

*Paved Shoulders  
and  
Rumble Strips*



Deanna Maifield  
Methods Engineer

Iowa Department of Transportation

# *The Old Policy*

- Interstates - Paved shoulders
- 4 Lane Expressways
  - 6' and 10' Gravel shoulders
- 2 lane highways
  - 10' Gravel shoulders

# *The Problems*



- Damage to outside edge of pavement
- Safety issues and severe crashes

## *The Solutions*

- Damage to outside edge of pavement

Pavements were designed 2' wider on each side to decrease loads near the pavement edge.

# *The Solutions*

- Safety issues and severe crashes

About one-third of traffic fatalities in U.S. are a result of single vehicle run-off-the-road crashes. In Iowa this number is 37%.

Paved shoulders, especially with rumble strips, have been proven to keep motorists on the highway.



# *Guidelines*

- 4-foot paved shoulders
- All NHS routes
- Non-NHS routes with high traffic
- 2-foot widening on other routes

*But paved shoulders alone provide  
only minimal safety increases...*



# *Milled Rumble Strips*

- #2 on the Midwest Technology Team's Top Ten List of Ready-to-Implement, High Payoff Technologies
- In other states, reductions of 70% in run-off-the-road crashes were reported
- Cost benefit ratios of 30:1 or 60:1 (even 180:1?)
- More cost-effective than other safety features including guardrail, culvert end treatments and slope flattening (according to FHWA)

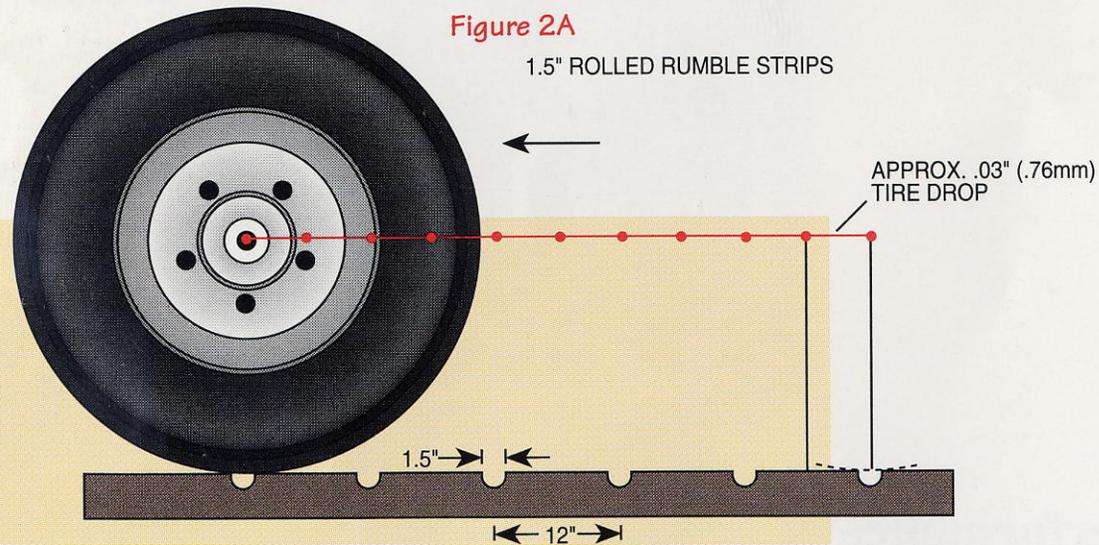


As the drowsy driver begins to drift off the road he passes onto the rumble strips and is alerted with noise and vibration, putting him safely back onto the road.

