

Recycler Rental and Rewards

Oklahoma counties rent road recyclers to optimize maintenance program

OKMULGEE COUNTY, Okla. – Located less than 30 miles south of Tulsa, Okla., Okmulgee County shares many of the same concerns of countless other counties throughout the United States. Though primarily rural, Okmulgee County still needs to keep up with the unrelenting demands of road maintenance on a limited budget. This struggle is nothing new to the county administration scene, but how Okmulgee County is dealing with this issue is a testament to common sense and frugality.

Because rural county roads sustain a lesser burden of average daily traffic and the county itself is supported by a smaller tax base, the amount of money reserved for annual maintenance is much less than that of larger communities. Some rural county road commissions see their lower maintenance budget as a reason to rely more on basic maintenance methods or to dedicate their resources to smaller-scale projects. Okmulgee County is taking a more balanced approach by practicing basic maintenance when facing less severe problems and committing to substantial repair methods, such as road recycling, for long-term solutions.

This by no means is new thinking. Most county road commissions understand that recycling is a better way to address failing roads as opposed to patching, but typically rural entities cannot afford to buy recycling equipment. The Okmulgee County Commissioners could not agree more – that's why they rent the machines.

"If we had the money, we'd buy a recycler right now," said Jim Henson, District One County Commissioner for Okmulgee County. "But because we don't have the money nor is it feasible for us to buy one, we are currently renting the units."

Okmulgee County is broken up into three districts, each with its own commissioner. The commissioners serve on the Board of County Commissioners and meet on a regular basis at the courthouse in Okmulgee, Okla., to discuss county business and vote on appropriations.

Each district must oversee an approximate amount of road, along with having to manage separate equipment fleets, materials and crews to maintain it. District one is responsible for 362 miles, district two includes 276 miles and district three maintains 333 miles.

"Though we each have our own equipment fleets, we do share equipment and manpower from time to time," said Henson. "We all work well together – that's one of the keys to our success."

Each year, the commission decides what work needs to be done and what it will take to complete it. Currently, Okmulgee County dedicates about 15 percent of its annual road maintenance budget to road recycling.

"Basically, it comes down to which roads need it most – then we grind them up with the recycler and resurface them," said Henson. "We've got about 8 miles we want to do this summer. Other less serious maintenance concerns are addressed with new asphalt lifts and patching."

Road recyclers work by cutting, pulverizing and mixing an old or deteriorated asphalt pavement for reuse as a road base material. The pulverized material may be mixed with a binding agent or additional granular material for improved road base performance. Okmulgee County uses this process for both hot mix asphalt and chip and seal road surfaces.

"Actually, we've recycled asphalt roads for quite some time in Okmulgee County," said Henson. "I've been in office for three years and we've used recycling the entire time. The only major change in our program has been in the recycler technology itself."

Renting the recyclers from G.W. Van Keppel Equipment in Tulsa, Okla., the Okmulgee County Commission was recently introduced to the new BOMAG MPH454R road recycler/stabilizer. The MPH454R includes 196 cutting teeth that are strategically positioned for uniform material pulverizing, sizing and mixing with minimum vibration and shock load to the rotor and drive components. With a maximum cutting depth of 15 inches and the

ability to produce an eight-foot cut, the MPH454R is BOMAG's largest, most productive recycler.

"We first rented the big BOMAG machine last year," said Henson. "Our operators really liked using this machine because it cut deeper and wider, but also faster than smaller units we've used in the past. Bottom line is it just allowed us to do more work in a shorter period of time, which means less expense. With the smaller machine, depending upon the road thickness, we could grind up about one mile in an eight-hour day. Now with the new BOMAG unit, we've recycled as much as three miles per day."

After selecting a stretch of road to recycle, the district crew usually grinds an entire lane section at once before moving onto the next step in the repair.

"We can't close an entire road down, so we just do one lane and finish it before moving to the other side," said Henson. "But the recycler doesn't throw material, so there is no real safety risk to the public. Traffic can safely pass around the machine while it's grinding without a problem"

Depending on the quality of the previous road surface, aggregate and/or a binding agent may be added to the material as it is being ground and mixed by the rotor. "We typically add aggregate to provide for a better base, but sometimes, if the material is still in good shape, we won't add anything," Henson explained. With the new recycler, the surface usually requires only one pass for proper base material preparation.

Once the entire section is completed, the Okmulgee County crews add water to the windrows of material and compact it using rollers. The addition of water helps facilitate the compaction process. Once adequate density is achieved, the recycled material provides an excellent base for the new road surface to follow. Okmulgee County uses their own crews to perform chip and seal jobs, but if the recycled surface is to receive hot mix asphalt, the commissioners put the task up for bid.

"The roads that we're rebuilding using the recycler will last up to 10 years before we have to address them again," said Henson. "Of course, with chip and seal there's naturally more maintenance along the way, but the addition of an asphalt surface to the recycled base results in a high-quality, stable road."

With the continued success of recycled roads, Okmulgee is not the only Oklahoma county now using this technology. According to Henson, most of the eastern rural counties are renting recyclers on a regular basis. In fact, G.W. Van Keppel currently has six of the new BOMAG units in their Oklahoma equipment fleet and are having trouble keeping them in stock.

"Van Keppel has been great to work with," said Henson. "Though the machines are easy to use, they helped train us during the initial equipment delivery. Also, we just haven't had any problems with the recyclers, which is very important. The only real maintenance you have to worry about is changing the teeth out on the rotors, but this basically just means tapping the old ones out and tapping new ones in."

Road recycling is by no means a "new" process, but the fact that rural government agencies are implementing this method results in better mileage for the taxpayer's dollar and an ever improving driving surface. "Every commissioner I've talked to that's using recyclers likes the process because it's saving them money," said Henson. "Sure, I'd love to have the budget to go out and grind all of our roads and start over. In fact, we have a lot of roads that need it, but economically we just can't do it. But by committing a portion of our budget to recycling every year, we not only save money in the long run, but little by little, we end up with more miles of better road surfaces."