

# the benefits of slowing down traffic

starting where children walk and bike





**CITY LEADERS** are working hard to create communities with the qualities that attract and retain residents. This means many things such as great schools and jobs, affordable neighborhoods, and safe transportation options that support economic growth. Vehicle speed is a key component of livability.

The 2017 National Community and Transportation Preference Survey found that survey respondents show a clear preference to have choices when it comes to transportation options in a community, with eighty percent placing high importance on walkability. This preference spans generations, with the majority of millennials and those over 55 years of age both indicating this preference.<sup>1</sup> As cities expand choices for walking, bicycling and transit use, a key component of livability and mobility cannot be overlooked: vehicle speed.

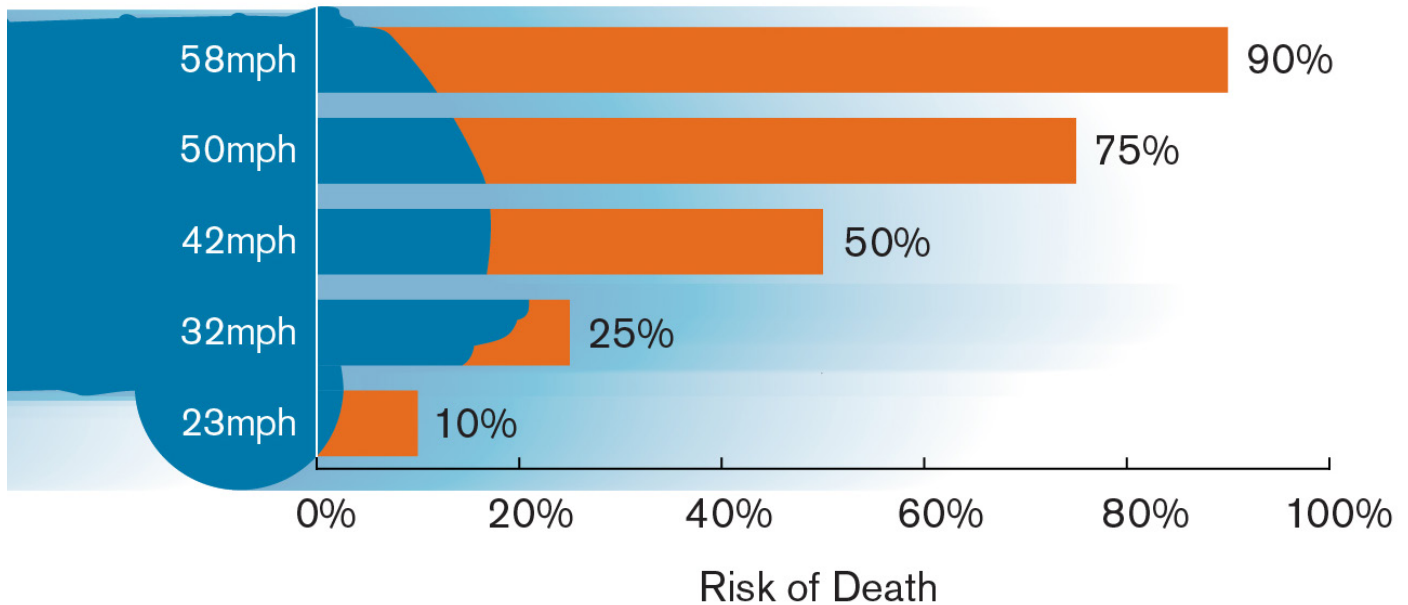
Vehicle speed impacts both the likelihood and severity of crashes, and the higher the speeds, the more dangerous and uninviting the environment becomes for pedestrians.

Speed management is a difficult issue with much potential payoff. There are many known strategies for slowing down traffic. But elected officials' knowledge of and support for these countermeasures isn't always enough. Implementation of these countermeasures often face social and political hurdles because lowering speeds to improve safety can conflict with motorists' desire to travel quickly. More and more, cities are turning to places where their youth walk and bike to begin addressing vehicle speeds.

## vision zero for youth puts a focus on reducing speeds

Building on the success of local safe routes to school programs, cities are finding that starting speed reduction programs where kids are present – in school zones, near parks, and playgrounds – can jumpstart community buy-in for such efforts. They also create safer, more livable communities for all while focusing on one of the most vulnerable groups. Approaching challenging issues through the lens of youth road safety, such as school travel, can garner public and political support and can demonstrate a commitment to taking action to eliminate traffic deaths and serious injuries in a tangible way. Vision Zero for Youth ([visionzeroforyouth.org](http://visionzeroforyouth.org)) incorporates lessons learned from youth-focused initiatives such as safe routes to school and applies Vision Zero principles to advance safety for youth in all settings.

