

Highway Safety Update

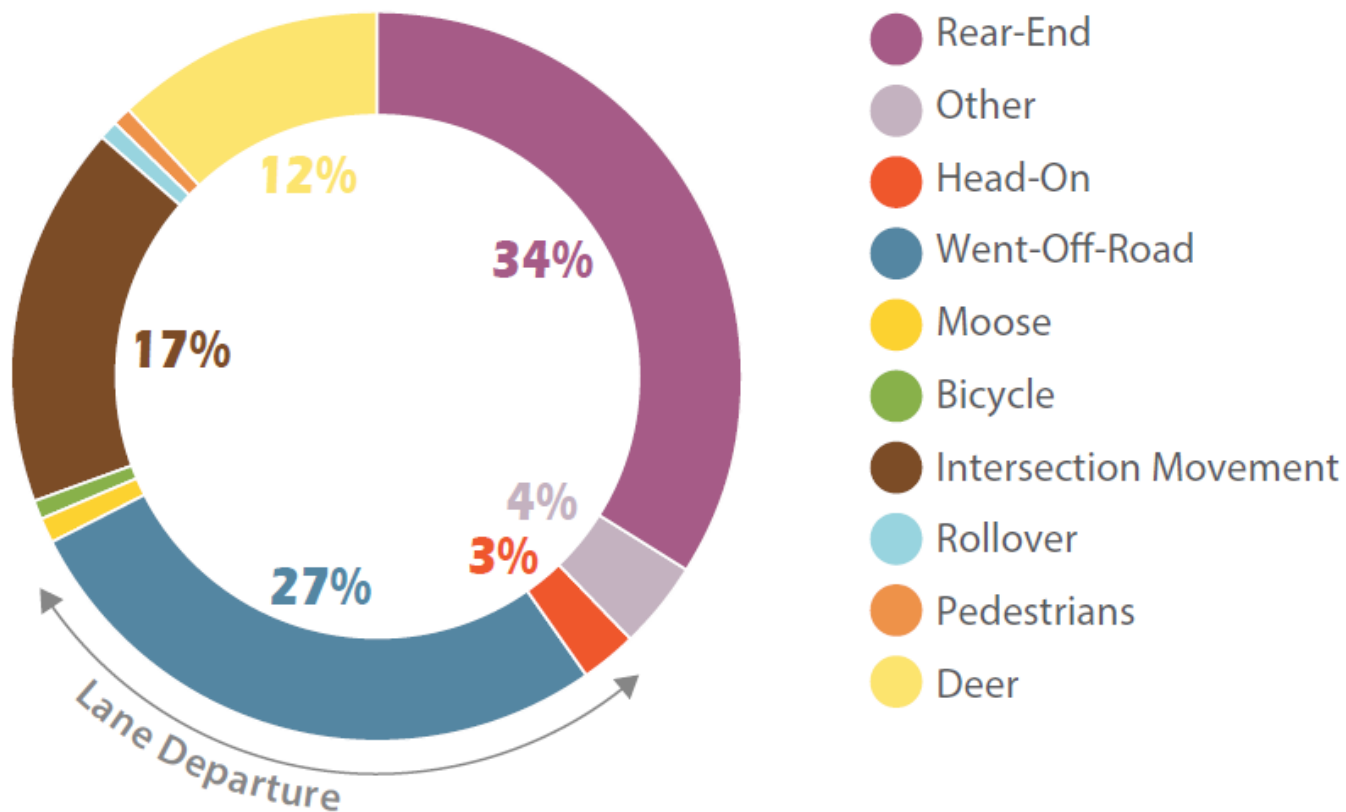
Maine Department Of Transportation

Robert A. Skehan, P.E.