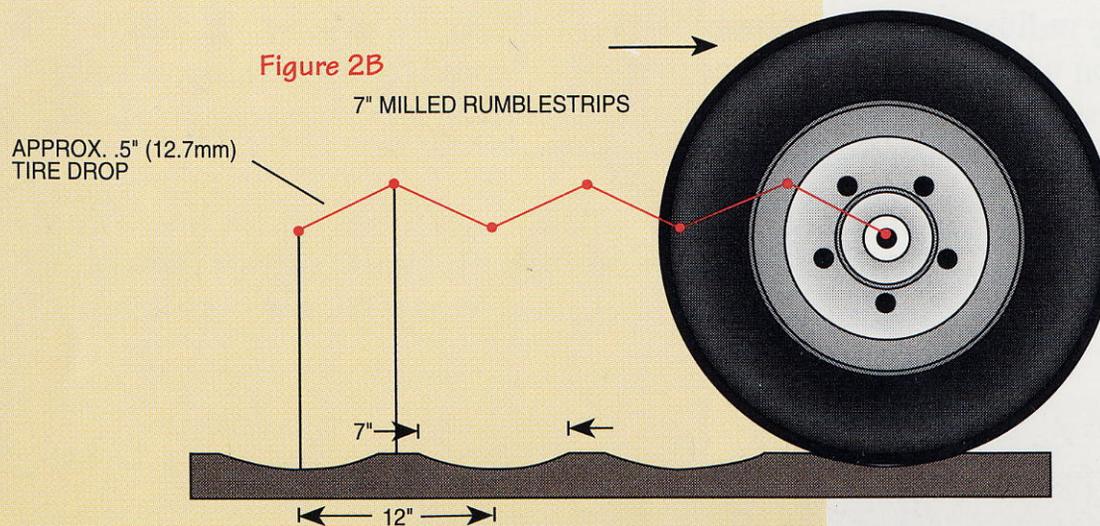








The 7-inch milled rumble strip allows the tire to drop 16 times the depth that rolled-in patterns will allow.









England

CUMMINS

PACCAR

## *Other Benefits*



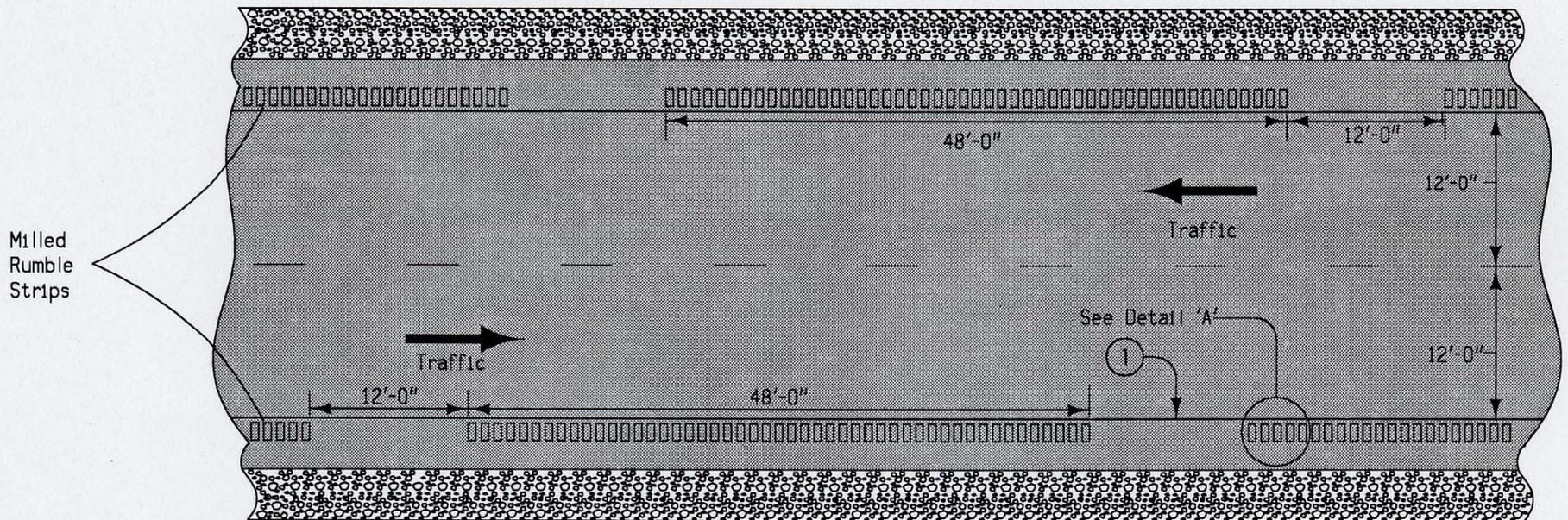
- **Reduced Liability**
  - Largest number of tort claims related to edge rut/dropoff next to pavement.
- **Maintenance**
  - Reduces need for edge rut repair/shoulder grading
- **Bicycle Accommodation**