## The average risk of death for a pedestrian rises dramatically as speeds increase.



Source: AAA Foundation for Traffic Safety

IMAGE: Powell, Tara Casanova. (January 2019). Speeding Away From Zero: Rethinking a Forgotten Traffic Safety Challenge Governors Highway Safety Association. Available: <https://www.ghsa.org/resources/Speeding19>

## reducing speeds by even eight mph can make a big difference

Many people think that driving a few miles per hour over the speed limit is not a big deal. Yet for people walking nothing could be further from the truth. The change in a driver's reaction time and speed at impact is a very big deal. A pedestrian hit by a vehicle traveling at 23 mph has a 25 percent average risk of severe injury. A vehicle traveling **eight miles per hour faster**, at a speed of 31 mph, doubles the chance of a severe injury to a pedestrian hit by that car. Speed and the chance of pedestrian fatalities have a similar relationship. The chart above shows that the average risk of death for a pedestrian is 10 percent at 23 mph, rises to 50 percent at 42 mph, and jumps to 90 percent at 58 mph.<sup>2</sup>

Now is an important time to act. Pedestrian fatalities have been on the rise. Despite the fact that overall traffic crashes have declined, pedestrian and bicyclist fatalities increased by 32 percent between 2008 and 2017.<sup>3</sup> While there are several factors that contribute to crashes, speed is a key factor. In 2017, 26 percent of all traffic deaths were speed related.<sup>4</sup>

Child pedestrians are particularly vulnerable for many reasons, including their size and developmental abilities. In 2017, 1,147 children were fatally injured in traffic crashes. That year, almost 20% of children under the age of 14 fatally injured in traffic crashes were pedestrians.<sup>5</sup>



## successful speed management is possible

Cities of all sizes are working to reduce vehicle speeds and improve pedestrian safety. Some efforts are full-blown, comprehensive programs such as Vision Zero while others are tackling location-specific speed reduction through targeted countermeasures. Roundabouts near schools have been used to slow traffic in places like Clearwater, FL and Green Bay, WI. Cities have employed road diets near schools to reduce speeds as in Meridian, MS and Santa Monica, CA and cities such as Seattle, WA and Boston, MA lowered speed limits to 25 mph on city streets. Recently cities and communities are also considering speed reductions on arterial roads, which would also have a promising effect for students attending schools on or near these roads.

### DECREASING SPEED ON ARTERIAL ROADWAYS

Communities have started investigating secondary or arterial roads as potential opportunities to make an impact on students' ability to walk and bike to school. They have been a particular focus for many Vision Zero initiatives, as studies show that a disproportionate number of injuries and deaths occur on arterial streets, especially those in poor neighborhoods and in communities of color.<sup>6</sup>

**QUEENS, NYC:** Oceania Street in Bayside, Queens received school safety improvements including a comprehensive redesign. The corridor is heavily used by students accessing MS 74. The street includes access to Interstate 495/Horace Harding Expressway. Changes include:

- **TWO-WAY PROTECTED BIKE LANE** offers cyclists a much safer space, and reduces lane width, thereby slowing traffic.
- **LEADING PEDESTRIAN INTERVALS** allow pedestrians to get a head start crossing a street before traffic proceeds.
- **REMOVAL OF PARKING SPACES** increases visibility and allows more space for active travel.
- **SLOW ZONES** and **STOP-CONTROLLED HIGH VISIBILITY CROSSWALKS** help prioritize walking and biking in the transportation system.

### CRASHES DECLINED BY 32 PERCENT IN THE FIRST YEAR.

**EUGENE, OR:** Cesar Chavez Elementary School is in a low-income area located just off of an arterial roadway. Students receive supplemental busing to the school because the arterial is deemed a hazard. The city just received funds from Oregon's Safe Routes to School infrastructure improvement grant program to add traffic calming on either side of the crossing, to change the school zone signs to "when flashing" with flashers and to add permanent speed readers on either side of the roadway.

## much is known about what works

There are numerous proven countermeasures to reduce speeds and improve pedestrian safety. Treatments such as road diets and roundabouts have documented crash-reducing effects, while others, such as chicanes or speed humps have proven speed-reducing or traffic calming effects.

