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Traffic Safety Culture Newsletter
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4. Traffic Safety Culture: Interviews with two California policymakers, Caltrans Safety Engineer Jesse Bhullar

Jesse Bhullar, the State Highway Safety Engineer, has been working at Caltrans for about 20 years in various aspects of traffic safety: investigator, database manager, researcher, and, currently, manager of the Caltrans Strategic Highway Safety program. He is one of four co-leaders (along with OTS's Chris Murphy) of the group overseeing development of the state's Strategic Highway Safety Plan. He is the Caltrans representative in the group.

What role can the establishment and promotion of a traffic safety culture play in advancing traffic safety goals?

There is a very big role that it can play, but first we have to help people realize there can be such a thing as a traffic safety culture. You can see it in places like France, Australia, Sweden.

What are the obstacles?

The biggest obstacle is the lack of people's awareness. If I ask my neighbors, friends, family, who are not involved in traffic safety, how many people die on our roadways, their answers are not even close. If people are made aware, they do band together to do something about it, but it's not easy to promote that awareness. We as traffic engineers, educators, enforcers have collectively not been able to make our case to the public.

That is the big piece of traffic safety. There are things that we know work, that we know save lives, but because of the lack of awareness of the size of the safety problem, there isn't support or funding, so we can't do them—proactive safety, for example.

What are some examples of proactive safety measures?

Take rumble strips. We know they work. As soon as you start to veer off the road, because you're dozing or you're distracted, you feel the vibration. That tells you that you're leaving the road, but you're only four or five inches off the road so you can steer yourself safely back. If there is no rumble strip, you could be four or five feet off the road before you realize what has happened, and then you over-correct, and that's where the head-on and running-off-the-road collisions happen.

We have placed a lot of rumble strips through safety projects, but we do not have adequate funding to proactively place them at locations that do not yet have collision concentrations. They are not that expensive to do, but there aren't enough resources.

Another proactive measure that works is putting strips in place of painted yellow lines in the middle of a road. On a two-lane road, with painted lines, people will drift across, and suddenly traffic is approaching them from the other direction and they get caught. The rumble strips in the centerline buffer zone warn them before that happens.

Another example is more of a maintenance issue: reviewing the visibility of road signs at night. We used to conduct regular reviews, going out after dark. It is really helpful, especially in the winter time, to see where signs need extra lighting or striping needs refreshing in order to be visible under dark and wet conditions. We don't have the resources to do these night time reviews very often any more. The same with pavement markings. The markings were put there for a reason in the first place. We used to regularly refresh them, but overall maintenance funding is down, and the pressure is to fix potholes first.

What do you think of the usefulness or feasibility of the zero-death/everyone counts approach?

I support it. For any effort or movement, if you are to lead others, you have to have a vision. One part of a vision is that it may never be realized. In that sense, toward zero deaths is a good vision. It's not a mission or a goal, just a vision. For the public, it's easy to understand.

Nationally, the goal was set to have 1.0 fatal collisions per 100 million miles of vehicle travel. We were to achieve it by 2008. Well, we didn't achieve that goal, and now the date has been changed to 2011. In terms of the public, if I tell my friends and family that my work is to achieve 1.0 deaths per 100 million miles traveled, their eyes get glassy and they ask, "What did you just say?"

A rate like that is a great measure for engineers, but the media and the public don't understand it. I have noticed a trend recently for states to change goals from rate based to number based, "eliminate 400 deaths," or "cut deaths by 20 percent," or do it by a certain time. The vision is still zero deaths.

What do you think of the idea of educating the public to change the way people think about crashes, to emphasize that, ultimately, all crashes are avoidable that no collision is truly an "accident?" Would that help make roads safer?

At Caltrans, we have moved away from calling them "accidents." They are avoidable; they are not acts of god. So, yes, it is a helpful way to think about traffic safety. But you can't ignore the fact that people are going to make mistakes; they could be distracted, one of our biggest problems, they could be speeding, many other things that people do while driving their cars. We as engineers need to be there to provide them with a safety net to catch them, which is why we design and build forgiving highways for example guardrails, crash cushions, attenuators, breakaway poles, posts, median barriers, etc. If you leave the roadway and hit the guardrail, it will start to peel off, absorbing the energy so that you will get to a dead stop in a way that may let you walk away.

There are a lot more technological options than the public knows about or that are being widely used. There are devices in cars to measure your speed relative to the other cars and intelligent brake lights that know you are going to brake and turn on your brake lights before you hit the brakes so the car behind you has more time to react. There are intersections that can tell if cars are going to collide and change the light or take other measures to prevent a crash.

We need to remove the barriers that keep us from applying as much of the technology as is readily available. There is an element of risk taking in applying new products, and tort liability concerns that engineers must evaluate before they try a new technology.

