

FY 2010 RESEARCH PROBLEM STATEMENT

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TITLE ([more info](#))

Evaluation of methodology to prevent root intrusion in multi-use trails.

PROBLEM (Description of need) ([more info](#))

Multi-use trails are quickly becoming an integral part of the transportation system as we look for alternatives to auto travel. Asphalt paving on trails can last for many years with limited maintenance due to the very light impact of the traffic using the trail. Root intrusion, however, is a threat to the integrity of the pavement that often requires repair or reconstruction, and can surface as early as within weeks of new trail construction. Trails often travel through wooded riparian areas where there is an abundance of cottonwood and willow trees, which are notorious for having shallow root systems that can be detrimental to pavement. Tree removal is often not feasible or preferable for environmental and/or aesthetic reasons, nor is trail relocation as there is often a narrow easement corridor and potential environmental concerns that constrict trail placement. There is currently limited research on the effectiveness of root intrusion prevention strategies like root barrier and pervious pavement. Trail managers face the decision of whether to install costly and unproven mitigation strategies or to build the trail with the standard specification and deal with the problem areas as they surface. Maintenance budgets are limited and often don't include enough funding to repair or rebuild problem areas, which can become so deteriorated that they are safety hazards. Public perception can become negative- "they didn't build it right, it's already failing" or "why build more trail if they can't take care of what they have?" If information on where to use which root prevention strategy existed, trail managers could properly construct new trails and rebuild existing problem areas to avoid future maintenance issues.

PROPOSED RESEARCH, DEVELOPMENT OR TECHNOLOGY TRANSFER ACTIVITY ([more info](#))

Examine where and how root intrusion occurs along existing trails. Review existing research on the topic. Set up test plots both on new trails and on repair sections of existing trails utilizing various methods of prevention and evaluate the performance of the methods. Recommend root intrusion prevention solutions for various situations (new trail construction, existing trail repair, proximity to tree, site considerations, trail type, etc.). Develop plans and specifications for the proposed solutions.

BENEFITS [\(more info\)](#)

The information from this research would facilitate better use of ODOT Transportation Enhancements funding- the trails constructed incorporating solutions from this research would be of a higher quality and solve the largest maintenance issue on multi-use trails.

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Problem Statement Number: