

RESEARCH NOTES

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

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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 interim findings indicate that recessed markers should not be used at all by ODOT. Reasons for this recommendation include expense and poor performance. Skip lines enhanced by recessed markers cost approximately \$100 per year per mile more than skip lines enhanced by raised markers. This cost is based on a three-year life for recessed markers, 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. Indications are that a maintenance program to remove the debris would not be viable.

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. Skip lines enhanced by raised markers provide excellent lane delineation both visually and audibly. However, because the costs of raised markers are around \$250 more per year per mile than paint, they should only be used when it is cost effective or when needed to improve traffic safety. Also, the reflectivity may drop as much as 70% in the first year.

The following matrix has been developed to facilitate choosing the type of marking material that should be used by ODOT.

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

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We are currently in the process of documenting the results of the study in a report. We will be including a chapter on durable marking materials which may have applications under special circumstances.

We welcome your questions or comments concerning this study. Please call:

Kaaren Hofmann
Research Specialist
986-2851

or

Mike Dunning
New Products Coordinator
986-3059

SUMMARIES OF CURRENT TRANSPORTATION RESEARCH