

RESEARCH NOTES

OREGON DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICES SECTION
2950 STATE STREET
SALEM, OREGON (503) 986-2700

March 1996

RSN 96-1

Over a year ago, a research project was initiated to evaluate the effectiveness of raised and recessed pavement markers. Recessed markers were compared to raised pavement markers and both solvent and water based paint. Recommendations for placement and slot design of recessed markers were investigated.

Our findings indicate that recessed markers should not be used at all by ODOT. Reasons for this recommendation include expense and poor performance. Recessed markers cost approximately \$100 per year more per mile for a single skip line than raised markers. This cost is based on a three year life, 12-year analysis period and a discount rate of 4%. Recessed markers also do not perform as well as raised markers. The initial performance is reduced strictly because it is recessed. The slots collect debris, rain and snow and when covered are ineffective.

Paint striping and raised markers are still good alternatives for marking our state highways. Paint has a minimal life cycle cost with minimal traffic impacts during replacement. Raised markers provide excellent lane delineation both visually and audibly, creating a public perception of increased safety. Raised marker applications should be prudently selected because the costs are around \$250 more per year per mile than paint. Also, the reflectivity may drop as much as 70% in the first year, making them less effective.

The following matrix has been developed to facilitate choosing the type of marking material that should be used by ODOT. Consideration should be given to the selection of a marker or paint based on ADT, roadway alignment and adverse weather conditions.

	SNOW ZONE (elev. >2,500')	NON-SNOW ZONE		
		<10,000 ADT ¹	10,000 - 30,000 ADT	>30,000 ADT
GOOD ALIGNMENT	PAINT	PAINT	RAISED/PAINT	RAISED
POOR ALIGNMENT ²	PAINT	RAISED/PAINT	RAISED/PAINT	RAISED

¹ Raised markers should be considered for high seasonal traffic volumes and for heavy rain and fog zones.

² Consider durable markings for special applications.

If you have any questions or comments concerning this study please call:

Mike Dunning
New Products Coordinator
986-3059

SUMMARIES OF CURRENT TRANSPORTATION RESEARCH