regulations written into the building code require that at least 65% of materials from jobsites get recycled. Florida has a 75% goal; Colorado, 60%. In Massachusetts, it’s 50%, but the state’s actual rate has plateaued around 30%, according to a 2016 study by the Northeast Recycling Council (NRC). Another study by the Northeast Waste Management Officials’ Association found that only 19% of C&D materials were actually recycled in eight Northeast states in 2013.

A comprehensive list of federal and state rules and recycling goals for C&D is hard to come by. CDRA maintains a proprietary database for its members, but the EPA’s 2017 report provided only a sampling of general recycling requirements—many of which didn’t single out C&D—from a few states. A 2011 report by the NRC found that only 13 states (of 49 surveyed)

had some form of C&D recycling requirements or material bans at that time. That data disparity is a big part of the problem when it comes to understanding what happens to mixed C&D waste and how to increase its recycling rates.

“There’s a patchwork of C&D recycling requirements around the country,” says Wes Sullens, director of codes technical development at the USGBC. “You’ve got some places with nothing, others with a 75% requirement. It’s all over the map.”

Adds Bradley, “You can’t make a dent in diversion until you understand it and profile it.”

For Chris Batterson, C&D accounts lead at Atlanta-based Rubicon Global, which provides cloud-based waste and recycling software to various industries, much of what happens to C&D waste comes down to the choices individual builders make. “Some markets regulate how much waste from C&D work has to be diverted from the landfill, but other places have no regulation and no infrastructure to recycle it,” he says. “Builders who have established sustainability goals and practices try to do the right thing and divert materials. But the ones who choose not to recycle typically just throw it all in one container, and it goes to the landfill.”

## ACCESS IS EVERYTHING

Even if the numbers were less opaque, it would still take a Herculean effort by many builders to recycle more of what’s generated at their jobsites. Consider the initial challenge Urban NW Homes faced when trying to get subs to sort materials on-site. One of the reasons for doing so is because haulers will give discounts for “clean” recyclables that are presorted. But another is because there’s a big difference between C&D landfills that accept presorted recyclables, such as metals and drywall, and C&D material recovery facilities (MRFs) that are set up to do automated sorting to sift, separate, and categorize co-mingled materials.

It’s easier—and requires less on-site labor, space, and diligence—to supply a co-mingled box that workers can throw everything into, to be separated at a facility later. But there aren’t that many recycling centers capable of that kind of sorting. According to the EPA’s 2017 C&D report, while there are more than 1,500 C&D-specific disposal facilities in the U.S., and thousands of other non-C&D oriented landfills that accept C&D waste, there were only 512 C&D MRFs as of 2012. The report drolly concludes, “there are regions of the country where reaching a C&D MRF requires hundreds of miles of additional transport.”

In those areas, builders who want to recycle are faced with a conundrum. “For the smaller builders, it’s a lot easier to be diligent in keeping waste to a minimum in the first place, then to try to recycle it after the fact,” says Chris Lombardi, president of Brick, N.J.-based Lombardi Residential. “Unfortunately, it’s more economical to move quickly and turn over projects than spend time trying to figure out what to do with the waste that’s left over. It’s like keeping food in your refrigerator too long. You can sometimes figure out a way to save what you have and use it, but a lot of times it just makes more sense to toss it.”

## PAYING EXTRA

Even for builders who do have access to C&D MRFs, it may still not make sense to recycle their waste. That’s because, on average, tipping fees at C&D MRFs are \$77 per short ton compared with just \$43 at a C&D landfill, according to the EPA. Other landfills not specializing in C&D may accept C&D waste for as little as \$30 a ton.

“Landfills make their money off of volume,” says Damon Fogley, owner of JDog Junk Removal & Hauling of Hays County in the Austin, Texas, area. “If you’re doing a construction project and you’re getting dumpsters dirt cheap because you’re close to that landfill and their drivers don’t have to go very far, it doesn’t make economic sense to sort it or recycle it.”

