Impact of Non-Freeway Rumble Strips

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Introduction

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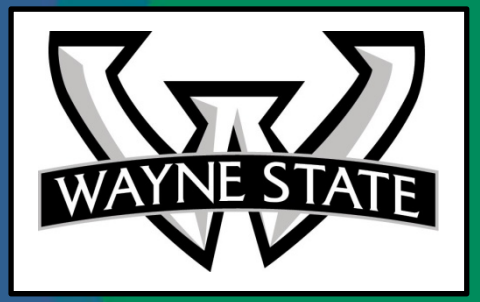

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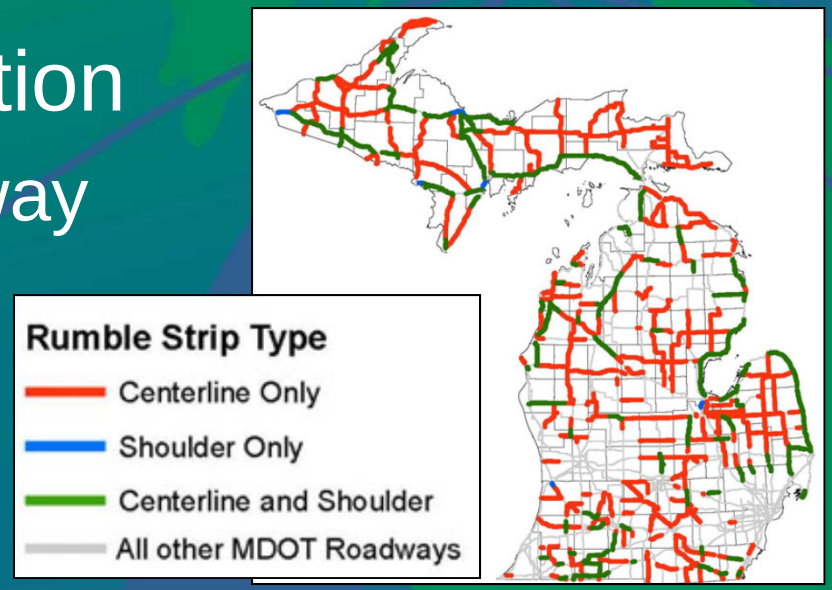
Problem Statement

- Reduce lane-departure crashes
- Rumble Strip Installation
  - 5,400 mi of non-freeway
  - Centerlines
  - Shoulders



- Evaluate rumble strip installations and provide future implementation guidance

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Research Performed

- Video of driver behavior
  - Encroachment
    - Centerline
    - Shoulder
  - Passing maneuvers
    - Bicyclists
    - Vehicles

- Surveyed bicyclists about rumble strips

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Research Performed

- Crash data analysis
- Video logs of pavement centerlines
  - Evaluate pavement cracking
  - Before and after rumble strip installations
- Roadside noise

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Results

- Safety
  - Improved Driver Performance
- Pavement Performance
  - Do not contribute to short-term transverse cracking in asphalt pavements.
- Noise
  - Deeper rumbles produce higher noise levels
  - Noise typically did not exceed the roadside noise level produced by tractor-trailer

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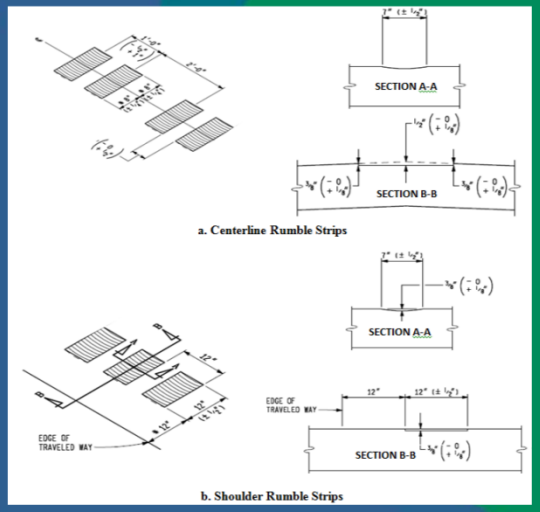
Recommendations

- Depth of 0.5 inch at the center and 0.375 inch at the outer edges reduces noise.
- Installation on 6 foot or wider shoulders increases bicyclist perceived safety

Report Available
@
www.michigan.gov/mdotresearch



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Implementation Status and Strategy

- Installing rumble strips
  - Follow specification
- Communicate results
  - Research Spotlight
  - Three TRB papers
- Phase II project
  - Quantify the benefit
  - Develop guidelines
    - Cities
    - Counties

"We expect Phase 2 of this project to give transportation agencies in Michigan and other states the data they need to implement their own initiatives."

Jill Morena, PE
Project Manager

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Value

- Save lives and reduce crashes annually
  - 300 crashes
  - 60 incapacitating injuries
  - 15 lives
- Improving the quality of life
- Investment
    - Research $262,829
    - Construction 3 yrs @ $2.7M /yr
    - Total $8.3 Million

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