



# Recycled Materials Resource Center

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## Quarterly and Final Report for RMRC Research Project No. 30

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- **Project Title:** Tire-Rubber Anti-Vegetation Tile Evaluation
  - **Name of PI:** Woody Raine
  - **Affiliation of PI:** Texas Department of Transportation (TxDOT)
  - **Final Report No. 30:** June 1-August 31, 2004 (includes project's last quarter)
  - **Dates of ETG Meetings:** None held this quarter.
  - **Documents Generated:** Project Installation Instructions, Project Installation Report, Project Time Report, A/V Tile Demonstration Project Pictures, Project Do's and Don'ts.
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- **Date Project Started:** February 1, 2004
  - **Date Project Terminates:** August 31, 2004 (with evaluations continuing over the next six months).
  - **Next Quarterly Report Due:**
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- **Summary of Research:**

Progress to Date  
**All nine TxDOT district offices have installed the anti-vegetation signpost tiles.**  
The manufacturer has delivered the "topHat" tiles for installation by the Austin District Office.

Problems Encountered  
The Austin District has not been able to install the "topHat" tiles due to problems with the district guardrail installation contractor.  
TxDOT was delayed in paying the tile manufacturer due to errors on the invoice.

Actions Planned for Next Quarter  
Although the contract term has expired, work continues with Tasks 5 & 6.  
See details in report.
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## **1. BACKGROUND**

The mission of the Texas Department of Transportation (TxDOT) is to provide safe, effective and efficient movement of people and goods. A major part of TxDOT's vision is to be a progressive state transportation agency recognized and respected by the citizens of Texas, providing comfortable, safe, durable, cost-effective, environmentally sensitive and aesthetically appealing transportation systems that work together. The TxDOT Recycling Program's three primary goals are: **1)** to buy recycled products and materials, **2)** to recycle and reduce the amount of waste that TxDOT generates, and **3)** to communicate the potential advantages, savings, and benefits of recycling and recycled products to TxDOT staff, roadway construction contractors, and the public.

The purpose of this project is to evaluate the ease and cost of installing anti-vegetation tiles made from recycled tires to control vegetation around guardrail and sign posts. The project also compares their effectiveness and life-cycle costs to other TxDOT approved designs, such as using grout or concreted installed around guardrail posts or signposts. Several TxDOT districts evaluated their long-term performance in diverse climate conditions. Selecting a set of sites in Texas with diverse climate and terrain will make the project's findings useful across much of the United States. TxDOT used RMRC Investigative Research funds to purchase these anti-vegetation tiles.

If tire-rubber tiles for guardrail and sign posts are eventually accepted for use in new construction, retrofits, and maintenance to control vegetation, this could consume more than 500,000 tires' worth of scrap tire rubber that is generated in Texas each year.

## **2. PROGRESS REPORT**

Welch Products, Inc. and TxDOT personnel have worked closely to develop the specifications and designs for the signpost ring and the "topHat" guardrail post tile (an anti-vegetation tile designed to fit around a guardrail post and taking the place of grout in a "leave-out" section of the installation). Nine TxDOT district offices across the state of Texas agreed to participate in this demonstration project including Austin, Beaumont, Childress, Corpus Christi, Dallas, El Paso, Lufkin, Pharr, and Tyler.

On May 5, 2004, the TxDOT Austin District was first to install the anti-vegetation (A/V) tile using Project Installation Instructions, a Project Installation Report, and a Project Time Report, prepared by the TxDOT Recycling Section. Based on observations and pictures taken during this installation, the TxDOT Recycling Section prepared and sent Installation Dos and Don'ts to each of the participating districts to assist in their preparation for the tile installations. Several districts reported that these Demonstration Project Pictures, and Project Dos and Don'ts were very helpful for streamlining their installation procedures. Districts also reported on the ease of installation, the overall appearance of the completed tile installation (looks like a concrete pad), and the potential cost savings over the use of concrete pads (a 36-48" concrete surface around a signpost).

The nine TxDOT districts completed the installation of their signpost tiles during May and June 2004. The Austin District Office received the "topHat" tiles during the last week of June 2004, but installation has been delayed by the District guardrail installation contractor.

