November 2013

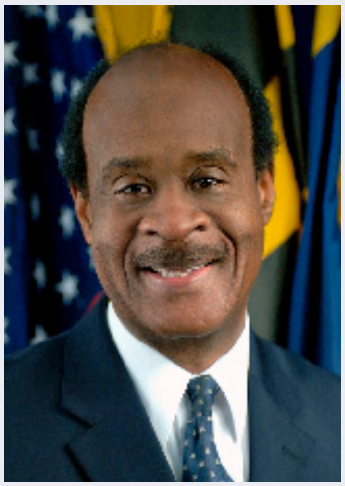
Montgomery County Executive Isiah Leggett

Pedestrian Safety Initiative:

Reducing Collisions in Parking Lots and Garages

Message from County Executive Isiah Leggett

In 2007, I released my Pedestrian Safety Initiative, which for the first time provided a blueprint for action to improve pedestrian safety based on measurable strategies. The good news is that we have seen significant collision reductions in areas where we have taken a comprehensive and targeted approach.



But, much more remains to be done.

Our challenge is to reassess what we are doing, keep what's working well and find new and creative ways to expand our pedestrian safety efforts. Taking a data-driven approach to improving pedestrian safety led to the finding in 2012 that nearly 30 percent of pedestrian collisions occurred in parking lots/garages. What was even more surprising was that injuries received in 18 percent of these collisions were severe enough to be incapacitating. That is why I am presenting this expansion of my Pedestrian Safety Initiative to include a focus on pedestrians in parking lots and garages.

I am committed to making Montgomery County a model of a truly walkable community. It's what every resident deserves. And, this commitment extends to every area in the County where pedestrians and vehicles may come into conflict – including parking lots and garages. I hope all of you will join us – residents, businesses, employees, visitors, drivers and pedestrians -- in our efforts to reduce the number and severity of parking lot pedestrian collisions. We have proven that, together, we can make our community safer for everyone – and with your help, we will continue to find solutions that work.

Isiah Leggett
County Executive

Acknowledgements

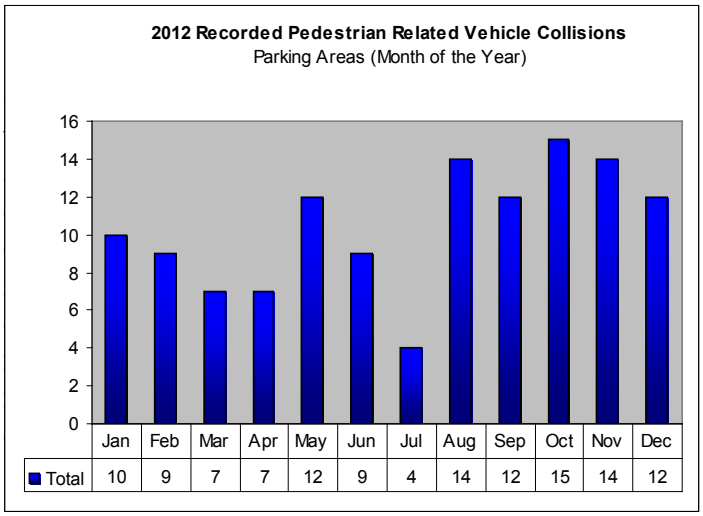
For the past year, an inter-agency expert working group has collaborated to improve pedestrian safety in parking lots. They deserve sincere appreciation for their dedication and work in helping to better understand the issues and develop an action plan for the future. The members of the parking lot pedestrian safety work group are:

Tony Alexiou	Montgomery County Department of Transportation
Esther Bowring	Montgomery County Office of Public Information
Shawn Brennan	Montgomery County Department of Health and Human Services
Bill Delaney	Department of Fire & Rescue Services
Tom Didone	Montgomery County Police Department
Jeff Dunckel	Montgomery County Department of Transportation
Matt Folden	Maryland-National Capital Park and Planning Commission
Robert Kronenberg	Maryland-National Capital Park and Planning Commission
Fred Lees	Montgomery County Department of Transportation
Ti Lor	Montgomery County Police Department
Bob McCullagh	Montgomery County Police Department
Ehsan Motazedi	Montgomery County Department of Permitting Services
Tom Pogue	Montgomery County Department of Transportation
Bill Selby	Montgomery County Department of Transportation
Rick Siebert	Montgomery County Department of Transportation
Michael Subin	Montgomery County Office of the County Executive

Introduction

In 2012, there were 423 reported pedestrian collisions in Montgomery County. Of these collisions, 125, or about 30 percent, occurred in parking lots and garages – a 39 percent increase in one year and the third consecutive year of increases in parking lot collisions.

