

COLD RECYCLING ASPHALT PAVEMENT

US RTE 4 SHERBURNE, VT

INTERIM REPORT 82-8
OCTOBER 1982

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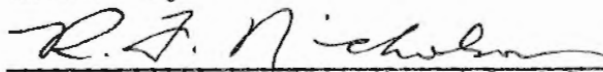
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"The information contained in this report was compiled for the use of the Vermont Agency of Transportation. Conclusions and recommendations contained herein are based upon the research data obtained and the expertise of the researchers, and are not necessarily to be construed as Agency policy. This report does not constitute a standard, specification, or regulation. The Vermont Agency of Transportation assumes no liability for its contents or the use thereof."

INTRODUCTION

This interim report describes the condition and performance of a 1.5 mile section of U.S. Route 4 in the Town of Sherburne, Vermont which was cold recycled in the fall of 1978 due to "severe cracking, heaving and rutting." The performance of the recycled section is compared with an adjacent 0.7 mile segment of U.S. Route 4 which was treated with a standard bituminous concrete overlay.

For detailed information on the construction phase of the experimental treatment, refer to Initial Report 79-1 published in January, 1979.

CONSTRUCTION PROCEDURE AND COST

Recycled Section (6945')

1. Top 4 inches of pavement pulverized with cold planing equipment.
2. Pulverized pavement brought to optimum moisture content and stabilized with 1.5% to 2.9% CMS-2 asphalt emulsion.
3. Two 1 inch lifts of Type III Bituminous Pavement placed over compacted stabilized base course.

Cost of treatment = \$7.90/sy.

Recycled Section (500')

Treatment equal to Section A except no asphalt added to pulverized pavement.

Cost of treatment = \$7.42/sy.

Control Section (3700')

1. Pavement cracks were not routed and sealed with asphalt rubber crack filler as initially planned.
2. One-half inch leveling course omitted due to the absence of significant deformations in the pavement surface.
3. One 1 1/2 inch lift of Type II Bituminous Pavement placed over existing pavement.

Cost of treatment = \$1.83/sy.

PAVEMENT SURVEY RESULTS

Pavement Crack Development

	<u>Pulverized & Asphalt Stabilized Area</u>	<u>Pulverized - No Asphalt Added</u>	<u>Control 1½" Overlay</u>
Cracks in Orig. Pavement 9/78	Numerous	Numerous	679'/100 LF
Cracks on 5/79	None	None	117'/100 LF 17% crack reflection
Cracks on 5/80	4'/100 LF 20 cracks noted with 15 longitudinal, ave. 18' each, 4 misc., 1 transverse.	14'/100 LF 7 cracks noted, all longitudinal, ave. 10' each.	236'/100 LF 35% crack reflection
Cracks on 7/82	186'/100 lf	352'/100 lf	447'/100 LF 66% crack reflection

Rutting and Miscellaneous Distress

	<u>Pulverized & Asphalt Stabilized Area</u>	<u>Pulverized - No Asphalt Added</u>	<u>Control 1½" Overlay</u>
Rutting in Orig. Pavement	Up to 3½"	Up to 5/8"	*Up to 5/8"
Rutting on 5/79	**Up to ½" at localized areas on climbing lane.	Insignificant	Insignificant
Rutting on 10/79	** Up to 11/16" at localized areas on climbing lane.	1/4" maximum	1/4" maximum
Rutting on 5/80	**13/16" maximum with 1/4" or less on 97% of the section.	1/4" maximum	1/8" - 3/8"
Rutting on 7/82	*1" maximum with 5/16 or less on 90% of the section.	1/4" maximum	1/16" - 5/16"

Riding Quality

Riding quality as measured in inches of roughness per mile with a Mays Ride Meter.

	<u>Pulverized & Asphalt Stabilized Area</u>	<u>Pulverized - No Asphalt Added</u>	<u>Control 1½" Overlay</u>
Value on 7/80	39.0	*	*
Value on 10/81	47.5	*	*
Value on 10/82	54.0	48.8	46.4

* No readings taken.

Maintenance Requirements

The experimental and control sections have not required any significant corrective action and no maintenance is anticipated in the near future.

SUMMARY

The section of roadway cold recycled in 1978 is performing well considering its extremely poor condition prior to retreatment. At this time, it is not possible to determine if the recycling process will extend the maintenance free life of the roadway for sufficient time to justify the additional cost of the treatment.

The Agency will continue to monitor the experimental and control sections until retreatment is required.