

# HIGH QUALITY MULCH FINDS EROSION CONTROL NICHE

**A**S MANY regions struggle to deal with water quality issues, mulch has come to be known as an effective erosion control product. Nonpoint source pollution of water is being linked to development projects and highway construction zones across the country. As a result, various state agencies are setting standards for organic erosion control products and practices. How organic material is used in any one given project is determined by these standards. Because of this, more mulchers are processing materials for markets driven by state or regional mandates. Businesses looking to move mulch quickly as an erosion control product must know how to process materials that meet specifications. In turn, businesses that use mulch in erosion control applications are investing in mechanical spreading equipment, making mulch an even more viable option.

## THE ROLE OF MULCH IN EROSION CONTROL

California, Maine and Texas are among the states that have developed specifications for the use of mulch in highway projects. The Texas Department of Transportation (TxDOT) has seen the use of mulch for erosion control grow. TxDOT, working with the Texas Natural Resources Conservation Commission, adopted specifications in 1998 for the use of compost in highway erosion control projects. In September 2000, an ad-

*Processors of wood residuals are finding it profitable to tap into highway and stormwater applications for mulch products.*

**A contractor's crewmember blows a filter berm at a highway construction site.**



ditional specification – the “Mulch/Compost Filter Berm for Erosion and Sedimentation Control” (Item 1034) – was approved. This specification grew out of the success of compost and/or mulch filter berms at TxDOT demonstration sites. (See “Texas Makes Inroads With Highway Use of Compost,” February 2001.)

The mulch filter berm is used when an area is not to be reseeded, so shredded brush meeting the specification would be used. (When the filter berm is to be reseeded, the compost filter berm would be used.) The mulch must come from weed free bark or wood and 98 percent of it must pass through a one-inch screen, 90 percent through a three-quarter-inch screen and not more than 30 percent through a three-eighth-inch screen. The material cannot exceed four inches in length, must have a moisture content of less than 60 percent, and consist of no less than 70 percent organic matter.

While more compost has been used in berms than mulch, both perform great, says Barrie Cogburn, a landscape architect with TxDOT. The berms are used in upslope and downslope applications and under bridge overpasses. “The project engineers love them. The contractors’ crews don’t have to go back out and fix slopes that fall in heavy rains, so they like it too. And it keeps the Environmental Protection Agency (EPA) happy because we don’t have problems with dirty water running off our construction sites.” She reports similar reactions to mulch used on slopes for erosion control. TxDOT maintenance crews also are pleased with the berm products because nothing needs to be taken to a landfill after the project is completed and mowers can disperse the materials. In Texas, more and more project engineers are looking at the demonstrations of the filter berm mulch and filter berm compost, liking what they see, and



then using the erosion control methods in their own projects.

Cogburn says Texas is nowhere near using all of the mulch that meets TxDOT specifications for erosion control products. However, if demand for mulch continues to increase at the same rate it has been growing, new suppliers will need to be actively sought out. "The timing is right. Mulch and compost, or combinations of the two, work for erosion control. It's a great market for what's considered wood waste — which we pay top dollar for," Cogburn notes. "Since we implemented the specifications for compost and mulch, we went from using no compost or mulch to 100,000 cubic yards a year." The mulch supply is coming from municipal yard trimmings, unrecoverable pallets untreated wood residuals from construction companies and utility trimmings.

### PROCESSING MULCH TO MEET SPECIFICATIONS

The city of San Diego, California operates the Greenery, which produces 90,000 tons of

mulch samples, it is obvious it is a high quality product."

The Caltrans Storm Water Quality Handbook for Project Planning and Design Guide says the following criteria should be considered in mulch selection: Cost, including material, preparation, installation and add-on expenses; Effectiveness at reduction of erosion, flow velocity and runoff; Acceptability, including environmental, institutional and regulatory compatibility and visual impact; Vegetation enhancement, including native plant compatibility, moisture retention and germination rate; Installation; and Operation and maintenance. More specifications are currently being refined.

The Greenery also is actively marketing mulch through the Stormwater Pollution Prevention Division of the San Diego Environmental Services Department for the city's General Services Department. The division was established in 2000 to train all city departments on appropriate stormwater pollution mitigation measures. "As soon

Mulch to be used in Caltrans projects must be windrowed and reach an internal temperature of 56°C for at least 15 days. It also must be turned at least five times during the heat phase and then cured for at least 90 days.