Participating districts began the season's mowings of the season occurred during the last week of May through the second week of June 2004. The first monitoring (tile evaluation) reports were completed by each of the participating districts following that first mowing. The districts continue to report their observations after subsequent mowings.

## **3. PROBLEMS ENCOUNTERED**

Because of design issues, the manufacturer initially delayed signpost tile product delivery until the first week of May 2004. Design of the "topHat" necessitated production adjustments and further delayed delivery of

the product by the vendor to the Austin District until the last week of June, 2004. Further delays have now occurred due to problems with the Austin District's guardrail installation contractor.

TxDOT paid the product manufacturer, Welch Products, later than was originally anticipated due to errors on the invoices.

#### **4. ADDITIONAL ACTIVITIES**

Tony Tijerina, project coordinator, has continued to develop the Anti-Vegetation Tile Demonstration Project webpage (see: <http://www.dot.state.tx.us/gsd/recycle/tile.htm>) that was added to the TxDOT Recycling and Recycled Products Program website in June 2004. This webpage highlights the activities of the demonstration project and includes photographs and reports of each of the district installations. Work is continuing on the development of cost comparisons on the use of the tiles versus the use of concrete pads around the perimeters of the signposts.

#### **5. WORK PLANNED FOR NEXT QUARTER**

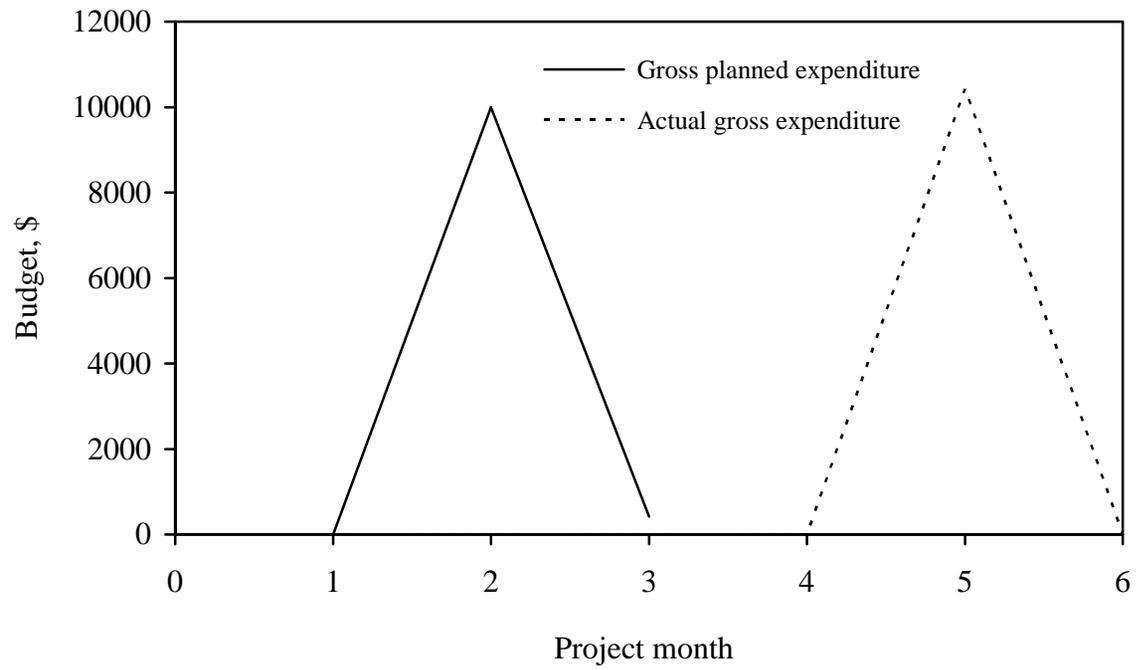
Although the term of the contract has expired, during the next quarter, TxDOT will continue evaluating the performance of the tiles during the final part of the mowing season. TxDOT will also work with the Austin District on the "topHat" guardrail post tile installation during the month of September. Finally, cost comparisons will be developed comparing the cost of tile installation versus other typical methods of vegetation management.

#### **6. PROJECT TIMELINE AND BUDGET**

A timeline and budget for the research project is given in Figures 6.1 and 6.2 respectively.

As shown, the project is currently slightly behind schedule but still under budget.





**FIGURE 6.2:** Research Project Budget