

# Hitting



# the Gas

## Efforts to prevent vehicle-into-building crashes gain traction across the U.S.

By Mark Wright

Imagine: The future has arrived. Driverless vehicles flow seamlessly and safely through streets and parking lots, guided flawlessly around corners and into resting places nestled safely next to the doors and windows of shopping-center retailers and convenience stores, child care centers, and campus buildings, thanks to interconnected systems of sensors that reliably exert inch-by-inch control over the vehicles' movements and speed. Flowers bloom. Birds chirp. All is right in the parking world.

There's just one problem: We're not there yet.

Big-brand car companies have been showing TV commercials depicting new sedans that can apply their brakes before a human driver's brain can scream "stop!" to his pedal foot. That's progress. Will such technology keep drivers from piloting their vehicles over the edge of a multistory parking garage or through the plate glass window of their local convenience store? Maybe someday.

Until then, we've got a built environment cobbled together through many decades to satisfy multiple generations and disparate stakeholders who had competing needs and visions. And we're using legacy mobility systems that have typically focused on keeping vehicles moving rather than on intelligently managing how vehicles, pedestrians, and buildings can safely coexist in close proximity to one another. For the most part, we're left to heed the advice

from the TV classic "Hill Street Blues:" Be careful out there.

Of course, being careful isn't enough. Parking spaces continue to serve as launching pads for vehicles driven by fallible humans. The stupidly stubborn problem of vehicle-into-building crashes demonstrates on a near-daily basis that we still get distracted by phones or just zone out. We still confuse our gas pedal for our brake. We still absentmindedly throw our transmission into "D" instead of "R" or vice versa. And we still injure and kill people as a result.

### California's Groundbreaking Legislation

California Assembly member Bill Quirk (D-20) found all this out in 2015. His chief of staff at the time had two sons in a day care center where a car crashed in through the front wall, barely missing the children.

"When [he] shared the story about his children's day care center being hit by a car



California Assembly member Bill Quirk

and [his kids] almost being injured, the issue suddenly hit close to home,” Quirk says. “We then did extensive research, and I found that the issue was far more widespread and serious than I had realized and was truly a matter of great concern.”

Quirk soon introduced legislation, AB764, to address the problem. Both the State Assembly and Senate passed the bill unanimously, and then Gov. Jerry Brown vetoed it. Quirk made some changes to the bill and introduced it as AB2161 the following year. Again, both houses of the Legislature passed it unanimously. This time, Gov. Brown signed it.

“I encountered little to no opposition from my colleagues,” Quirk explains. “Until we did our research, most legislators did not realize how widespread and serious the issue was. The governor’s office, however, had technical concerns with my 2015 bill. He did not agree with my language or the code section I chose to amend. In 2016, I took a different approach with the language and the code section to be amended.”

In a nutshell, AB2161 allowed insurers to consider the use of certain vehicle barriers at commercial properties as safety devices that qualify for a discount on the owner’s insurance premiums, as approved by the insurance commissioner. The measure also encouraged the California Building Standards Commission to adopt a statewide standard for such safety devices.

For his novel approach and legislative tenacity, the California Public Parking Association (CPPA) recognized Quirk as “Legislator of the Year” in 2016. “I was surprised and pleased by CPPA’s recognition,” Quirk says.

What made Quirk’s legislation especially noteworthy was its use of an incentive—lower insurance premiums—

to attract the support of property owners. While it’s too soon to know if the approach will work, the new law creates a carrot to get property owners’ attention. When asked what he would tell a room full of insurance industry executives if given the chance, Quirk focuses on the need to educate them.

“Data tells us that more than 4,000 pedestrians, store patrons, and employees are seriously injured every year nationwide in accidents involving storefront crashes,” Quirk says. “Further, as many as 500 people are killed due to this type of accident [in the U.S.] A little change in how we approach preventive measures can save lives. Most of these crashes can be prevented with some simple and inexpensive steps.

“I recall reading about these accidents or seeing stories on the news,” Quirk says. “However, I did not realize how frequent or deadly storefront crashes are.”

Quirk offers some advice to those hoping to advocate for this kind of or related parking-safety legislation: “Believe in the issue. Be passionate about the issue. Get the data to show how important this issue is. This [legislation] is important because it has the potential to save lives. In the end, that is what is most important.”

### Local Action Ramping Up

Quirk’s legislation is the only example so far in the U.S. of successful statewide action. In Massachusetts, Rep. Carolyn Dykema has twice introduced legislation, in 2013 and 2015, to mandate the installation of barriers between certain parking spaces and retail establishments, but neither bill survived to a full vote.