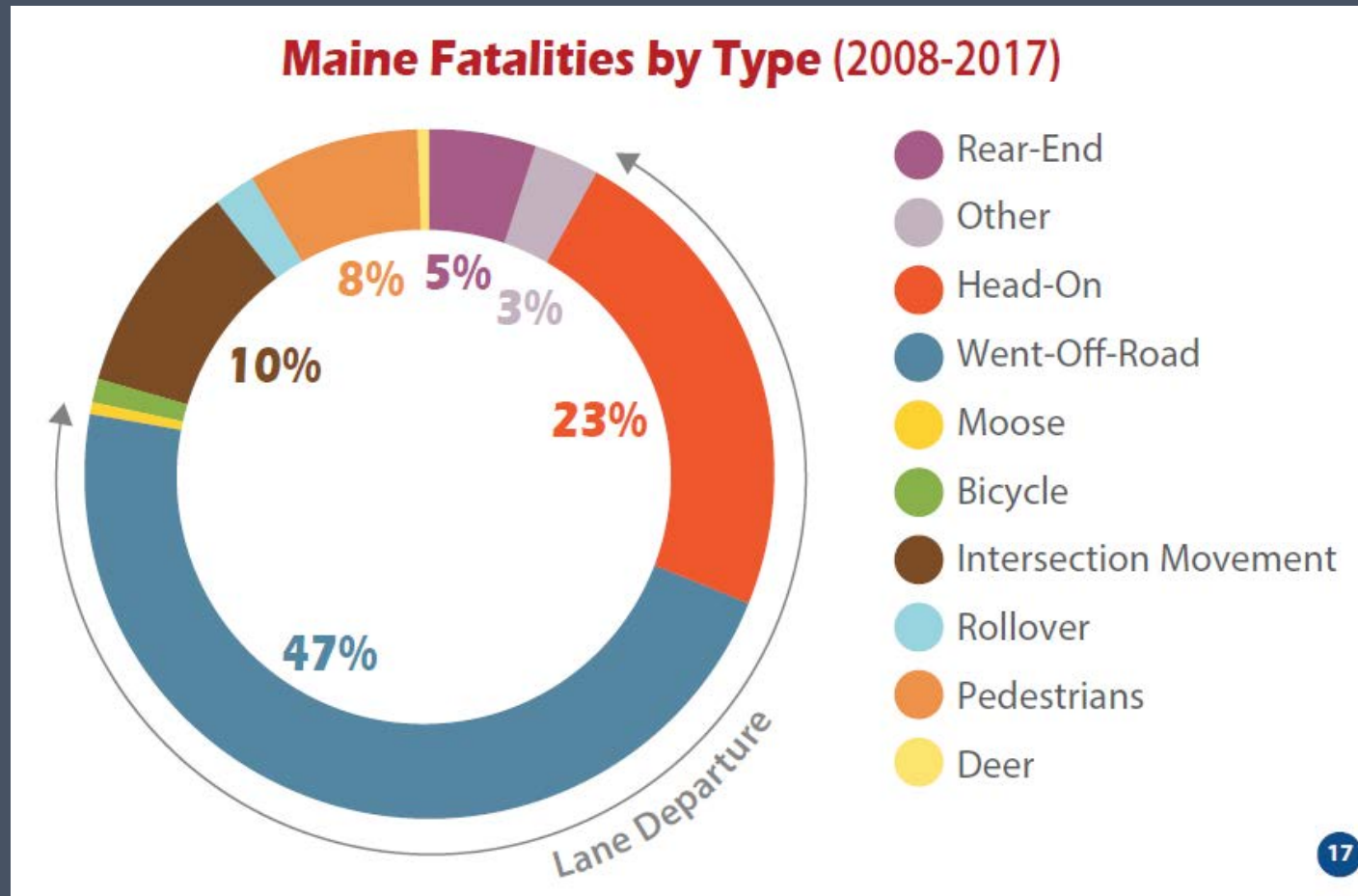
Director, Office of Safety

Lane Departure Crashes

Maine Crashes by Type (2008-2017)



Lane Departure Crashes



Maine's Rumble Strip History

- **Edge Line Rumble Strips** – Interstate System starting around 2006



Making a Difference

- Just a quick note to say thank you. I was caught off guard in a zero visibility snow squall last Wednesday night in Freeport/Yarmouth. I lost sight beyond the front end of my car heading south on I-295 just before crossing the Cousins River. If it wasn't for the rumble strip on my right, I would have probably headed for the river...These safety measures are there every day and I never thought my life would depend on them the way they did that scary night.

Maine's Rumble Strip History

- **Centerline Rumble Strips** —
Piloted in 2006 with wider deployment in 2011
- Selection Criteria — higher priority roadways with at least 5000 AADT and speed limit at least 45 mph
- **Public Complaints about Noise**



