

RESEARCH PROBLEM STATEMENT

DATE:	09/03/2018	PROJECT AREA:	Maintenance
--------------	------------	----------------------	-------------

TITLE: Flatliner Cold Planer Evaluation for Highway Construction and Maintenance

PROBLEM STATEMENT:

Pavement Smoothness is one of the most important features of a quality roadway. In maintenance and construction, obtaining pavement smoothness is a constant battle that can be a major cost to the department and to private contractors. In construction, diamond grinding is the primary method of achieving the pavement smoothness whenever the pavement is out of spec. The cost of diamond grinding is extremely high due to the equipment needed to perform the diamond grinding. (Water Truck, Slurry Removal Equipment, Traffic Control Equipment, etc.) Another issue with diamond grinding is the environmental impact from the slurry produced during the operation. Flatliner grinding is a dry grind operation that works similar to wood planer. The Flatliner is a milling drum attached to a straightedge that uses flat blades to grind high spots in asphalt and concrete pavement. This operation is significantly faster and cheaper than diamond grinding. The Flatliner can attach to a skid-steer for easy access and quick mobilization. Due to the relatively low cost of the flatliner, maintenance could utilize the benefits of having a flatliner to correct issues in pavements during the life of a pavement.

OBJECTIVES:

The objectives of the research project are to:

- 1) Perform a cost benefit analysis of the use of a flatliner for grinding compared to a diamond grinding operation
- 2) Examine usefulness of Flatliner in daily maintenance of pavements in Arkansas.
- 3) Determine the effect of flatliner grinding on pavements in pavement life cycles.

FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:

Flatliner research will have 2 key phases of implementation:

- 1) Create a guideline for use of Flatliner in daily maintenance operations.
- 2) Adjust specifications for Flatliner use in pavement smoothness.

Estimated Project Duration: 24 Months

PREPARED BY: William Caster

AGENCY: Arkansas Department of Transportation

PHONE: (501) 569-2498 **REVIEWER:** Bentley Reynolds

Standing Subcommittee Ranking	Advisory Council Ranking	Statement Combined with Statement Number(s)
3/6	27/37	7/37