

Americans Need Universal Road User Education to Get to Zero Deaths

by Jonathan French

A few weeks ago in my hometown of Augusta, Maine, [two women and a one-year old girl were struck and killed by a driver who fell asleep at the wheel](#) while they were walking along the roadside. The city's response [has been to plan to install a sidewalk extension along the well-traveled pedestrian route](#), which will offer needed accommodation, but not protection for pedestrians, as the curb alone is not a barrier for vehicles.

Accommodation also does not automatically equal safety.

With June being [National Safety Month](#), one thing that we should realize as road users is that sidewalks alone do not make us safe while walking. They give us a place to walk, but we are not "safe" unless the other users around us, including motor vehicles and cyclists, realize how vulnerable we truly are, and only if we know how vulnerable we truly are.

This vulnerability may seem like common sense, but we don't actually get public education of how vehicle speed and mass injures or kills vulnerable users on a sliding scale, nor do we get educated why it is so important to actually wait for the "WALK" signal or to push a button to turn on flashing beacons at a crosswalk before we cross a road or street. In spite of the risk, I think we've all crossed a street when the "DO NOT WALK" indication was active, and we survived taking that risk. However, the "DO NOT WALK" interval exists to keep us safe because of our vulnerability to moving traffic otherwise. What isn't designed into the system though, is when that "WALK" signal is displayed, we need to look in both directions and try to make eye contact with approaching drivers before we actually cross because of the potential of red-light running, [which happens more often than you think](#). Once again, just because there is a signalized crosswalk, it does not ensure safety, unless all users are aware of the vulnerability of those crossing and act accordingly.

It's true that we do get some of the "rules of the road" in driver education courses which teach some of that vulnerability, but let's take a look at that first word "driver." That means that anybody who isn't planning on driving a motor vehicle and doesn't need a license is not getting that same education. It's possible most may know what basic signs mean because many are self-explanatory with symbols and words, but do they understand driver perception-reaction time and vehicle braking distance? This is some of what is taught in driver education, yet a non-motorized user needs to know these facts to truly understand their vulnerability and how to stay safe.

Driver education itself is also not universal. [Only 32 states actually require formal driver education to obtain a driver's license](#), and of those that do have required driver education, not all offer it via their public education system, requiring a prospective driver to pay a certain fee to have private instruction. So not only are some users not getting the proper education on how to use the system as a driver, but their financial status is a barrier to receiving the proper training.

Rules for road users are also subject to change with legislation and could differ from state to state, but unless users seek out these changes and differences, or happen to hear or see them, they aren't going to have that knowledge.

The lack of this universal education and knowledge contributed to over 42,000 road user deaths in 2020, which included more than 6700 pedestrians.

This has to change, and we won't achieve the goal of zero road user deaths unless we get serious as a country about not just driver education, but *road user* education.

For example, the American Jobs Plan is full of safety initiatives as I pointed out in [a presentation with Build the Era this past week](#), but one key transformative component that is missing is a universal road user education program.

As engineers, we can design and build lots of "safe" infrastructure according to all of the standards and guidance that exist with the money in the American Jobs Plan. Still, it will only be as effective as the users' knowledge and subsequent use of the system.

One of the most frustrating things for an engineer is to believe you have designed the perfect solution to increase safety, only to see users using it incorrectly, or not even at all. The perfect example of this is the Rectangular Rapid Flashing Beacon (RRFB).

Engineers know the RRFB can have over a 90% yielding rate for drivers when first installed. It can also reduce pedestrian crash rates by 47%, so it is extremely frustrating to watch a pedestrian cross the street without activating the RRFB at all. Thousands of dollars have been spent on this safety measure, only for somebody to ignore it and then to potentially be seriously injured or killed. However, that frustration should also lead to a question — why? The answer likely is that the user didn't know the facts about the RRFB like the engineer who placed it there by design, and didn't realize the increase in their vulnerability without using it because they never got the proper user education in the first place.

Roundabouts are another source of personal frustration. They are the safest intersection that exists in the world, yet in the United States, we still only see them as an alternative to signalized intersections. Most Americans still automatically equate signals with safety, when again as engineers we know that is false, especially compared to a roundabout. Why?

Again, there is a lack of education that contributes to the lack of universal acceptance of roundabouts. Only six states out of those 32 that require driver education mention roundabouts specifically in their curriculum. Most of us know about traffic signals before we even learn how to read, yet some users may never get any education about a roundabout, other than what they see in viral videos, because there are only approximately 7000 of them in the United States compared to over 300,000 traffic signals. There are also very few toys, books, or songs, and nothing being taught universally at elementary schools about roundabouts for any user, so there is no previous knowledge to build on like traffic signals. That leaves driver

education as the only universal way to educate younger users about roundabouts. When that isn't being taught universally either, then you have a serious void in knowledge for many users.

Just for fun, Google "traffic light book" or "traffic light toy" and then "roundabout book" or "roundabout toy" and I think you'll see my point.

In spite of its benefits in road user safety, climate, resiliency and placemaking, the roundabout simply can't gain universal acceptance if we aren't teaching users about it. We need to educate all users, not just drivers, because there have also been very few cyclist deaths and no known deaths of pedestrians in a marked crosswalk at a roundabout. The traffic signal can't compete with those safety statistics and decreased user vulnerability. Yet, it is still seen as the preferred method of intersection control because of the lack of user education of roundabouts.

For safety measures such as RRFBs and roundabouts, local and state agencies can provide some user education, but it is limited in scope and depends largely on users choosing to seek out the information. That strategy has clearly not worked, and those agencies alone can't bear the responsibility of user education, so it's time to do something different.

The Netherlands, which had more than four times fewer road user deaths per 100,000 people than the United States in 2019 according to the World Health Organization, [has mandatory road user education as part of the elementary school curriculum](#). Their belief in continuous road user education (and roundabouts) has created an enviable safety record that is an example for all countries, especially the United States, to follow.

Therefore, in order to educate all prospective road users regardless of financial status, or vehicle use, I believe it is necessary for a universal road user education program in the United States to be taught in all public school systems as part of their core curriculum. Giving all users a chance to understand each other's vulnerability, especially for pedestrians and cyclists, will change safety perceptions and lead to an overall safer road system all across the country. It will also introduce users to roundabouts and RRFBs and other safety measures, and the importance of their use at an earlier age. There should also be public courses for adult users who wish to increase their knowledge of the system.

These ideas may sound like a heavy and costly lift, but road user deaths in the US had an economic cost of over \$70 billion just last year. We could educate all younger users and those adult users who wished to learn more for just a fraction of that and save many lives in return.

The vision of zero deaths in the United States is clear, but to get to that vision, universal road user education must be part of the solution if we truly want to get the maximum return on our investments in infrastructure and provide maximum safety for all users.