In 2011, 23 percent (out of 399) occurred in parking lots. In 2010, 16 percent of collisions (out of 436) occurred in parking lots. It is not known how many collisions occurred that were unreported.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total	10	9	7	7	12	9	4	14	12	15	14	12

Figure 2

In 2012, 83 percent of the parking lot, collisions occurred in private retail parking lots, including lots at malls, strip malls, fast food and other restaurants, banks, gas stations, etc. Of the remaining parking lot collisions, five occurred in residential lots, seven at commercial or industrial facilities, three in County parking lots/garages, two at middle schools and one each at a hospital, cemetery, County library and Metro station. Five percent of the collisions occurred in parking garages rather than lots.

Different from pedestrian collisions on roads, darkness does not seem to be a causal factor in parking lot collisions. Most parking lots are well lit and used less in the evening and early morning hours, facts that are reflected by the data. However, there is a strong relationship, as shown

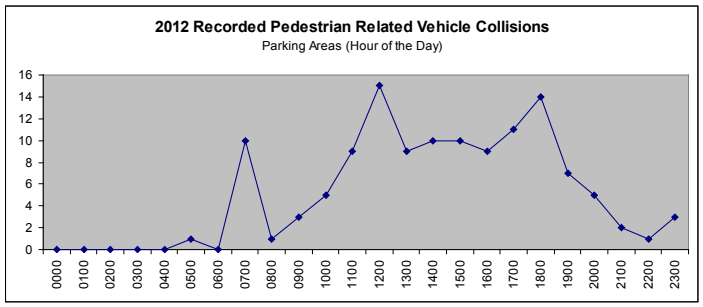


Figure 1

in Figure 1, with peak hours of parking lot usage during breakfast, lunch, after work/dinner and early evening.

In 2012, the highest number of collisions occurred in October, November and August, followed by December and May. The percent of parking lot collisions in 2012 varied by month as shown in Figure 2:

Of the parking lot collisions that occurred in 2012, 57 percent involved two- or four-door sedans. Other characteristics or causes of the parking lot/ garage collisions are shown below:

- Backing out of a parking stall or driving lane.....31 percent
  Of these collisions, 54 percent involved trucks, vans and large vehicles.
- Vehicle traveling in the driving or parking lane .....26 percent
- Vehicle entering or exiting the parking lot .....13 percent
- Vehicle turning.....12 percent
- Vehicle rolling unattended .....5 percent
- Vehicle parking .....2 percent
- Unusual circumstances .....11 percent

In 2012, 75 percent of parking lot collisions were deemed the fault of the driver. However, it should be noted that the driver is generally presumed to be at fault without clear evidence to the contrary.

Figures 3, 4 and 5 indicate the ages and sexes of the pedestrians and drivers involved in parking lot collisions in 2012.

