

Strategies to Address Lane-Departure Crashes in the Berkshires

Making our roads safer is a battle that involves many strategies. Helping to plot a path toward fewer fatalities and injuries, the state Strategic Highway Safety Plan (SHSP) identifies target safety Emphasis Areas for Massachusetts. The top Emphasis Area is *lane departure*, which is when a vehicle either crosses the road centerline or runs off the roadway. According to the SHSP, fatalities from lane departure crashes accounted for 50% of traffic deaths in Massachusetts leading up to the latest Plan publication in 2018. The next SHSP will be published in 2023.

Conditions in the Berkshires

Of the 53 deaths on roads within Berkshire County since the SHSP was published (i.e., from 2018-2021), 19 involved a single vehicle colliding with a fixed object such as a tree or utility pole, or a ditch, which would imply a lane departure. Four double-vehicle crashes involved a "failure to keep in proper lane or running off road" or "wrong side or wrong way." These **23** total crashes account for 43% of fatalities during this period. Additional cases may be added as open investigations are closed. **Thirty-four** non-fatal crashes with incapacitating injuries involved a single vehicle colliding with a fixed object or other obstacles. This number excludes crashes with contributing factors of physical impairment or illness or collisions with pedestrians, cyclists, or animals.

Records from *before* the 2018 release of the SHSP, including 2016-2017, show 22 fatal crashes in Berkshire County. **Seven** crashes either involved a single vehicle hitting a fixed object or two-vehicle collisions with the contributing factor of "wrong side or wrong way." This accounts for 32% of fatalities for this period. All cases listed were closed. **Thirty-five** single-vehicle collisions resulting in incapacitating injuries involved collisions with a fixed object or other obstacles, such as guardrails. This count did not include crashes with pedestrians, cyclists, or animals, and crashes with a contributing factor of physical impairment or illness.

Crashes in Berkshire County with suspected factor involving lane departure ¹					
2016-2017 (2 years)		2018-2021 (4 years)		Total 2016-2021 (6 years)	
Fatalities	Serious Injuries	Fatalities	Serious injuries	Fatalities	Serious Injuries
7	35	23	34	30	69

¹via MassDOT Crash Query and Visualization tool – <https://apps.impact.dot.state.ma.us/cdv/>

Strategic Countermeasures

What countermeasures are being taken in this area? Risky and aggressive driving aside, all humans will occasionally make mistakes. A road or mechanical defect will statistically occur sometime during Massachusetts's millions of annual vehicle miles. Engineers and authorities behind our road system can work to make sure that these situations do not turn deadly and that preventable crashes do not occur.

Some high-impact, low-cost SHSP strategies involve road surface treatments: rumble strips, enhanced reflectivity, and reformulating asphalt to provide a higher friction factor. Rumble strips are small grooves embedded in the pavement that create a sound when driven over, alerting drivers that they are drifting outside a lane. More frequently, rumble strips are applied to the centerline of roads and the shoulders. These alert a driver who may be distracted or fatigued or facing poor visibility that they are crossing the centerline and should correct course. Reflective treatments can enhance safety on curves or low-light

areas by either embedding colored reflectors in the pavement or adding reflective mixtures to new stripe painting. Finally, asphalt formulas with a higher friction factor can help prevent skidding on curves that could lead to lane departures. Additional strategies include continuing to identify high-risk roads through safety audits, educating practitioners on best-practice rural roadway design, and enhancing enforcement of some driver contributing factors like impairment and distraction. New vehicles are increasingly equipped with technology to detect and alert drivers to lane departures, fatigue, and other road hazards.



Centerline rumble strips. Source: WDET Montana

Take Action

The rural heritage and lifestyle of Berkshire County will require a sustained look at the historically riskiest stretches of road in the area for enforcement, engineering, and education. Resources are available for municipalities to help address lane departure crashes through the Municipal Road Safety (MRS) grant from the Commonwealth Office of Grants and Research (OGR). Learn more at mass.gov/service-details/traffic-safety-grants. Participating in this program can provide resources for additional traffic enforcement staff hours and equipment such as radar guns, sobriety checkpoints, or pole-mounted speed feedback signs.

New in 2022 is a Safe Speeds Toolkit for municipalities, provided by MassDOT. It is available at mass.gov/info-details/safe-speeds-roadway-treatment-technical-toolkit. The Shared Streets and Spaces grant program is open to municipalities to address speed management issues. The application deadline is March 1, 2022.

Please contact BRPC Transportation planner Nicholas Russo at nrusso@berkshireplanning.org if you have questions or know of a historically dangerous stretch of road in your community that could benefit from new countermeasures. We are always ready to partner with you.

Finally, a new reference guide from the FHWA is the *Rural Roadway Departure Countermeasure Pocket Guide*. It is a well-organized guide with different approaches towns can take to tackle road-departure crashes on notorious stretches of highway. Find the guide at safety.fhwa.dot.gov/FoRRRwD/RwDPocketGuide.pdf