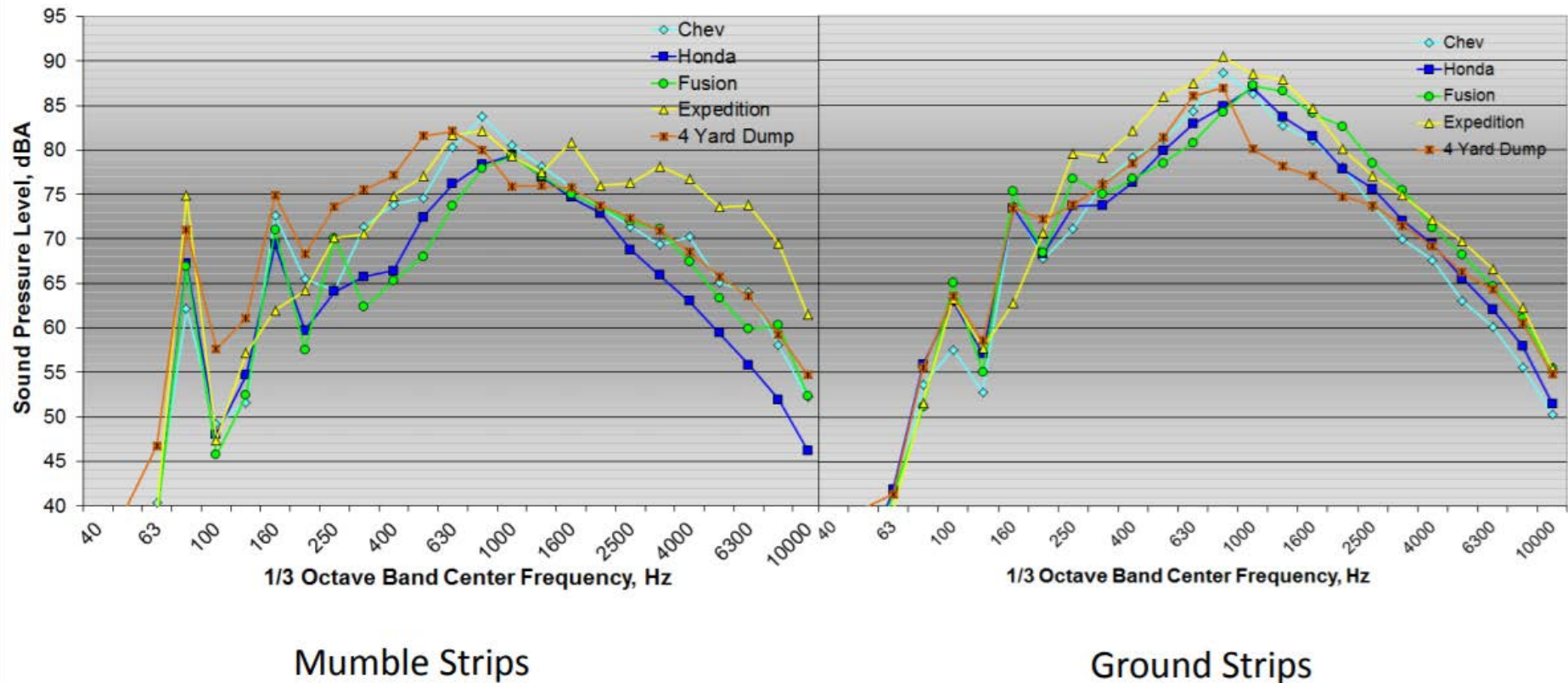
Maine's Rumble Strip History

□ **Sinusoidal Centerline Rumble Strips** – Piloted in 2017, wider deployment (99 miles) in 2018.

- Also known as “Mumble Strips”
- Similar vibration/noise inside the vehicle / lower noise levels outside of the vehicle.