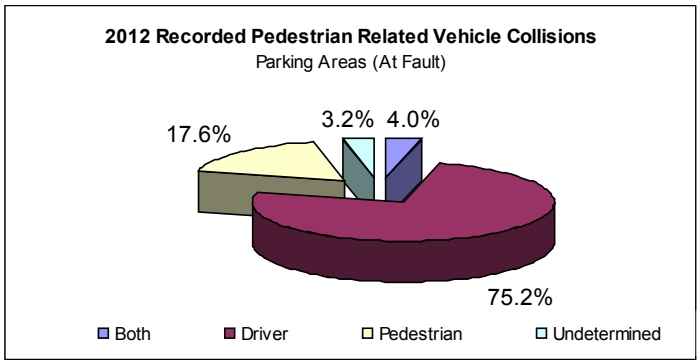


Figure 3

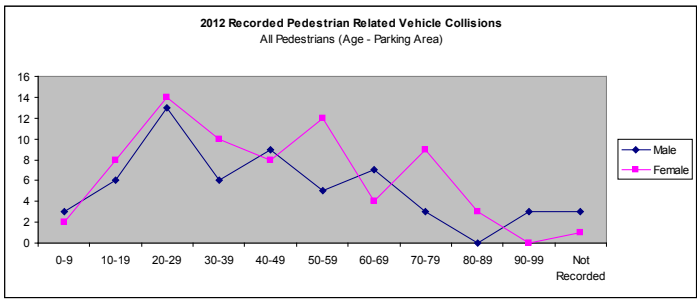


Figure 4

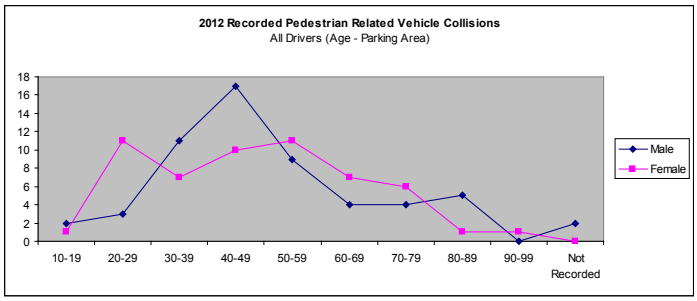


Figure 5

Approach

Improving pedestrian and traffic safety is a complex endeavor because it involves millions of daily trips taken by people of every age, ability and background. Changing pedestrian and driver behavior is key to preventing collisions. Research has shown that the most effective traffic safety programs involve a combination of approaches to change behavior, including the "3 E's" of traffic safety - engineering, enforcement and education. Engineering changes, such as installing crosswalks or traffic calming measures, may make the physical environment safer. Enforcement of traffic laws induces people to slow down and follow the rules. Finally, educating the public on the rules of the road, teaching safe driving and walking skills, and stressing the importance of looking out for each other all contribute to safer behavior.

County Executive Leggett's overall vision is to increase the safety and security of pedestrians and reduce pedestrian fatalities and collisions. Over the past five years, his Pedestrian Safety Initiative has successfully implemented 3 E strategies that are working.

Countywide, between 2009 and 2012, the Initiative:

- Decreased overall pedestrian collisions by seven percent;
- Reduced the most severe collisions, those where pedestrians are incapacitated or killed, by 21 percent;
- Reduced collisions 50 percent in areas where traffic calming measures were installed;
- Reduced collisions by 43 percent in High Incidence Areas (HIAs), locations with the highest concentrations of collisions; and
- Cut collisions by 79 percent within a quarter mile of schools targeted for engineering, education and enforcement activities under the Safe Routes to Schools program.

The challenge for improving pedestrian safety in parking lots is finding ways to use the proven 3 E approach on private property. Unlike public roads, engineering solutions may be very limited, and there are no enforceable traffic laws on private property. Other constraints include lack of data on best engineering practices and effectiveness of education to reduce collisions.

The strategies recommended in this plan to reduce parking lot pedestrian collisions are listed below.

Strategy 1: Identify Research on Parking Lot Pedestrian Safety

Nationwide, little research has been conducted on parking lot and garage pedestrian safety. Topics of interest to Montgomery County's efforts to reduce the number and severity of these parking lot/garage collisions include: rates and trends in collisions, causes and locations of collisions, characteristics of drivers and pedestrians involved in collisions, best practices for design of lots and garages to enhance pedestrian safety, zoning requirements that enhance parking lot pedestrian safety, types of messages that are effective in educating the public and types of outreach activities that have proven to be the most effective.

Components

- Contact organizations and agencies to identify research studies or programs on pedestrian safety in parking lots and garages, including the National Highway Traffic Safety Administration, the Insurance Institute for Highway Safety, AAA, the International Parking Institute, International Council of Shopping Centers, Apartment and Office Building Association, MarylandStateHighway Administration, Federal Highway Administration and others.

- Team with other organizations to conduct research in Montgomery County or develop proposals to obtain grant funds to improve parking lot pedestrian safety.

Strategy 2: Forge Partnerships

About 83 percent of the 2012 parking lot collisions occurred in privately owned retail parking lots and seven percent occurred in other commercial or industrial parking lots/garages. To be effective, any strategy to reduce pedestrian collisions will require a close collaboration and partnership with the private property managers and owners of parking lots and garages. In addition, other partners will be sought to help with education and outreach, engineering assessments and other activities.

Components

- Form "kitchen cabinet" partnership with major private parking lot owners and managers. Cooperatively develop a process to obtain ongoing input and participation from the kitchen cabinet on education and outreach activities, engineering solutions and other issues.

- Develop a survey to assess what parking lot owners and managers perceive the issues to be, what types of outreach they think would be effective, etc.

- Solicit help from the kitchen cabinet to recruit retailers leasing their properties as partners to aid in education and outreach activities.

- Seek partners to co-sponsor outreach ads, activities or giveaways; provide community grants; or provide other assistance. Partners may include major retailers, grocery chains, pharmacies, banks, restaurants, insurance companies, AAA Mid-Atlantic, etc.

Strategy 3: Conduct Detailed Analyses of Montgomery County Pedestrian Parking Lot Collision Data

Much of the success of the County Executive's Pedestrian Safety Initiative stems from its data-driven approach. In conjunction with CountyStat, detailed and ongoing analyses of collision data has informed and guided countywide efforts to improve pedestrian safety and been invaluable in tracking the progress and success of the program. Because so little research has been conducted on parking lot pedestrian safety, using County data to better understand parking lot collisions is essential to developing a better understanding of the contributing factors. Given the number of parking lot collisions that occur each year, analyzing three to five years of data is considered to be the minimum needed to reliably identify significant trends.