# *Accommodating Bicycles*





# Two-lane



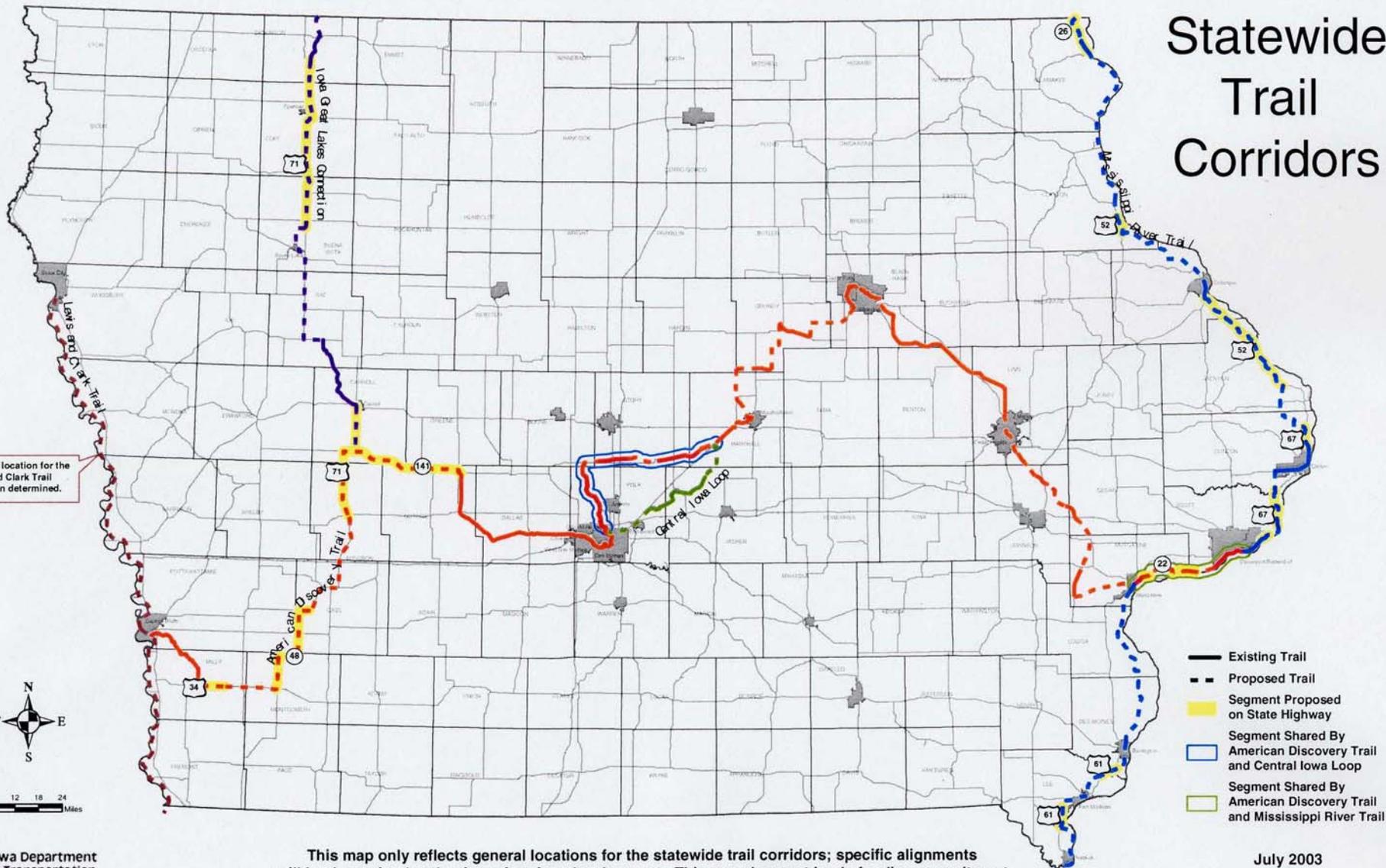


# *Statewide Trail Corridors*

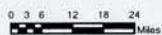


- 6 feet shoulders

# Statewide Trail Corridors



The proposed location for the Lewis and Clark Trail has not been determined.



