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The Eighty-Five Percent Solution: Is Crowdsourcing Speed Limits the Best Approach to Traffic Safety?



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Issue

Setting appropriate speeds on roadways requires balancing the economic and social benefits of higher vehicle speeds on one hand, against the greater safety, environmental, and human activity costs of fast-moving traffic on the other. While drivers and commercial shippers typically favor faster limits, those living, walking, biking, or playing in proximity to roads often want slower limits. The most common method for setting speed limits, however, leaves it to drivers to collectively decide how fast is too fast. According to the U.S. Federal Highway Administration (FHWA), most places in North America set speed limits using the “85th-percentile rule.” This long-established standard calls for observing the speeds of free-flowing traffic on a roadway without posted speed limits, and then setting the limit at a 5 mph increment above or below the speed at which 85% of vehicles travel. So, for example, if 85% of drivers on a particular road are observed to travel at 43 mph or less, the speed limit would be set at 45 mph.

Key Research Findings

Background

The 85th-percentile rule was born in the 1930s and ‘40s on the logic that “most drivers operate at safe speeds most of the time,” and assumes that about 15% of drivers drive faster than they should. This early form of “crowdsourcing” was also rooted in the idea that wide speed variations

along a given roadway, more than absolute speeds, were the primary cause of traffic collisions — though this long-received wisdom is being called increasingly into question. To its proponents, the 85th-percentile rule both encouraged slower drivers who might impede traffic flow to speed up and it allowed law enforcement to concentrate on those driving significantly over the “safe” speed limit.

Researchers in the UCLA Institute of Transportation Studies examined the historical origins of the 85th-percentile rule and found that its early architects considered it a reasonable starting point for setting speed limits, subject to follow-up safety evaluations and possible adjustments. Over time, however, this starting point evolved into a hard-and-fast rule for setting speed limits. As a result, if substantially more than 15% of urban drivers are found to regularly exceed the posted limit, the rule — originally intended for open rural roads — suggests that the limit be increased, safety considerations notwithstanding. So, to return to the example above, if a subsequent traffic survey found that 85% of drivers were traveling at or below 48 mph, the speed limit would be increased to 50 mph.

The 85th-percentile rule developed at a time when the main goals of urban road planning were to increase both traffic flows and safety by regulating what a leading urban transportation planner and engineer at the time called the “promiscuous” mixing of traffic. Traffic regulations from this era sought to separate trucks and automobiles from

bicyclists, move pedestrians onto sidewalks, and shift social and economic activities off of streets and into buildings. Today, however, urban and transportation advocates increasingly challenge the primary focus on traffic flow, arguing instead for moving many non-vehicular activities back onto streets to make them more “complete,” less dominated by fast driving, and, ideally, safer. This new viewpoint — that urban and suburban streets are complex economic and social spaces in which the movement of people and goods is but one of many important purposes — calls into question the continuing wisdom of having motor vehicle drivers collectively determine appropriate travel speeds, particularly if public policy aims to reduce their share of urban street users over time. At the core of this debate is the question of whether drivers should get to decide how fast is safe, particularly since modern automobiles with crumple zones, airbags, antilock brakes, automated braking and collision avoidance systems better protect vehicle occupants moving at higher speeds relative to the pedestrians, cyclists, and other non-motor-vehicle street users with whom they interact.

Policy Implications

Since 2017, the National Traffic Safety Board has called for “alternate methods” to set speed limits, especially those that consider vulnerable road users. Local engineers and planners increasingly aim to create safer, more complete streets that host a variety of social and economic activities in rights-of-way and on adjacent sidewalks. As a result, today’s objectives for urban speed regulation include:

- Creating safe, attractive environments for walking.
- Encouraging bicycling, scooters, and other “green” forms of micromobility.
- Prioritizing public transit vehicle movements over private vehicle movements.
- Accommodating the rise of goods movement, including the increasing numbers of deliveries and pick-ups.



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- Accommodating personal and commercial shared-ride pick-ups and drop-offs.
- Encouraging street activities such as vending, shopping, and eating.

With walking, public transit, ride-hailing, cycling, and emerging forms of micromobility increasingly competing with cars and trucks for urban street space in many places along with sidewalk cafes, parklets, and urban greenery, it may be time to reconsider whether the rigid “85% solution” is compatible with California’s commitment to Vision Zero and its goal of eliminating all traffic deaths.

For More Information

This policy brief is drawn from the project report entitled *The Eighty-Five Percent Solution: A Historical Look at Crowdsourcing Speed Limits and the Question of Safety*, authored by Brian D. Taylor and Yu Hong Hwang at UCLA. For more information, please contact Professor Taylor at btaylor@ucla.edu. This project was funded by the California State Transportation Research Program. Website link: <https://www.ucits.org/research-project/2020-01/>