Components

- Using three to five years of detailed information on pedestrian parking lot collisions, develop a database that identifies the characteristics of each collision, including

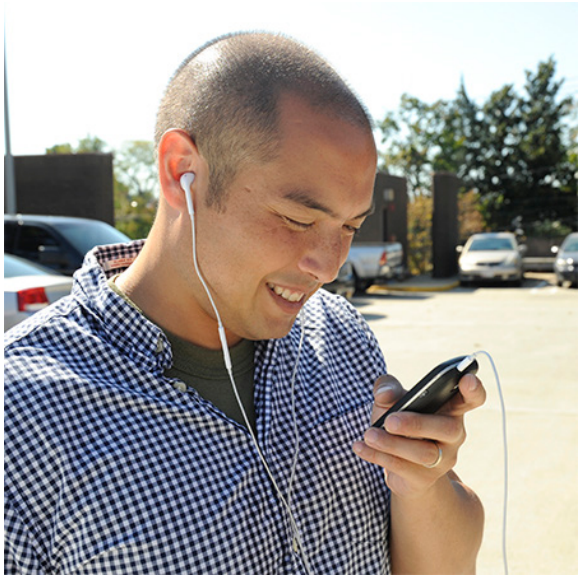
exact location -- time of day, month, day of the week, ages and genders of driver and pedestrian, type of vehicle, precise cause of collision, who was at fault, severity of collision, and any other information that can be extracted from accident reports.

- Analyze data to identify causal factors contributing to collisions, such as locations, pedestrian or driver actions, types of shopping experiences, etc. that could lead to recommended solutions.

- For locations with multiple collisions, seek data concerning size of parking lot, number of spaces, average number of shoppers per year, number of entrances and exits, and other relevant information that could be linked to higher rates of collisions.

Strategy 4: Develop Pedestrian Safety Improvement Strategies for Lots/Garages

Over the last five years, one of the County's most successful strategies in reducing pedestrian collisions has been focusing on High Incidence Areas, or locations in the County where a significant number of collisions are clustered. Strategy 4 looks at ways to duplicate the success of the County's High Incidence Areas approach given the widespread geographic distribution of parking lot/garage collisions and the limitations of what can be accomplished on private property. Site factors unique to each parking lot may contribute to the rate of collisions that occur, but more information is needed to identify whether there are specific measures that might improve overall safety in parking lots.



In 2012, three shopping centers each had four pedestrian collisions, one location had three collisions, nine locations each had two collisions and of the remaining 92 collisions, each occurred in a unique location. Looking at three to five years worth of collision data could establish a stronger geographic component for multiple collisions and help guide targeted efforts to reduce these collisions.

Components

- Staff will identify parking lots that experienced multiple pedestrian collisions using three to five years of data for further examination, and then identify parking lots of comparable size and traffic volume that experienced no collisions.

- Conduct an informal review of lots without collisions to identify any common characteristics they may have that could be applied to improve safety in other parking lots.

- In lots with multiple collisions, work with a representative of the property owner/manager to conduct an informal review. If appropriate, assist property owners/managers in developing a list of simple improvements that could enhance safety, such as installing traffic calming measures or restructuring traffic flow near entrances and exits.

- If a stronger geographic trend emerges from further data analysis, focus attention on retail corridors with the highest activity levels to direct resources to those areas most likely to benefit from interventions.

Strategy 5: Engage and Educate the Public

Most people in parking lots and garages are both drivers and pedestrians. However, it's often the case that each is impatient with the unsafe behaviors exhibited by the other in parking lots – until they switch roles. It is not uncommon for drivers to practice unsafe walking behaviors when they get out of their cars and pedestrians to drive unsafely when they return to their cars.

Most people are very surprised to learn just how widespread parking lot pedestrian collisions are and how many cause severe injuries. Like any public education campaign, raising awareness of the frequency and severity of parking lot pedestrian collisions is essential to improving safety. Educating both pedestrians and drivers about their risks and responsibilities can help change both attitudes and behaviors in parking lots.

Components

- Target outreach to persons in parking lots where collisions have occurred. In partnership with property owners and managers, raise parking lot patron awareness by using Fire & Rescue Services personnel and volunteers to distribute reusable bags and educational information.

- In partnership with property owners and managers, provide other onsite education measures such as posters, curb markers, signs on outdoor trash cans, banners or other materials.

- Seek free, traditional media coverage of parking lot safety issues through press events and other activities. Contact transportation reporters. Create public service announcements for the County's cable television channel and You Tube.

- Use social media -- Engage Montgomery, Facebook, Twitter and other platforms.

- Enlist civic associations, business groups, the school community and others to assist with outreach.

- Use low cost and no-cost advertising options, as the budget allows.

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