



HEALTH IMPACT ASSESSMENT • SPEED LIMIT BILL

POSITIVE IMPACTS

2,200 CRASHES



18 FATALITIES

1,200 INJURIES

PREVENTED ANNUALLY IN THE COMMONWEALTH

SAVINGS PER YEAR FOR MEDICAL PAYMENTS AND MISSED WORK:

\$30 MILLION FROM PREVENTED FATALITIES

\$180 MILLION FROM PREVENTED INJURIES

TOTAL ANNUAL SAVINGS **\$210** MILLION

NEGATIVE IMPACTS

\$127 MILLION

PER YEAR COST FOR TIME SPENT IN TRAFFIC

\$21 MILLION

COST OF ADDITIONAL FUEL BURNED ACROSS THE COMMONWEALTH

AIR POLLUTION-RELATED HEALTH COSTS APPROX.



\$500

ESTIMATED YEARLY NUMBER OF DEATHS AND HOSPITALIZATIONS DUE TO WORSENERD AIR QUALITY IS CLOSE TO ZERO

TOTAL ANNUAL COSTS **\$148** MILLION

Executive Summary

The Massachusetts Legislature will be considering a bill that would lower the default speed limit on local roads from 30 miles per hour (mph) to 25 mph. The bill would apply only to “functionally classified local roads,” as designated by the Massachusetts Department of Transportation (MassDOT). It excludes main arteries and the streets that feed them.

Lower speed limits are demonstrably safer for pedestrians, cyclists, and children. Therefore, the Speed Limit Bill could have far-reaching and important public health impacts. The Metropolitan Area Planning Council (MAPC), in partnership with Massachusetts Department of Health (DPH), conducted a Health Impact Assessment that examines potential health impacts of the proposed bill.

Collisions, Fatalities, And Injuries Prevented



Evidence has consistently shown that reducing traffic speeds decreases the frequency and severity of crashes. Statistical models estimate that the Speed Limit Bill would **prevent roughly 2,200 crashes, 18 fatalities, and 1,200 injuries across the Commonwealth each year.**

Savings Due To Fatalities And Injuries Prevented



Preventing fatalities and injuries would save \$210 million per year in costs to society due to medical payments and missed work. Of this total savings, **prevented fatalities would account for \$30 million per year, and prevented injuries \$180 million per year in savings.** These savings would affect those involved in collisions and their families, as well as employers, property owners, and taxpayers across the state.

Time Spent And Fuel Burned In Traffic



While the Speed Limit Bill is expected to reduce crashes and prevent injuries and fatalities, it may increase the number of miles traveled as drivers seek faster, though often longer, routes on higher capacity roads. Slower travel speeds and a reduction of cut-through traffic on local roads would result in 5.8 million additional vehicle hours traveled per year and 55.3 million additional vehicle miles traveled. The resulting increases in **time spent in traffic would cost approximately \$127 million per year, while additional fuel burned in traffic would cost \$21 million per year across the Commonwealth.**

Impact On Residential Property Values



A small body of literature indicates that lower traffic speeds are associated with higher adjacent residential property values. The literature is not strong enough to reliably predict how the Speed Limit Bill would impact the value of homes on local roads.

Air Pollution



Traffic congestion induced by the Speed Limit Bill would increase the amount of time vehicles spend on the road. Because speed affects the ways in which vehicles burn fuel, slower average traffic speeds would also change the composition of vehicle emissions. Due to these factors, air pollution emissions are expected to rise slightly as a result of the bill. While air pollution can increase mortality rates and hospitalizations due to asthma, chronic lung disease, heart attacks, ischemic heart disease, and major cardiovascular disease, air pollution increases would be very small, and therefore the air pollution-related health effects of the bill would be quite modest. **Air pollution-related health costs would be approximately \$500 per year for the state.** The **estimated annual number of deaths and hospitalizations due to worsened air quality is extremely close to zero**, with statistical models estimating 0.000057 new deaths per year and 0.000103 new hospitalizations per year across Massachusetts as a result of air pollution caused by the bill.

Pedestrian and Bicyclist Perceptions of Safety



Roads that feel safe may encourage more walking and biking. Lowering speeds is a step towards making pedestrians and cyclists feel safer on roads and sidewalks, which in turn would create more opportunities for physical activity through walking and biking. It was not possible to calculate a quantitative estimate of the bill's potential perceived safety impacts.

Parental Safety Perceptions And Children's Levels Of Physical Activity



Research suggests that reducing speeds on local roads would increase parents' willingness to allow children to walk and ride bicycles, leading to increases in physical activity levels among children. It was not possible to calculate a quantitative estimate of the bill's potential perceived parental safety or children's physical activity impacts.

Conclusions

The Speed Limit Bill proposes to lower speed limits statewide as a strategy to reduce crashes and make the roads safer for all users. Based on a literature review, case studies, and statistical models, this HIA predicts that the bill would have a positive public health impact, particularly by preventing traffic fatalities and injuries. Potential co-benefits include enhanced walking and biking environments that may encourage physical activity, as well as increased desirability of properties on local roads due to quieter and safer streets. The HIA also concludes that the bill is economical. Although slower speeds and additional congestion may cost the Commonwealth money in time wasted, fuel burned, and air pollution emitted, these costs are overwhelmed by financial savings generated by preventing injuries and road fatalities.

Because road design features and enforcement also help determine traffic speeds, municipalities should implement traffic calming interventions and educational and enforcement campaigns to maximize the safety benefits of the bill. Improving bicycle and pedestrian facilities in concert with a speed limit reduction would likely be more effective in fostering walking and biking than would a speed limit reduction alone.

Authors: Peter James, Kate Ito, Mariana Arcaya

Contributors: Barry Fradkin, Ben Wood, Scott Peterson, Bruce Kaplan, Jonathan Buonocore, Jean Bernard, Jennifer Molina, Chris Kuschel

Acknowledgements: We thank Lea Susan Ojamaa, Kim Gilhuly, Jeff Parenti, Wendy Landman, Charlie Ticotsky, Tim Reardon, Rob Goodspeed, Jessica Robertson, Eric Bourassa, Joel Barrera, Massachusetts Department of Public Health Division of Prevention and Wellness, and Human Impact Partners for their essential reviews and expert guidance. Graphic Design by Jason Fairchild of The Truesdale Group.

MAPC Executive Director: Marc Draisen