



GREEN PURCHASING CASE STUDIES: OLD TIRES FIND NEW LIFE IN SPORTS FIELDS

CITY OF PORTLAND, BUREAU OF PURCHASES

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Delta Park's soccer field contains crumb rubber, a product made from old tires that provides cushion for artificial turf.

PURCHASING GREEN

In 1997, Park Services, a department of Portland Parks & Recreation, used crumb rubber made from shredded old tires as part of the installation of artificial soccer fields in Strasser Field at Delta Park and Mary Rieke Field at Mary Rieke Elementary School.

FieldTurf is comprised of artificial turf sewn into a synthetic fiber carpet, which is then infilled with crumb rubber and sand. Although a common practice now, Delta Park and Mary Rieke were among the first fields in the world to use FieldTurf.

BENEFITS

Crumb rubber is made from recycled materials: scrap tires. Instead of being stockpiled or landfilled, old tires can be shredded into crumb rubber for use in athletic fields and for other purposes. One passenger tire can be turned into 10-12 pounds of crumb rubber. It typically takes between 20,000 and 40,000 scrap tires to produce enough infill to cover a football field. Strasser Field used about 140 tons of crumb rubber while Mary Reike Field used about 104 tons.

Unlike the Astroturf-like synthetic grass of the past, new technologies like FieldTurf are designed to perform more like natural grass. The crumb rubber serves as a cushion in the synthetic grass rug and improves traction in all weather conditions. Studies have shown that FieldTurf and natural grass have similar injury rates.

COST

The total cost for Strasser Field—including FieldTurf and base preparation—was about \$578,000 while the total cost for Mary Rieke Field was \$365,000.¹ Delta Park spent an additional

AT A GLANCE

WHO

Park Services

WHAT

Crumb rubber made from old tires

COST

Initial installation cost \$578,000 at Strasser Field and \$365,000 at Mary Rieke Field

Reduced maintenance and operation costs

Must be replaced in 7-10 years

BENEFITS

- ✓ Uses recycled material
- ✓ Easier to maintain
- ✓ Allows for more frequent use

¹The installation at Mary Reike Field cost significantly less because it used a slightly lower quality, and therefore less expensive, FieldTurf. FieldTurf no longer offers this product.

\$212,000 for lights and fencing. Once applied, the artificial turf is easier and less costly to manage than natural turf. Since artificial turf requires little or no water, fertilizer, and pest management, Park Services further saves on maintenance costs. The crumb rubber requires raking approximately six times per year.

However, artificial carpet and infill wears out after 7-10 years and must be replaced at significant expense. The synthetic carpet and infill at Strasser Field is all scheduled to be replaced in the summer of 2008 with a new version. The new material is purported to be longer lasting, more closely mimics natural turf, and contain less lead than the old material (used to fix colors in older synthetics). This time, the infill material will be sand and cryogenic rubber as earlier, but containing recycled NIKE sports shoes in as well.

“Delta Park’s Strasser Field is appreciated by the users for its consistently level playing surface and for the fact that it is available during the winter months when the natural grass fields are closed due to weather conditions.”

Debra Kneeshaw
Park Technician, Delta Sports Complex

PERFORMANCE

Artificial fields can be used more frequently than natural fields with less damage to turf. Because they are more durable and less affected by wet and cold weather, Strasser and Mary Rieke fields can be used year-round, unlike natural fields which are closed December through April. Using artificial fields also helps Park Services manage its natural fields. For example, Delta Park can close one of its eight natural fields for maintenance without losing play time by increasing use at its artificial field.

LESSONS LEARNED

Although successfully used in artificial turf at Strasser and Mary Rieke fields, crumb rubber did not prove as viable when used in a natural turf field at Lents Park in 2000. Unlike the artificial field installations, crumb rubber was tilled into the soil in addition to being used as a top dressing. This required Park Services to keep people off the field for four months to allow new grass to grow, which was difficult to enforce at the popular Lents Park. The crumb rubber itself further impeded grass growth, and Park Services had to use more water, fertilizer, and pest management than usual to protect the little grass that was able to grow. Other natural fields across the country have effectively used crumb rubber solely as a top dressing for natural turf – without tilling it into the soil. Park Services may consider this option for natural fields in the future.

ABOUT PARK SERVICES

Park Services manages the extensive day-to-day maintenance of Portland’s parks, gardens, and facilities as well as the operation and recreational programming of all community centers and swimming pools. Park Services is part of Portland Parks & Recreation, which is the steward of 10,000 acres of land at more than 250 locations.

FOR MORE INFORMATION

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