

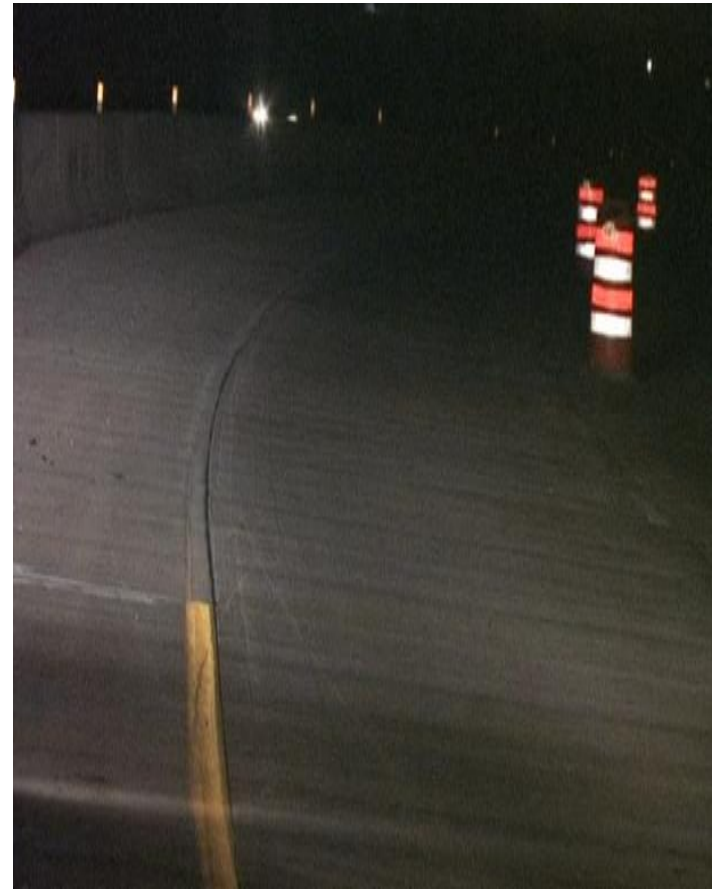


Proposal to Implement Recessed Pavement Markers in North Georgia

Team EZ159



Roadway with and without RPMs



Project Objectives

- Safety Benefits
- Traveling public's concerns regarding missing RPMs
- Other State DOT's best practices and cost comparisons
- Propose implementation plan for North Georgia – Districts 1,6, & 7



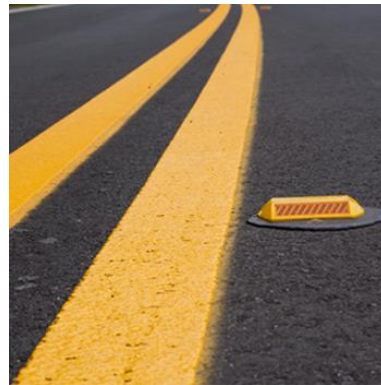
Safety Benefits

- In wet night conditions:
 - Traditional striping provides preview times to drivers of just over 2 seconds
 - RPMs increase preview times to drivers to more than 6.5 seconds
- Pavement markers decrease accident rates by 78%



Traveling Public's Concerns

- In 2018, there have been 5 news stories related to RPMs
- Average 92 RPM inquiries/year submitted to GDOT
- The removed RPMs were concerning because of:
 - Littering - (debris on the routes)
 - Safety - (reduced road visibility and debris damaging vehicles)
- GDOT was asked to examine snowplowable practices from other State DOTs



Other States Best Practices - KY Transportation Cabinet

- Have used recessed RPMs since 2012
- Cost \$35-40 per marker
- Lens last on average 5 years based on 15 snow events per year
- Last longer and are not as vulnerable to snowplowing
- Maintenance cycle anticipated to be 4-6 years
- Lens retention higher than snowplowable RPMs



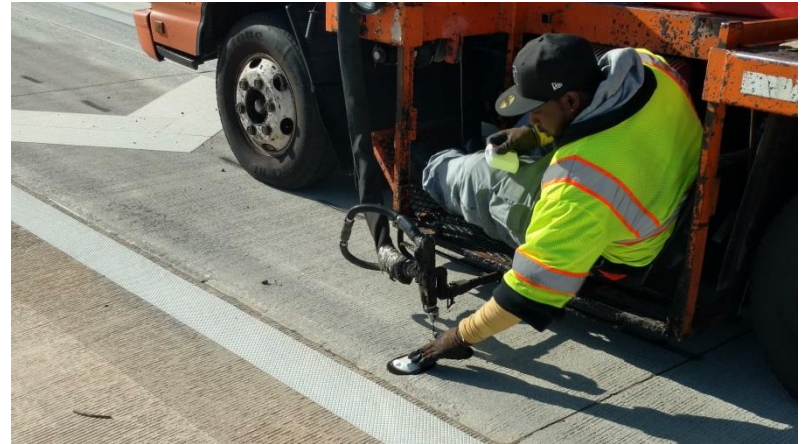
Recessed RPMs

Pros

- Reduced accident rates
- Greater retention after snow & ice events
- Less traffic delays due to greater retention and less maintenance activities
- Fewer public concerns & complaints
- Used by KY, KS, ME, MD, OR, VA, WV & PA

Cons

- Maintenance issues from debris in recessed areas
- Lens replacement every 4-6 years



Cost Analysis

Raised Pavement Markers

Cost per Unit : **\$9**

5 Year Cost per Mile: **\$7650**

Estimation based on 75% unit replacement
each year

Recessed Pavement Markers

Cost per Unit : **\$35**

5 Year Cost per Mile: **\$7945**

Estimation based on unit replacement
every 5 years

Above calculations are based on current contract cost per mile data on a two lane road in District 1.

Proposed Implementation Steps

Pilot Project

- Start with 2 pilot projects in North GA (SR 1 South Rome bypass, and SR 5 Pickens)

Cost of Proposed Pilot Project

- Estimated total cost is \$40,000 assuming \$35 per unit at 40' interval

Proposed Funding

- Research Technical Advisory Group, Resurfacing Contracts, or Quick Response Contracts

Summary

COST

- Higher upfront cost with possible long term savings based on research from the pilot project

SAFETY and SUSTAINABILITY

- Emphasizes GDOT's goals of safety and sustainability
- Better retention after snow and ice events
- Increased visibility and delineating lanes

PUBLIC CONCERNS

- Lower Public complaints by reducing the loss of RPMs

Question and Comments?



Benny Walden
Statewide Location Bureau

Alania Stewart
District 7-Area Management

Trey Daniell, P.E.
Intermodal

Neoma Cole, P.E.
Materials and Testing

Viktor Opara-Amaechi
Equal Employment Opportunity

Steve Price
District 5 - Area Management

Mike Williams
District 3 – Maintenance

Prashant Kasurde
IT Applications

Alma Mujkanovic
Performance-based Management &
Research