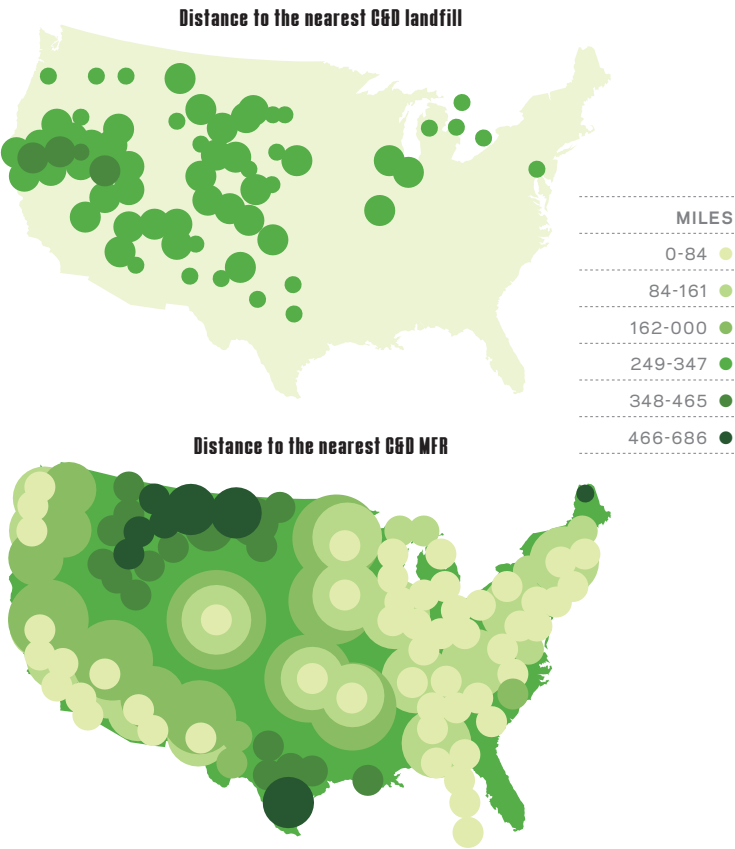
For builders who make the choice to pay that higher price anyway, though, their C&D waste still may not get recycled, as Urban NW Homes experienced.

“This may come as a shock to you, but sometimes, waste guys lie,” says the CDRA’s Turley. “You really have to make sure it gets recycled after it leaves your site.”

To do that, builders can look for certification from the Recycling Certification Institute, which audits the books of haulers and C&D

# RECYCLING ACCESS

In much of the country, well-intentioned builders would have to drive hundreds of miles to reach a landfill capable of sorting and recycling construction waste



SOURCE: U.S. EPA, “The State of the Practice of Construction and Demolition Material Recovery,” May 2017

facilities, to make sure they’re actually doing what they claim. Those audits can be especially important when trying to qualify for green building program points, or, in areas where C&D diversion is mandated, proving to an inspector that you’ve fulfilled the requirements of your building permit.

Then, there’s the software that Bradley’s Starlight company offers, which keeps a running tally for builders on exactly how much of their waste has been diverted on a project, in real time. “It gives them up-to-the minute materials management views so they can run their own diversion reports,” Bradley says. “It’ll give individual builders the opportunity to see where they are on recycling as of the very last dumpster that just left their site an hour ago.”

Despite the hurdles, there still are builders like Johns who put in the time, effort, and money to make sure their C&D waste isn’t adding to the problem. Johns eventually convinced his local hauler not to charge him more for recycling since he sorted it himself. And by using precut lumber and framing packages, while also taking steps like making sure his subs empty their caulk tubes so the cardboard hulls can be recycled, he was able to cut down on the trash his homes generate by as much as 80%, or 6,400 pounds of garbage per house. Not only does that help him qualify for NGBS points, but it also resonates with his eco-conscious customers in the Pacific Northwest.

Beyond that, it actually saves him money. By reducing his overall waste, Johns has been able to cut his trash hauling bills by almost \$400, to just \$510 per home, down from the \$900 he would have paid if he sent everything to the dump.

“You know, it’s everybody’s planet,” Johns says. “Not just mine, not just yours, not just the guy buying that house. This is everybody’s responsibility.” **B**