More local jurisdictions, however, have begun to address the problem:

- Miami-Dade County, Fla., passed Ordinance 120887 in 2012 requiring that head-in parking located directly adjacent to a storefront be equipped with concrete security planters with a minimum depth of 40 inches and that buildings located there have ground-floor windowsills placed at a height of 24 to 48 inches above grade.
- Artesia, Calif., passed Ordinance 15-817 in 2015 to require, among other things, that “vehicle impact protection devices” be installed adjacent to parking spaces that are angled between 30 to 90 degrees relative to an adjacent outdoor pedestrian seating area. The ordinance effort was led by Artesia City Council member Victor Manolo after his mother-in-law was killed and his daughter severely injured when a vehicle crashed into them in front of Farrell’s Ice Cream Parlour in nearby Buena Park.
- Orange County, Fla., passed Ordinance 2016-09 in 2016 requiring child care facilities to have safety barriers in exposed areas. The measure came as a response to the 2014 death of Lily Quintus and serious injury of several other children when a vehicle crashed into a

child care center. Orange County also established the Lily Quintus Child care Center Vehicle Impact Grant, providing up to \$10,000 to assist childcare centers with installing safety barriers in front of their buildings.

- Malibu, Calif., passed Ordinance No. 403 in 2016 requiring “vehicle impact protection devices” in existing and future parking lots for head-in spaces within 75 feet of outdoor seating areas. Then-Mayor Pro Tem (now Mayor) Lou La Monte introduced the measure after learning of the Buena Park Farrell’s Ice Cream Parlour tragedy.
- Midfield, Ala., passed Ordinance 2017-01 this year requiring businesses to place barriers in front of their buildings if parking is within 10 feet of the entrance to the facilities. Current businesses are grandfathered in and will only have to install barriers if they make changes to their buildings or parking lots. The city council passed the law after an SUV crashed into a dentist’s office, killing six-year-old Camlyn Lee.

### Barriers Must Meet Standards

As more jurisdictions require protection in or near parking areas, ensuring the use of barriers that actually work is increasingly important. Safety expert Rob Reiter, who co-founded the Storefront Safety Council with the author of this article, notes that he has seen photos of crashes where bollards and other types of barriers failed when impacted by a moving vehicle because they were of inferior quality or were installed improperly.

Dan Markus, president of Calpipe Industries, Inc. (Calpipe Security Bollards), blames sub-standard products for some of those failures. “Unfortunately, cheap unrated imports from China and from small job shops continue to find their way onto projects. People have been killed as a result of these products,” Markus says.

“It’s one of the reasons we encouraged ASTM International to promulgate a standard jurisdictions and property owners could follow,” Reiter says.

After extensive effort by Subcommittee F12.10 on Systems, Products, and Services, which is part of ASTM Committee F12 on Security Systems and Equipment, ASTM International published a new standard in 2014: ASTM F3016, *Test Method for Surrogate Testing of Vehicle Impact Protective Devices at Low Speeds*. It quantifies the dynamic performance of vehicle protective devices (such as bollards) at speeds of 50 kilometers per hour (30 miles per hour) and slower. This new standard complements ASTM F2656, *Test Method for Vehicle Crash Testing of Perimeter Barriers*, which focuses on testing for high-speed impact.

“This standard has already been adopted in the Florida, California, and Alabama ordinances and will be proposed for California’s building code in the coming cycle as well,” Reiter says.

### An Expensive Problem

Ironically, protecting buildings and people is a lot less expensive than failing to do so. Property owners and businesses—along with their insurers—are getting hit with expensive settlements following vehicle-into-building crashes that resulted in injuries and fatalities, Reiter says.

“I’m aware of over \$100 million dollars in claims paid in 2015 and 2016 because of vehicle-into-building crashes,” Reiter says. “This trend is increasing as more cases go to trial and plaintiffs find it easier to show that a location was poorly protected against a foreseeable and preventable risk. Several auto insurers have also followed this strategy against property and business owners to reduce their payouts in a half-dozen cases.”

Reiter cited some recent notable examples, including \$32 million for a wrongful death against a convenience store chain in Massachusetts, \$24 million for a wrongful death against a hotel in Florida, and \$6.6 million against a big-box retailer for loss of a leg in a Maryland incident.

“Research indicates that pedal misapplications happen more often in parking lots than out on the road,” says Warren Vander Helm, managing partner at Long Beach, Calif.-based Parking Design Group LLP. “There are three reasons for that: Parking requires multiple pedal movements. Parking lots pose greater divided-attention requirements. And there is less room for recovery in a parking area in the event of a pedal application error.”

### Spreading the Word

Education and awareness are vital. Many people simply don’t realize vehicle-into-building crashes are so common, widespread, and dangerous.

“I used to be one of those people who was unaware,” says IPI Senior Training and Development Specialist Cindy Campbell. “Even when I heard and read about the phenomenon, I have to admit it was kind of abstract to me. Then, on the morning of Feb. 25 this year, one of my favorite little eating spots—The French Corner Bakery in Cambria, [Calif.]—was hit. A drunk driver plowed into a parked car, sending both vehicles into the restaurant and injuring five people inside, one very seriously. It was pure luck that I wasn’t there that morning.”

The Storefront Safety Council collects and maintains data on vehicle-into-building crashes from around the U.S. Data show:

- Pedal error and operator error lead the list of causes, each accounting for 28 percent.
- Driver age is widely distributed. Older drivers together account for about a third of incidents, but they have lots of company from every other segment of legal-age drivers.
- Incidents are also well-distributed by site type, with retail stores accounting for 24 percent, commercial buildings 23 percent, and restaurants 19 percent. **P**



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