Many resources for managing speed are available to the public. The National Cooperative Highway Research Program recently released a synthesis of research titled **Pedestrian Safety Relative to Traffic Speed Management**, which thoroughly examines existing engineering, enforcement, education and marketing and policy countermeasures related to speed management, and the research behind them.<sup>7</sup>

The Federal Highway Administration's (FHWA) **Jurisdiction Speed Management Action Plan Development Package** identifies and explains proven countermeasures.<sup>8</sup> Using current knowledge and best practice recommendations, FHWA created this collection of resources to provide guidance to State and local agencies to develop speed management action plans to reduce fatalities and injuries related to speeding. **Integrating Speed Management**

**within Roadway Departure, Intersections, and Pedestrian and Bicyclist Safety Focus Areas** features approaches for integrating speed management into local policies, stakeholder engagement and public awareness campaigns as well as strategies to enhance bicyclist and pedestrian safety.<sup>9</sup>

The **Speed Management Toolkit** includes a comprehensive speed management bibliography, tables of speed management countermeasures with expected crash or speed effects, and tip sheets for communications programs.<sup>10</sup> These resources can be used to help populate the **Speed Management Action Plan Template**.<sup>11</sup> Sample local and statewide action plans are also included as a guide. Further information pertaining to lowering vehicular traffic speed can be found in the FHWA **Traffic Calming ePrimer**.<sup>12</sup> PEDSAFE provides a focused list of Traffic Calming countermeasures, and helpful implementation guidance.<sup>13</sup>

The World Health Organization's **Speed Manual** contains a chapter which details a range of approaches to speed management and highlights measures taken worldwide to protect vulnerable road users.<sup>14</sup> The Institute of Traffic Engineers' page **Setting Speed Limits** provides a good overview of current practices and further available resources on the topic of speed.<sup>15</sup>

<sup>1</sup> <https://www.nar.realtor/sites/default/files/documents/2017-community-preferences-survey-press-release-12-19-2017.pdf>

<sup>2</sup> <https://aaafoundation.org/wp-content/uploads/2018/02/2011PedestrianRiskVsSpeedReport.pdf>

<sup>3</sup> [http://www.pedbikeinfo.org/factsfigures/facts\\_safety.cfm](http://www.pedbikeinfo.org/factsfigures/facts_safety.cfm)

<sup>4</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812687>

<sup>5</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812681>

<sup>6</sup> <http://onlinepubs.trb.org/onlinepubs/circulars/ec239.pdf>

<sup>7</sup> <http://www.trb.org/Main/Blurbs/179827.aspx>

<sup>8</sup> [https://safety.fhwa.dot.gov/speedmgt/ref\\_mats/docs/fhwa\\_speedmanagementpackage\\_final.pdf](https://safety.fhwa.dot.gov/speedmgt/ref_mats/docs/fhwa_speedmanagementpackage_final.pdf)

<sup>9</sup> [https://safety.fhwa.dot.gov/speedmgt/ref\\_mats/fhwasa16017/spd\\_mgt\\_rwdpbik.pdf](https://safety.fhwa.dot.gov/speedmgt/ref_mats/fhwasa16017/spd_mgt_rwdpbik.pdf)

<sup>10</sup> [https://safety.fhwa.dot.gov/speedmgt/ref\\_mats/docs/speedmanagementtoolkit\\_final.pdf](https://safety.fhwa.dot.gov/speedmgt/ref_mats/docs/speedmanagementtoolkit_final.pdf)

<sup>11</sup> [https://safety.fhwa.dot.gov/speedmgt/ref\\_mats/docs/fhwa\\_speedmanagactionplantemplate\\_final.pdf](https://safety.fhwa.dot.gov/speedmgt/ref_mats/docs/fhwa_speedmanagactionplantemplate_final.pdf)

<sup>12</sup> [https://safety.fhwa.dot.gov/speedmgt/traffic\\_calm.cfm](https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm)

<sup>13</sup> <http://www.pedbikesafe.org/PEDSAFE/countermeasures.cfm>

<sup>14</sup> [https://www.who.int/roadsafety/projects/manuals/speed\\_manual/3-What.pdf](https://www.who.int/roadsafety/projects/manuals/speed_manual/3-What.pdf)

<sup>15</sup> <https://www.ite.org/technical-resources/topics/speed-management-for-safety/setting-speed-limits/>



**VISION ZERO FOR YOUTH** is an initiative of the National Center for Safe Routes to School supported by the Pedestrian and Bicycle Information Center, FIA Foundation and UNC Highway Safety Research Center.

This resource was funded by the Pedestrian and Bicycle Information Center.