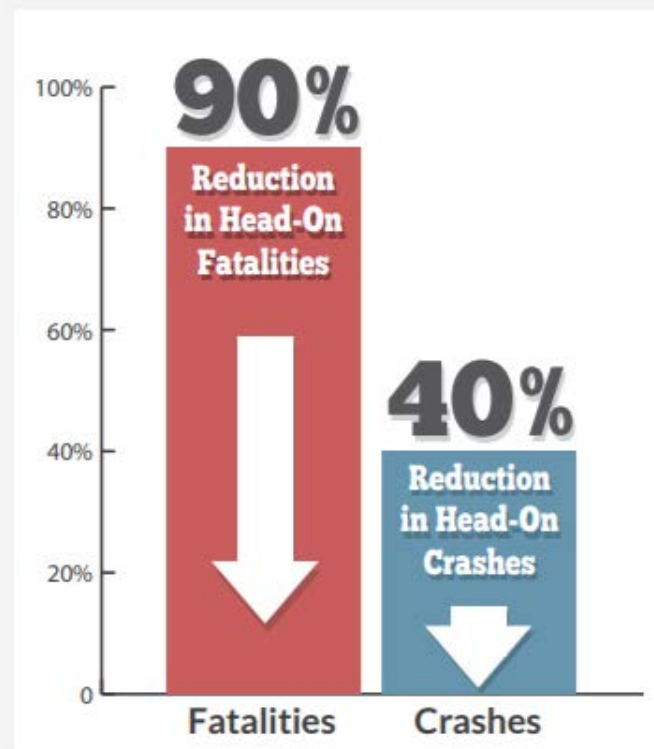
Sinusoidal vs. Traditional RS Noise



Source: <http://onlinepubs.trb.org/onlinepubs/webinars/170328.pdf>

Centerline Rumble Strip Performance

Rumblestrip Safety Performance in Maine

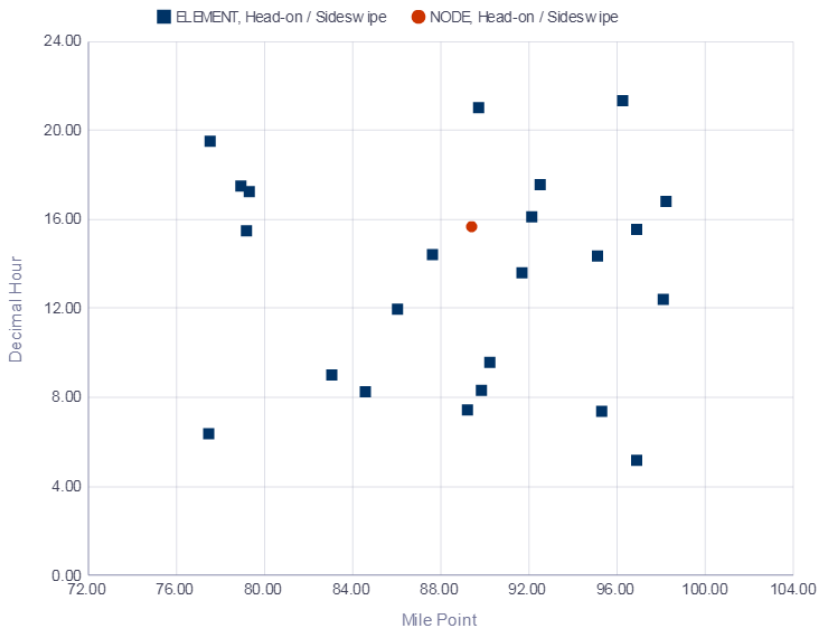


US 202 – Lewiston to Manchester

Head-On Before Centerline Rumble Strips

Period: 3 Years Before 31-DEC-15 ▼

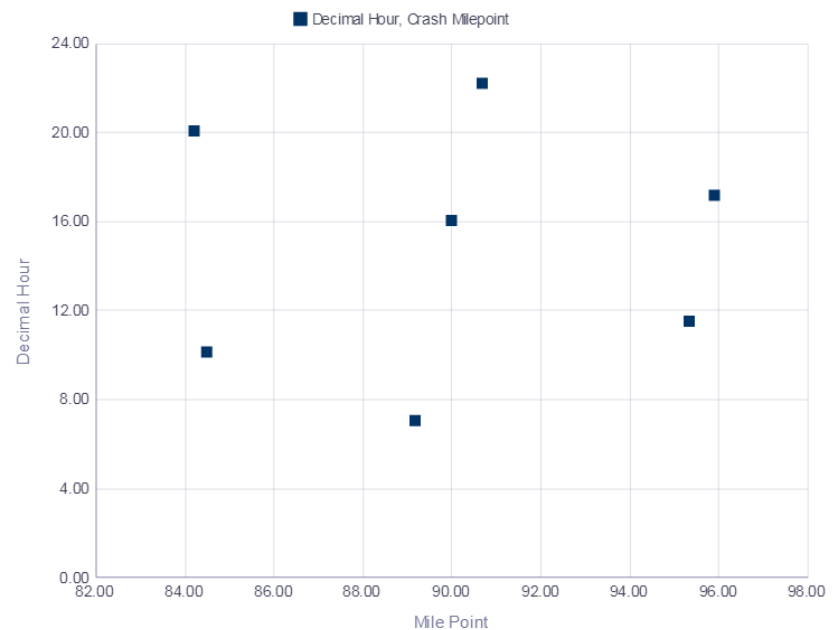
Crashes by Type



Head-On After Centerline Rumble Strips

Period: 3 Years After 31-DEC-15

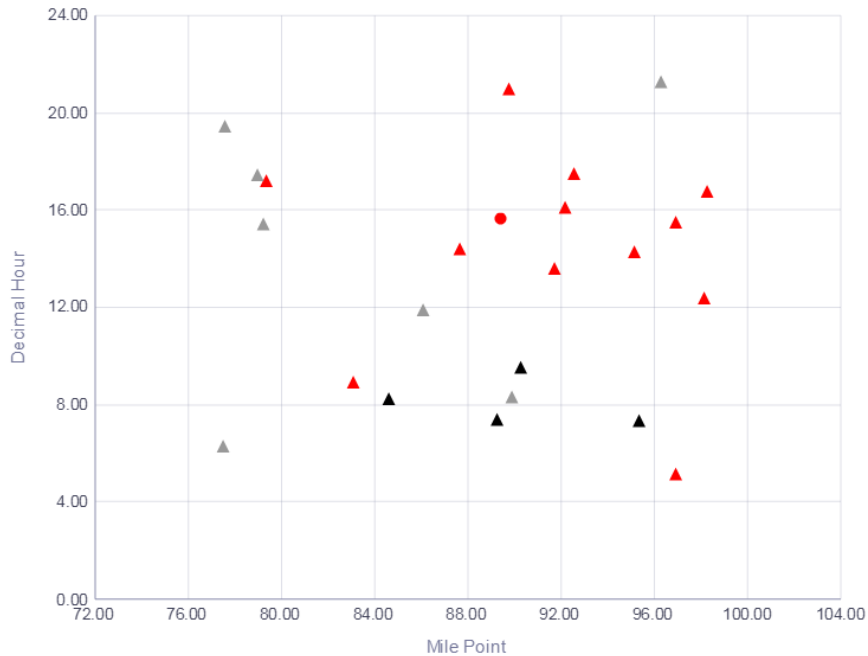