We need to encourage transportation professionals to share this information and educate the users to implement these things. It is not happening to the extent that it should. We need to collaborate more with engineers and enforcement, education, and emergency services professionals both at the state and local level. Automated Speed Enforcement (ASE) technology is available but the legal and institutional impacts have to be evaluated before it can be deployed.

Not everyone may be aware of the technologies that are available and effective. We need to do a better job at promoting new technology. For example, if we have pedestrian crosswalks where the pedestrian can push a button and lights in the pavement go on in the northern part of California. Do professionals in southern California know about it? In Southern California we have crossings at the Pacific Coast Highway where we could use them. But the engineers in Southern California may not know about them.

In the traffic safety culture literature, there is a lot of discussion of the role that data can play, both in improving effectiveness of safety programs and making the public more aware of the problem. Do you think data has a big role? Data is a big piece of this. Fatal crashes on state highway system roads are the most visible in the public eye, but they only account for about half the deaths from traffic crashes in California. Local roads that are not a part of the official state highway system deserve attention, too. For example, high-speed rural roads. And we can't discount injury collisions; they can be extremely serious. We need to get the public and policy makers to think about all roads, not just freeways and major highways, and to think about all types of crashes.

While fatal collisions are by their nature the most serious, they don't always provide the data that engineers need to make the most effective safety improvements to the roadways. Often, a fatal collision has more to do with how that driver behaved under those circumstances than it has to do with the roadway. Also, there are many fewer fatal collisions. Since the number of injury and property-damage-only collisions is higher, they provide a better data sample to evaluate roadway improvements. On the State Highway System alone annually there are approximately fewer than 2,000 fatal collisions, 60,000 injury collisions, and 120,000 property damage collisions. The data are much stronger for injury collisions. If there is a collision concentration at a two-tenth-of-a-mile segment, those people are not randomly deciding to have collisions there; there is a possibility that a roadway improvement can help. We investigate all collision concentration locations for identifying possible improvements. It may be that it doesn't have enough friction; maybe we can change the radii of the curve.

What can be done to improve data about local road collisions?

This is one of the areas we are addressing in the Strategic Highway Safety Plan. Some of the recommendations that our group has developed include:

- Improve the accuracy of existing data, especially collisions regarding property damage only and non fatal injuries.
- Improve the timeliness of reporting collision data.
- Evaluate the usefulness of data currently being collected and revise as needed.
- Increase collection of roadway and traffic data on local and rural roadways in order to evaluate safety performance.
- Establish national standards that can be applied in all jurisdictions for traffic safety data collection, system analysis, and management (except with the reporting of fatal incidents).
- Improve data collection for non-motorized travel data, specifically for use, exposure, crashes and the lack of facilities.
- Collect data for both roadways and multi-use trails.
- Improve current data collection methods and strategies by involving and coordinating related efforts, interests and data bases of other agencies and organizations. This should also be done for all new data system projects.
- Evaluate and improve existing collision data software to provide efficient data management.

Public opinion polls play a large role in successful efforts to change traffic safety culture. By showing the disconnect between public attitudes and the actual problem, it can help raise awareness of the size of the problem. Do you think they can help?

I think they would help because they would raise public awareness. I don't know how effective a poll would be if we did it now, because right now, the public fails to understand the extent of the traffic safety problem, but at least it would be a start.

One other aspect that is important is the public-private partnership. The state, cities, and counties own the roads, but they miss out on how much of a stake the private sector—not just insurance companies—has in transportation. We haven't explored that. Google is already getting information on speeds, congestion, to get more people to use their apps and go to their Web sites. Maybe Google could map not just congestion, but it could be mapping safety. The two-lane road would show up as red for danger where a freeway would be green. We engineers know the crash rates are higher on some types of roads compared to urban freeways. Under some conditions, freeway collisions can be less severe, because there is less of a speed differential, and the traffic is going in the same direction. On a two-lane road, it is often head-on or run-off-the-road, which tend to be more severe. But we haven't raised awareness of this with legislators, with the public. We haven't woken them up in terms of how big this problem is.

How does California rank in all this?

I as an engineer tend to pick up on things that still need to be done, so I focus on what is missing. A big problem California is going to have is among the vulnerable road users, bicyclists and pedestrians. We don't have enough data about them but we are going to need solutions quickly. Our state's older population, the Baby Boomers, as it ages is going to add to the numbers of bicyclists and pedestrians. These are very active people, and they are going to be vulnerable as they find new ways to get around. We are already seeing that among the first wave of the aging of the Baby Boomers with the rise in motorcycle fatalities, but there will be even more problems among pedestrians and bicyclists, where we really need more data.