**A pneumatic blower truck is used to ease application of an erosion control mix on a roadside slope in Texas.**

as the division was formed, we invited their staff to take a tour of our facility and to provide them with relevant background information showing the efficacy of green waste mulch as a sediment retention measure," says Grealy. As mulch is marketed to government entities as well as businesses as an effective erosion control product, it is becoming more difficult to keep up with demand, he adds.

### CERTIFIED CONTRACTORS

Mulch Maine-ia of Augusta, Maine, is one business that is tapping into demand for erosion control products. "We started out in the ornamental landscape arena," says Kevin Lane, "but have shifted our focus." Mulch Maine-ia locates the highest quality supplier of mulch closest to the site where it will use the material. The company employs certified erosion control contractors who have completed an eight-hour training course on erosion control practices that are available through the Maine Non-point Source Training and Resource Center. The course provides instruction on erosion control planning and the proper installation of the state's best management practices. After completion of the course, a construction site must be evaluated to determine if the candidate can adequately install and maintain erosion control practices. If the standards are met, the candidate is certified for two years. Certified erosion control contractors can be found on the Maine Department of Transportation (MEDOT) web site, as can a list of mulchers that generate

mulch and compost annually. Mulch is made from green wood residuals and yard trimmings. Wood chips are made from pallets and clean construction wood residuals. The California Department of Transportation (Caltrans) has specifications for all green wood residuals that are to be used as mulch. The material must go through a Process to Further Reduce Pathogens (PFRP). The mulch must be windrowed and reach an internal temperature of 56°C for at least 15 days. It also must be turned at least five times during the heat phase and then cured for at least 90 days.

According to Stephen Grealy, recycling program supervisor with the city of San Diego, the PFRP and strict quality control measures at the Greenery account for the high quality products selected for use in Caltrans projects. "We process materials that meet or exceed current Caltrans spec," he says. "When project engineers see our



In Maine, the Department of Transportation uses close to 30,000 cubic yards of mulch annually for erosion control.

products that meet specifications. TxDOT employees have access to a similar list.

Robert LaRoche, supervisor of landscape architecture for the MEDOT, says mulch has been used in erosion control projects since the late 1980s and MEDOT has had specifications for compost products since the early 1990s. Woody feedstocks are specifically approved for what the state specifies as wood waste erosion control mix. In application, the mix must be spread to a minimum depth of four inches. Erosion control mixes are used on slopes of up to 2:1 and for filter berms. The mix generally consists of 50 percent compost and 50 percent mulch.

“We find that a mix of fines and larger



**San Diego's Greenery supplied mulch for this California Department of Transportation erosion control project, where the product was applied to a freshly graded hillside.**

pieces works best,” LaRoche says. The department uses close to 30,000 cubic yards of mulch annually for erosion control. One hundred percent of mulch material must pass through a six-inch screen, and a minimum of 70 percent, maximum of 85 percent must pass through a three-quarter-inch screen. The organic matter content must be between 20 and 100 percent by dry weight. “Large portions of silts, clays or fine sands are not acceptable in the mix,” LaRoche continues. Soluble salt content must be less than four mmhos/cm, and pH content must be between 5.0 and 8.0. The MEDOT standards are a result of various research projects. “The use of the organic materials is as good if not better than the synthetic alternatives at reducing erosion,” LaRoche says. Mulch Maine-ia’s biggest jobs for the MEDOT involve replacing silt fences with mulch filter berms.

#### **TECHNOLOGY CREATES NICHE**

As the application of mulch for erosion control becomes more widely used, more businesses are investing in blower trucks. Typically, erosion control projects span large sections of slopes. In Texas, 12 blower trucks have been purchased in the past 18 months. There weren’t any in the state previously. Maine has experienced a similar surge and the transportation department there has used blower trucks to apply erosion control products in hard to reach areas and where soils should not be further disturbed, according to LaRoche.

In Texas, more and more highway contractors are starting to choose mulch businesses that offer blower truck services, Cogburn says. “They know they’ll get great results with the trucks and they’re even starting to use them for flat ground because of the success rates and easy application.” — A.S. ■

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