- Existing Trail
- - - Proposed Trail
- Segment Proposed on State Highway
- Segment Shared By American Discovery Trail and Central Iowa Loop
- Segment Shared By American Discovery Trail and Mississippi River Trail

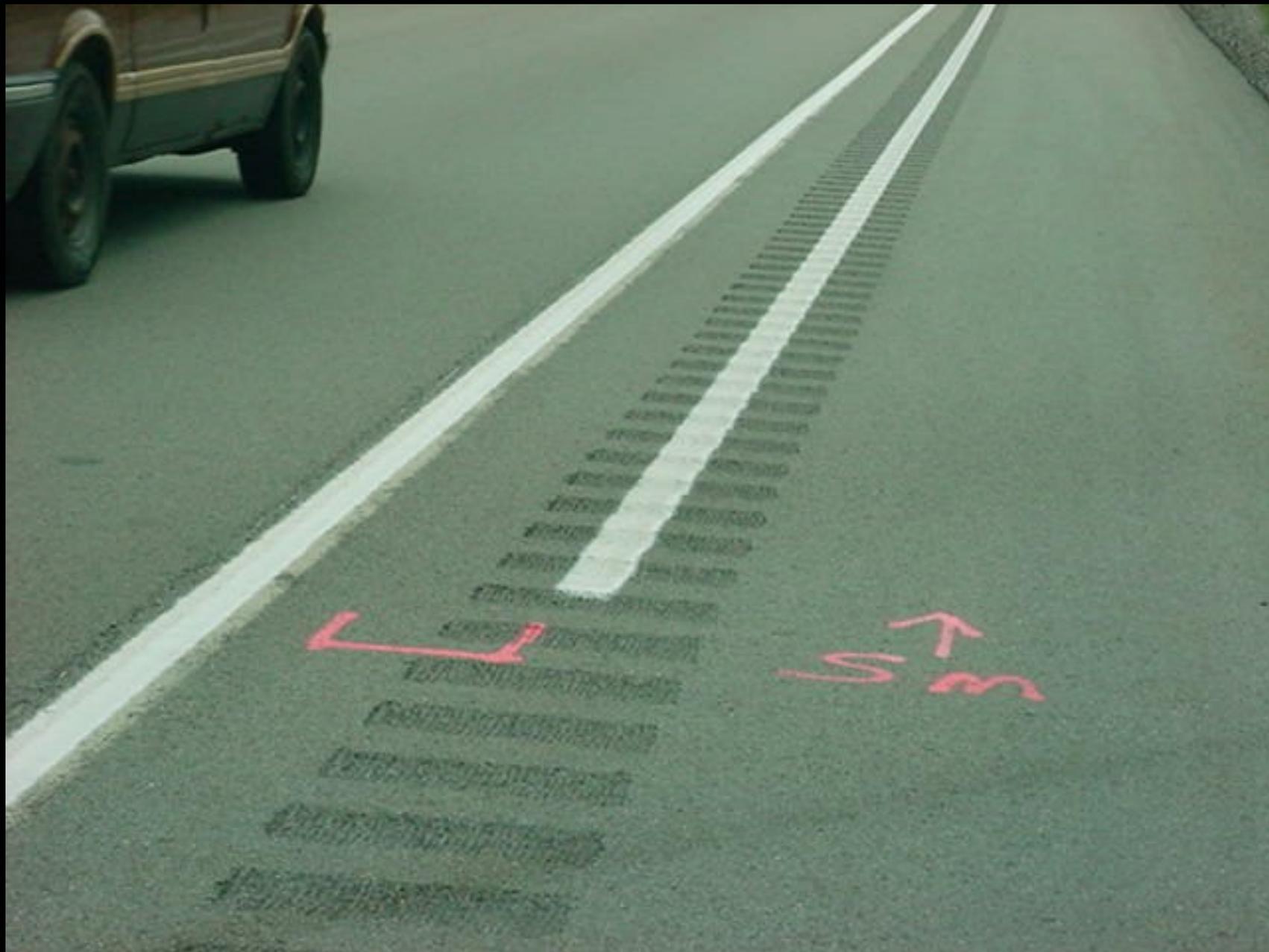
This map only reflects general locations for the statewide trail corridors; specific alignments will be determined at the time of project development. This map does not imply funding commitment.



