

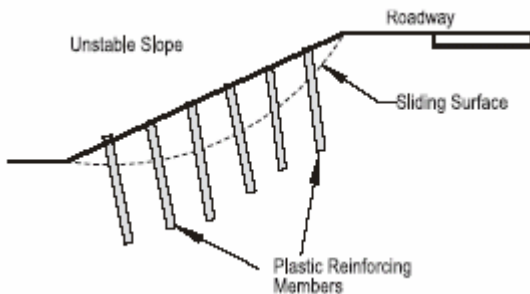
**AASHTO Technology Implementation Group
Nomination of Technology Ready for Implementation
2005 NOMINATIONS DUE BY FRIDAY, SEPTEMBER 9, 2005**

Sponsoring DOT	1. Sponsoring DOT (State): Missouri DOT		
Primary Technical Contact	2. Name: Tim Chojnacki		
	Organization: Missouri DOT		
	Address: P.O. Box 270		
	City: Jefferson City	State: MO	Zipcode: 65102
	E-mail: Tim.Chojnacki@modot.mo.gov	Phone: 573.751.1040	Fax: 573.526.4337
Technology Description	3. Name of Technology: Slope Stabilization Using Recycled Plastic Reinforcement		
	4. Briefly describe the technology. The technique consists of installing recycled plastic reinforcing members into a slope to intercept potential sliding surfaces and provide the resistance needed to maintain the long-term stability of the slope. The technique is similar to soil nailing and soil doweling in that a collection of reinforcing members is used to provide positive reinforcement of a soil mass. However, the technique differs from more traditional techniques in that the reinforcing members are fabricated from recycled plastics and other waste materials as opposed to more conventional construction materials like timber, concrete, and steel. These differences in material properties provide distinct advantages in many respects, but also necessitate that differences be specifically addressed in the design and construction process so that slide areas are effectively stabilized.		
	5. Briefly describe the history of its development. Research on this stabilization technique has been documented in three separate reports published by MoDOT (Loehr and Bowders, 2000; Loehr et al., 2003; and Loehr and Bowders, 2006). Persons interested in the details of these evaluations are referred to these reports for detailed descriptions of the investigations. The overall result of these investigations has been to demonstrate a technique that, when utilized in appropriate conditions and constructed following established procedures, has proven to be effective at stabilizing surficial slides at costs that are often substantially less than other potential options.		
State of Development	6. For how long and in approximately how many applications has your organization used this technology? The first installation of the recycled plastic reinforcement was completed in 1999. Based on the positive results at that site, four additional sites have been repaired with this technique from 2001 to the present.		
	7. What additional development is necessary to enable routine deployment of the technology? A construction manual is currently being finalized. Short courses are scheduled by the end of the year to train individuals in the design and installation procedure.		
	8. Have other organizations used this technology? If so, please list organization names and contacts.		
	Organization	Name	Phone

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Potential for Payoff	<p>9. What benefits has your organization realized from using this technology? Include cost savings, safety improvements, transportation efficiency or effectiveness, environmental benefits, or other advantages over other existing technologies.</p> <p>Traditionally, these shallow slides were repaired by reestablishing the slope and reseeded. In some cases the same areas needed attention year after year following spring rains. The costs for these maintenance repairs are not available. The benefits of this technology are to more permanently repair these areas, freeing up maintenance forces for other operations and the environmental benefit of using a recycled waste material for positive use.</p>
Implementation Potential	<p>10. Please describe what actions another transportation agency would need to take to adopt this technology.</p> <p>Adoption of the proposed specification and training for personnel are all that would be needed to implement this technology.</p>
	<p>11. What is the estimated cost, effort, and length of time required for procurement or adoption by another transportation agency?</p> <p>Other transportation agencies could easily adopt this technology with minimal effort and costs. The actual costs of repair of shallow slopes ranges between \$1.00 and \$4.00/ square foot in addition to the regrading. The range in cost is due to the concentration of reinforcement due to design.</p>
	<p>12. What organization(s) currently supply and provide technical support for this technology?</p> <p>University of Missouri-Columbia J. Erik Loehr Assistant Professor Department of Civil Engineering, University of Missouri – Columbia (573) 882-6380, eloehr@missouri.edu</p>
	<p>13. Please describe any legal, regulatory, social, intellectual property, or other issues that could affect ease of implementation.</p> <p>None apparent</p>
Willingness to Champion	<p>14. Is the sponsoring DOT willing to promote this technology to other states, if partially supported by the AASHTO Task Force on Technology Implementation? X Yes <input type="checkbox"/> No</p>
Date Submitted	<p>15. Date: September 9, 2005</p>

16. Please include image(s) of sketches or photographs, if available Image(s) are attached.*



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