Crashes by Type



US 202 – Lewiston to Manchester

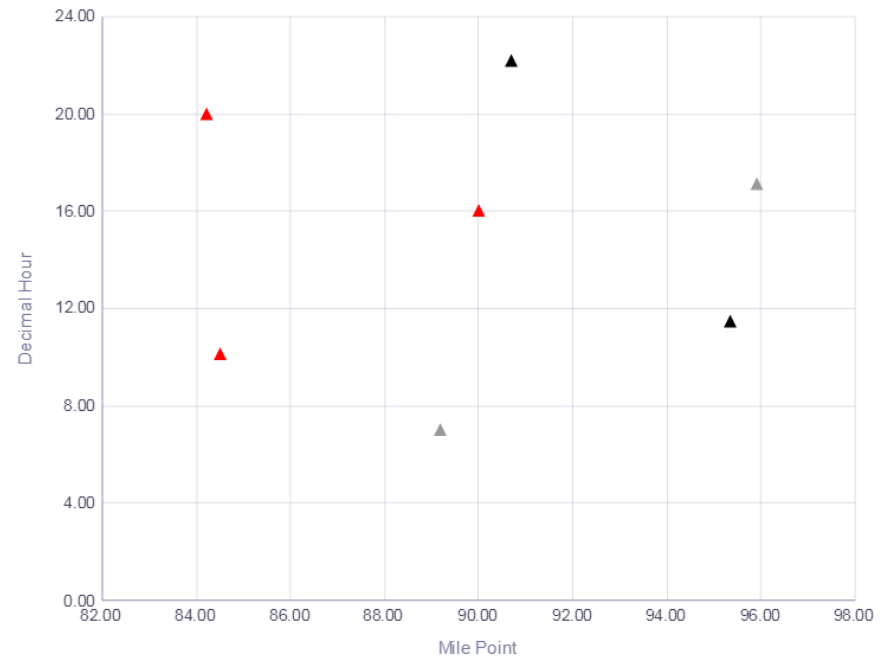
Period: 3 Years Before 31-DEC-15 ▼

Crashes by Injury Severity



Period: 3 Years After 31-DEC-15

Crashes by Injury Severity



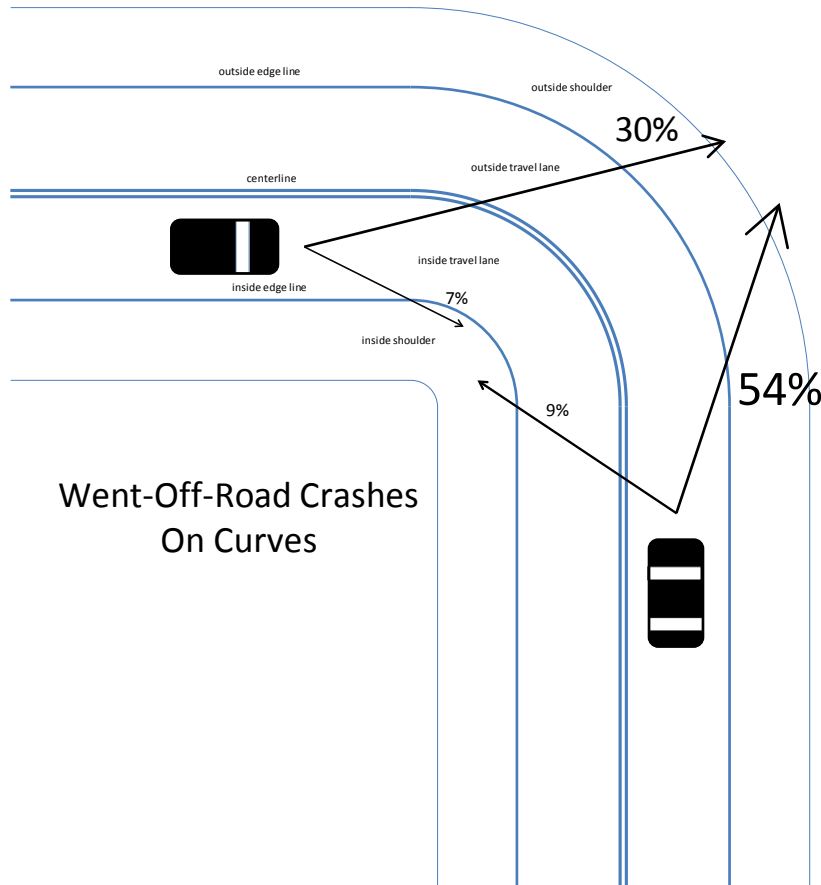
Section Crashes: ▲ = PD Only ▲ = A,B,C Injury ▲ = K Injury
Node Crashes: ● = PD Only ● = A,B,C Injury ● = K Injury

Thank You MMTA!

- MaineDOT appreciates your efforts to encourage drivers to stay off the strips wherever possible.

Centerline Rumble Strips Save Lives

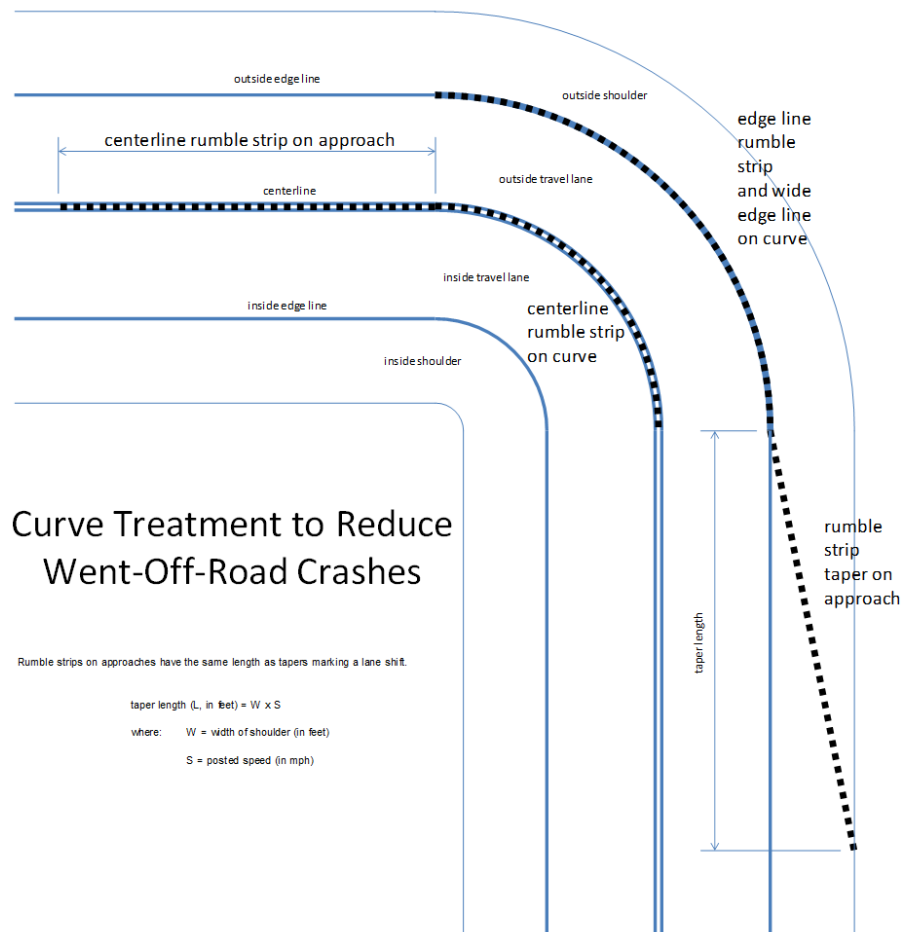
Went-Off-Road Crashes On Curves



Went-Off-Road Crashes
On Curves

Systemic Analysis of Crash Data
On Highway Curves

New - Curve Treatments



Classic Cable Rope Barrier



Cable Rope Barrier Maintenance



Classic Cable Rope Barrier Today



MDOT is replacing remaining cable rope barrier or mitigating hazards to remove

Modern Median Cable Barrier



Interstate Medians
Less than 50' Wide

Median Cable Barriers Work



Another Successful Catch



Please Don't Cut The Cable



Cables are under high tension which can be extremely dangerous if cut.

