RESEARCH NOTES

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April 1994 RSN 94-2

Recycled Plastics in Highway Construction and Maintenance

The Oregon public and Oregon Legislature have great interests in the use of recycled waste products. The costs of waste disposal continue to increase as existing landfills approach maximum capacity forcing development of additional landfills. In response to these concerns, the Legislature passed Oregon Senate Bill (SB) 66, in part, directing the Oregon Department of Transportation to conduct a research project to evaluate the use of recycled plastic products and composite materials containing recycled plastic in construction and maintenance. Since the fall of 1992, recycled plastic snow poles, fence posts, sign posts, and a sound wall have been installed in Oregon.

To meet the intent of SB 66, snow poles were installed near Government Camp; fence posts were installed near Tillamook and Jordan Valley; and sign supports were installed near Portland, Salem, and Coos Bay. The sound wall was constructed just south of Salem, on the west side of Interstate 5.

The sound wall is 96-foot long, 10-foot high, and comprised of twelve panels. Eight panels are of boards manufactured from recycled plastic, plastic and fiberglass, plastic and wood fibers, or plastic and carpet fibers. One panel is a plastic shell filled with shredded rubber tires. Three panels are of pressure treated tongue and groove wood lumber. The performance of the wood panels will be used as a control for evaluating the performance of the recycled products.

The findings of the study to date are:

- ✓ Recycled plastic materials may be more difficult to obtain than standard wood products. Up front material and shipping costs are more expensive than comparable wood products. Depending on the life expectancy of the recycled plastic products, the plastic products may be more cost effective (i.e., they may last longer than comparable wood products and provide a better value).

- ✓ Handling of recycled plastic materials is similar to handling treated wood products except recycled plastic materials are heavier. The recycled plastic and composite materials sawed and drilled much like wood.

- ✓ Recycled plastic materials may be more readily recyclable than treated wood products. The majority of the recycled plastic suppliers indicated they would recycle any of their own damaged materials. In some cases, the manufacturers are establishing a buy-back process. Damaged treated wood products, however, must be buried or burned in commercial or industrial incinerators.

SUMMARIES OF CURRENT TRANSPORTATION RESEARCH

The recycled products will be monitored for resistance to weather, ultra-violet light, and overall performance with comparisons made to standard wood products. An interim report detailing the performance of the materials will be prepared next year. The study will continue through 1997.

The construction report, "Recycled Plastics in Highway Construction and Maintenance," has just been published by the Research Unit. It covers the installation of the recycled products and construction of the sound wall. To obtain a copy of this report or additional information regarding this topic, please contact:

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