RESEARCH NOTES

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AC/CRC ADJACENT LANE SURFACING

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Asphaltic Concrete (AC) and Portland Cement Concrete (PCC) are common roadway materials used in Oregon. In a recent construction project, Poverty Flats - Meacham Section, the Oregon State Highway Division (OSHD) designed a "test section" consisting of one AC lane and one Continuously Reinforced Concrete (CRC) lane. The inside lane consists of AC and the outside lane consists of CRC; the pavement is expected to have the superior strength, durability, and life span of CRC, yet not as high a cost as "all CRC." The goals of the study are to determine the performance, safety, and cost-effectiveness of this "AC/CRC Adjacent Lane Surfacing."

A 5-mile AC/CRC "test section" was built as part of the twelve mile long upgrade from all AC to all CRC surfacing on Interstate 84 between milepoints 225 and 238, in Northeastern Oregon. The climate generally has mild summers and cold, harsh winters. Heavy trucks make up a large percentage (39%) of the daily traffic and the vast majority (90%) of those trucks drive in the outside lane. This combination of severe traffic and environment is very hard on AC surfacing and is the reason for this upgrade.

During construction, the majority of the existing AC pavement was removed and placed into the median and drainage ditches as granular fill. The remaining pavement was left in place and used as a base for the new CRC pavement and for the new AC inside lane within the test section. Outside the test section, the CRC was placed in both lanes. Within the test section, the outside lane was built with CRC as described above, while the inside lane was "milled down" and paved with AC. The shoulders were then paved with AC.

After two years of use, surveys show the pavement surfaces are performing very well. All distress noted was minimal, considering the local environment and age of the roadway. Also, friction values of both pavement types are similar to typical pavements on Oregon state highways of the same age. Reports indicate no significant increase in accidents since construction. However, there is insufficient data available for a meaningful statistical analysis.

A small percentage of the highway users feel the AC/CRC Adjacent Lane pavement is awkward. Instead of traveling from one pavement type to another (as when changing lanes), they prefer either all AC or all CRC pavement. This number of people, however, is very small and most people do not even notice the change in pavement as they travel from one type to another. Based on experience with similar pavement types, the public is expected to become accustomed to this style of pavement and feel comfortable with it. The overall motorist safety, based on surface conditions, accidents, and user confidence, has not been affected by the AC/CRC adjacent lane pavement.

A cost analysis comparing this project as built with CRC pavement in all lanes to the same project built with AC/CRC adjacent lane pavement, indicates that, for a typical 30-year life span, the AC/CRC pavement has a 9% cost savings over the all CRC pavement. These figures are based on actual construction costs and projected maintenance costs over a 30-year period.

Recently, the preliminary findings of this research were published by the OSHD in a construction/interim report, titled "AC/CRC Adjacent Lane Surfacing." Based on information to date for this study, AC/CRC adjacent lane surfacing appears to be a viable alternative to "all CRC" surfacing. A final report on this Experimental Features Project will be published in 1992. This final report will contain an updated cost analysis, conclusions, and recommendations for the use of AC/CRC adjacent lane surfacing.

If you would like a copy of the construction/interim report or any additional information on this topic, please contact:

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