Turnbuckles located every 1000' to release tension if required to remove vehicles

Median Cable Barrier Repairs



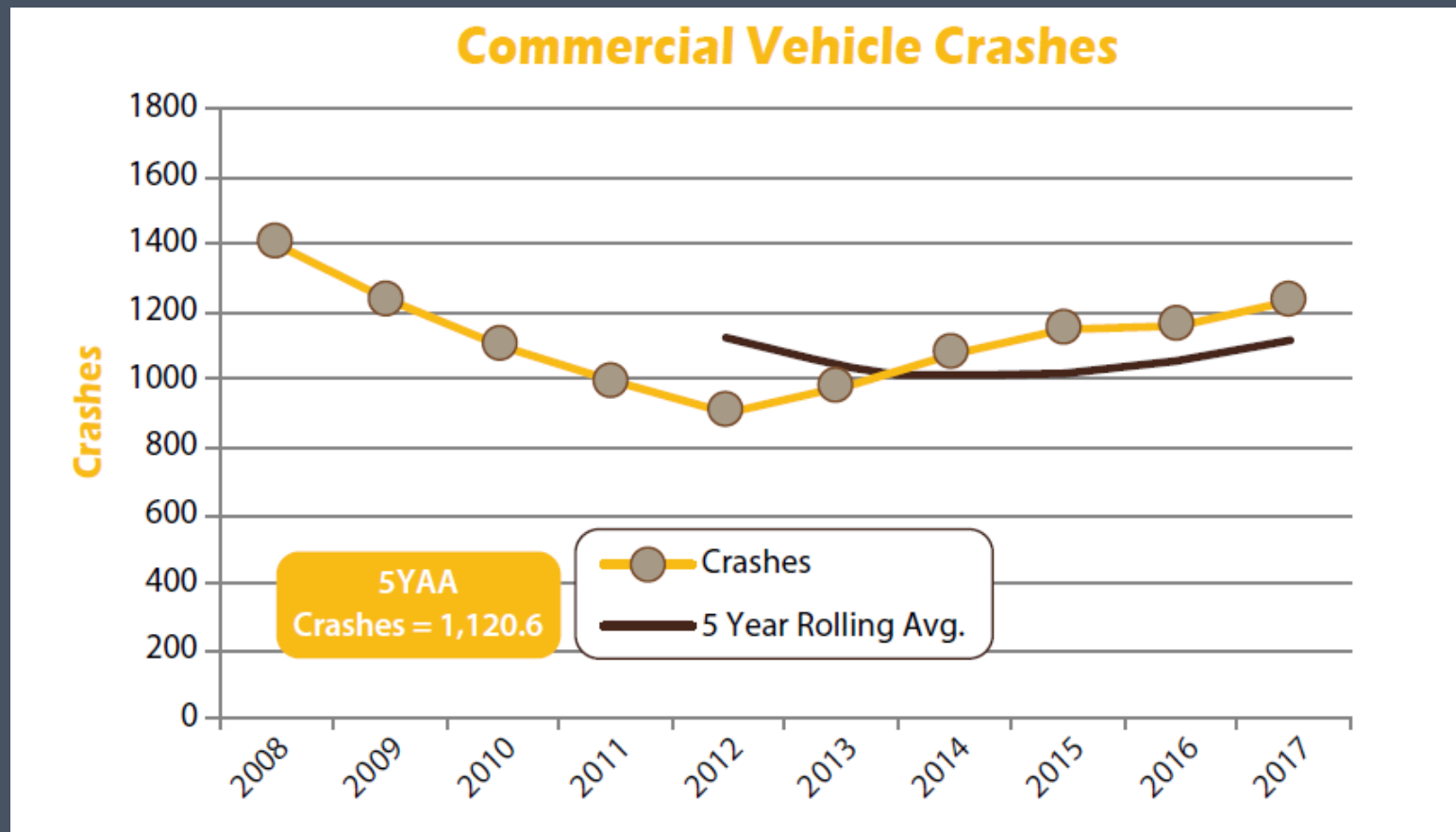
Median Cable Barrier Performance

- Before MCB- 2005-2009 – 4 fatal / 9 non-fatal
- After MCB – **No identified fatal reports**
- 2011-2016 crashes involving MCBs
 - 176 crash-reported median cable hits, no fatalities, 3 crashes with at least 1 serious injury, 30 with lesser injuries reported
 - 9 vehicles have gotten past MCBs – 2 serious injuries, 3 with lesser injuries
- Around 30 hits per year reported and 50-60 non-reportable MaineDOT damage reports per year