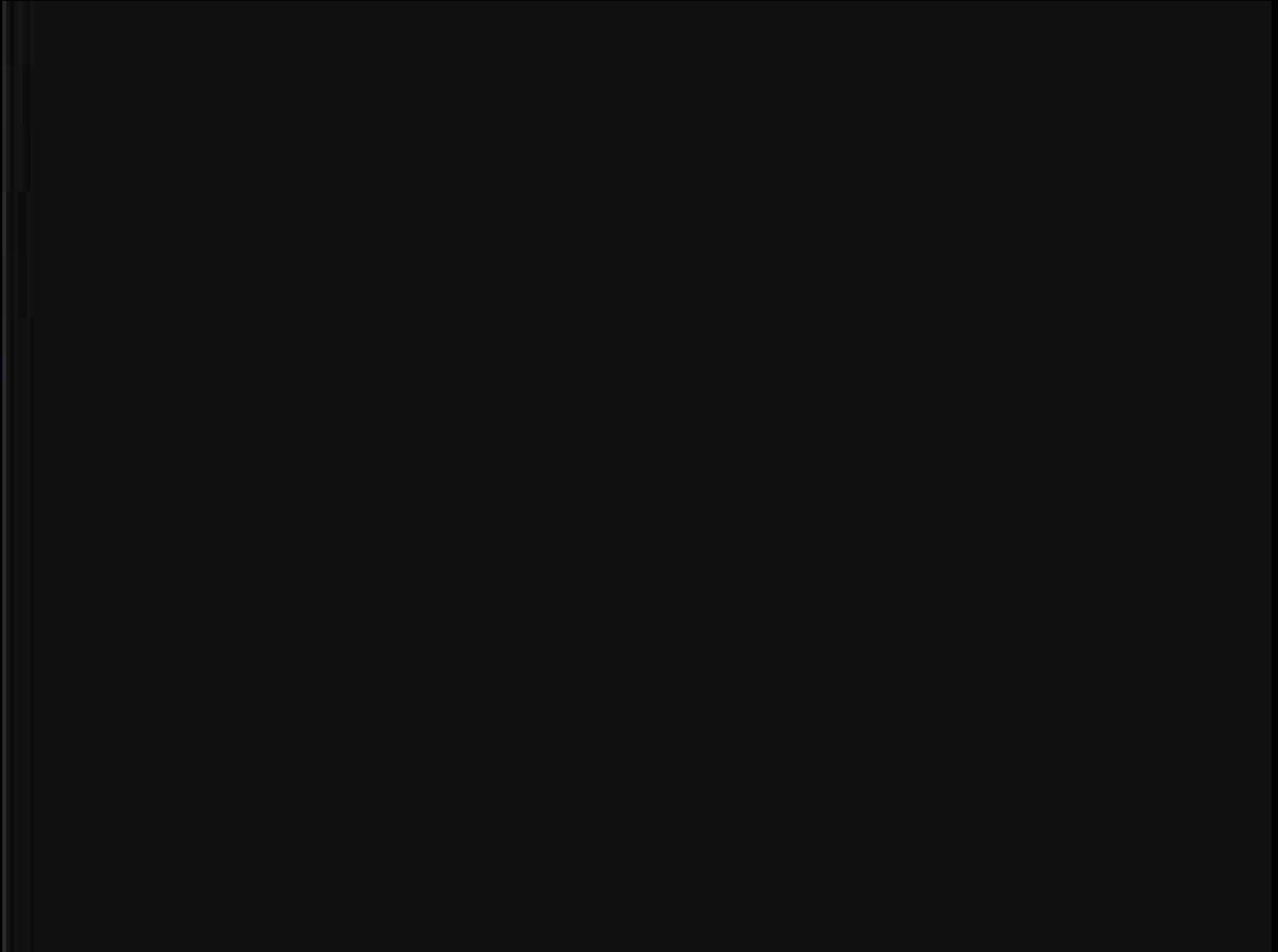
## *What's Next*



- Paint line changes



# *Video*



# *Problems We Still Face*

- How to define placement of the rumble strips to ensure appropriate lane and shoulder widths
- Minimum width of shoulders before installing rumble strips