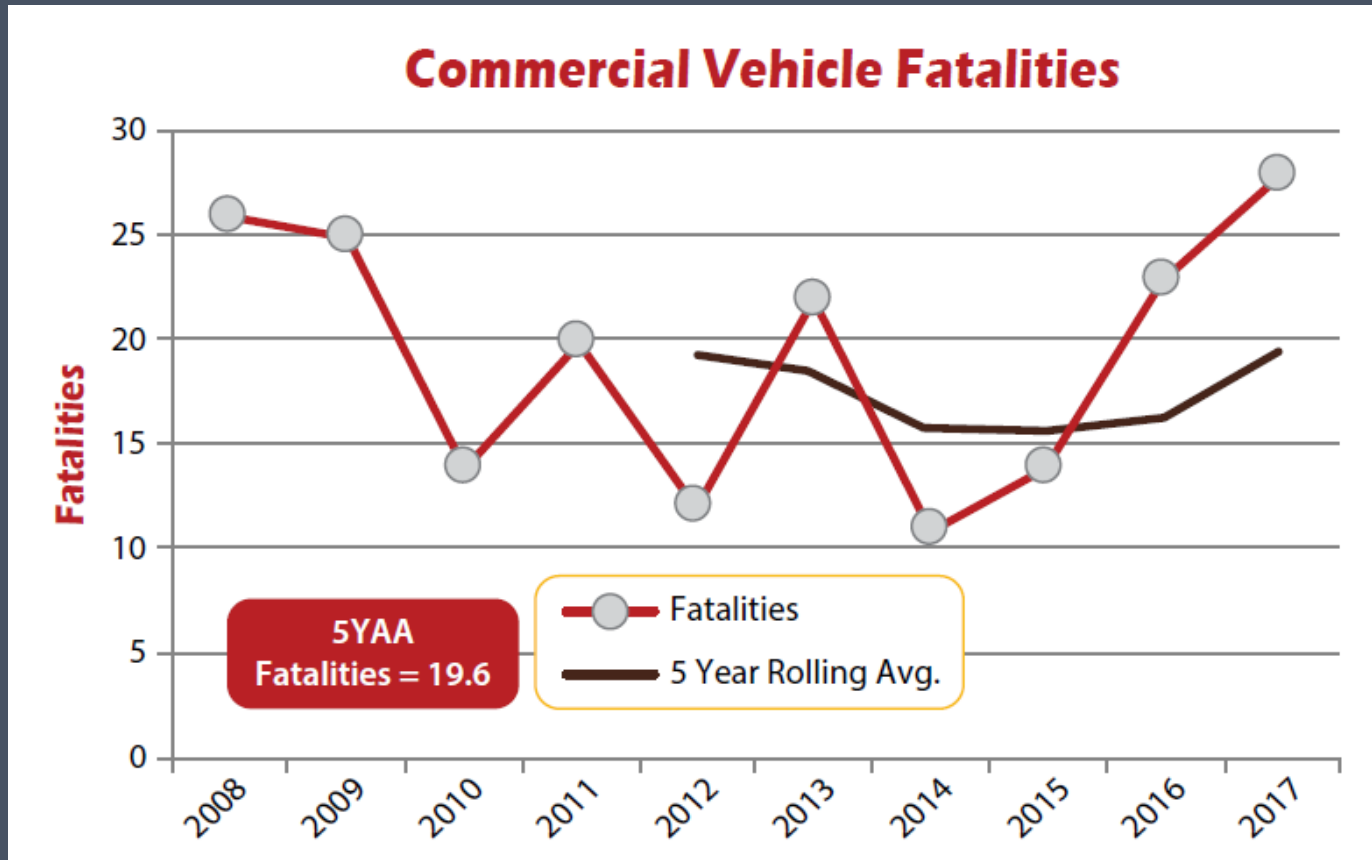
Lane Departure Strategies Moving Forward

- Expand use of centerline rumble strips
- Introduce edge line rumble strips on 2-lane rural arterials with curves sharper than 4° ($<1400'R$)
- Integrate other countermeasures such as improved striping and signing

Commercial Vehicle Crashes



Commercial Vehicle Fatalities



We need your help....

- How can we reverse this trend?
- Public Outreach
 - Social Media?
 - Driver Education?
- Other Ideas?