



Office of the City Manager

WORKSESSION
December 7, 2017

To: Honorable Mayor and Members of the City Council
 From: Dee Williams-Ridley, City Manager
 Submitted by: Phillip L. Harrington, Director, Department of Public Works
 Subject: Development of a Vision Zero Traffic Safety Policy

INTRODUCTION

The Berkeley Strategic Transportation (BeST) Plan, adopted by Council in June 2016, includes a recommendation that the City develop a “Vision Zero” Policy that strives toward eliminating the number of fatal and severe traffic injuries in the City to zero. The BeST Plan recommends the City dedicate funding to identify a “high-injury corridor network,” so the City may use its resources to tackle the most impactful safety improvement projects. As a follow-up to the BeST Plan recommendation, this report provides information on the Vision Zero approach to traffic safety, and next steps toward a possible future Vision Zero policy. Existing Vision Zero programs rely on the coordinated commitment of Department of Public Works, Berkeley Police Department, Department of Public Health, Office of the City Manager, and certain Elected Officials. This coordination demonstrated why it is important to share this information at the highest levels before embarking on any effort to develop such a plan.

CURRENT SITUATION AND ITS EFFECTS

Vision Zero is a ‘safety-first’ approach to transportation that strives toward eliminating all deaths and severe injuries on City roadways. The Vision Zero approach to traffic safety was first adopted by Sweden’s parliament in 1997. By 2015, traffic deaths in Sweden dropped by over 50%, saving approximately 280 lives per year^{1,2}. Chicago was the first US city to adopt a Vision Zero policy or plan in 2012. Since then, other US Cities have followed suit, including San Francisco, San Jose, Los Angeles, and Fremont, California. The core principles of Vision Zero may be summarized as follows:

- **Prevention:** Traffic deaths are preventable and unacceptable.
- **Safety over speed:** Life and health should not be exchanged for speed or convenience.

¹ *Development of Road Safety in Sweden*. Swedish Transport Agency, Swedish Transport Administration, Transport Analysis, and Swedish National Road and Transport Research Institute. See <http://bit.ly/2yLFUmi>.

² *Global Status Report on Road Safety 2015*. World Health Organization. See <http://bit.ly/2ciLUp7>.

- **Humans make mistakes:** All humans make mistakes, but the transportation system and policies should be designed to discourage risky behaviors and anticipate human error to the extent possible so that the consequence of such error is not death or severe injury.
- **People are inherently vulnerable:** The transportation system should be designed to result in traffic speeds and driver behaviors that protect human life.
- **Safety is a shared responsibility:** Policies at all levels and departments of government need to align with making traffic safety the highest priority.

Achieving Vision Zero requires creating a culture, among all City agencies, both appointed and elected, that prioritizes traffic safety using a data-driven approach. Vision Zero traffic safety efforts focus on the “three E’s”:

- **Engineering:** build better and safer streets and systematically improve the existing street network, with an emphasis on protecting the most vulnerable road users and calming traffic;
- **Enforcement:** focus traffic enforcement on the five violations that cause the most injuries and deaths. In Berkeley, these are violation of the pedestrian right-of-way, speeding, red light violation, stop sign violation and yield-while-turning violation; and
- **Education:** increase public awareness of laws related to violation of the pedestrian right-of-way and speeding, and highlight the human consequences of violations, in order to change driving behavior.

BACKGROUND

From 2012 to 2016, an annual average of up to three people were killed in traffic collisions on Berkeley streets and an additional thirty-one people were severely injured. Severe injuries may be debilitating or life threatening and require hospitalization. To date in 2017, two persons have been killed in traffic collisions in Berkeley: a 78-year-old bicyclist on Sacramento Street south of Hopkins Street; and a 69-year-old pedestrian crossing Monterrey Avenue at the intersection of Hopkins Street.

Of the fourteen people killed in traffic collisions in Berkeley between 2012 and 2016, five were walking, four were bicycling, and five were driving at the time of those collisions. Pedestrians and bicyclists are highly overrepresented among those killed and severely injured in traffic collisions in Berkeley, in consideration of statistics showing pedestrians are involved in only 7% of all crashes (35.7% of fatalities), and bicycles in only 7.8% of crashes (28.6% of fatalities).

The three most common factors that caused severe and fatal collisions, as recorded by law enforcement, were “Unsafe Speed” (22%); a violation of the “Pedestrian Right of Way” (14%); and “Driving or Bicycling Under the Influence of Alcohol or Drugs” (10%).

Under a Vision Zero approach, traffic safety efforts would focus on reducing these primary causes of severe and fatal collisions. Reducing vehicle speed is particularly important for reducing pedestrian fatalities, as a pedestrian hit by a vehicle traveling at twenty miles per hour has a 90% chance of survival, but a pedestrian hit by a vehicle traveling at forty miles per hour has only a 10% chance of survival.

ENVIRONMENTAL SUSTAINABILITY

Pedestrian and bicycle trips do not release air pollutants or greenhouse gases. A potential Vision Zero policy could increase the share of pedestrian and bicycle trips by making these travel modes safer and more accessible. For example, a survey related to the 2017 Berkeley Bicycle Plan found 71% of Berkeley residents are interested in bicycling, but do not do so because they are concerned about safety. Increasing cycling and walking would help the City achieve the Berkeley Climate Action Plan greenhouse gas emission reduction targets of 33% below year 2000 levels by the year 2020, and 80% below year 2000 levels by 2050. The Climate Action Plan states that transportation modes such as cycling must become the primary means of fulfilling the City's mobility needs in order to meet these targets.

POSSIBLE FUTURE ACTION

The first step towards adopting a Vision Zero policy would be a City commitment to strive toward eliminating all traffic fatalities and injuries. A task force or working group could then be convened with representatives from City Departments that have jurisdiction or influence over roadways or public health, including Berkeley Police Department, Berkeley Fire Department, Department of Planning & Development, Public Health Division of the Department of Health, Housing & Community Services, Department of Public Works, the Office of the City Manager, and the City Council.

FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

Fiscal impacts of future actions depend upon actions identified by the Council or a future Vision Zero task force or working group. New safety efforts will require reprioritizing non-safety related work, re-focusing existing safety-related work under a Vision Zero approach, or providing additional funding.

CONTACT PERSON

Farid Javandel, Transportation Division Manager, Public Works (510) 981-7061
Beth Thomas, Principal Planner (510) 981-7068

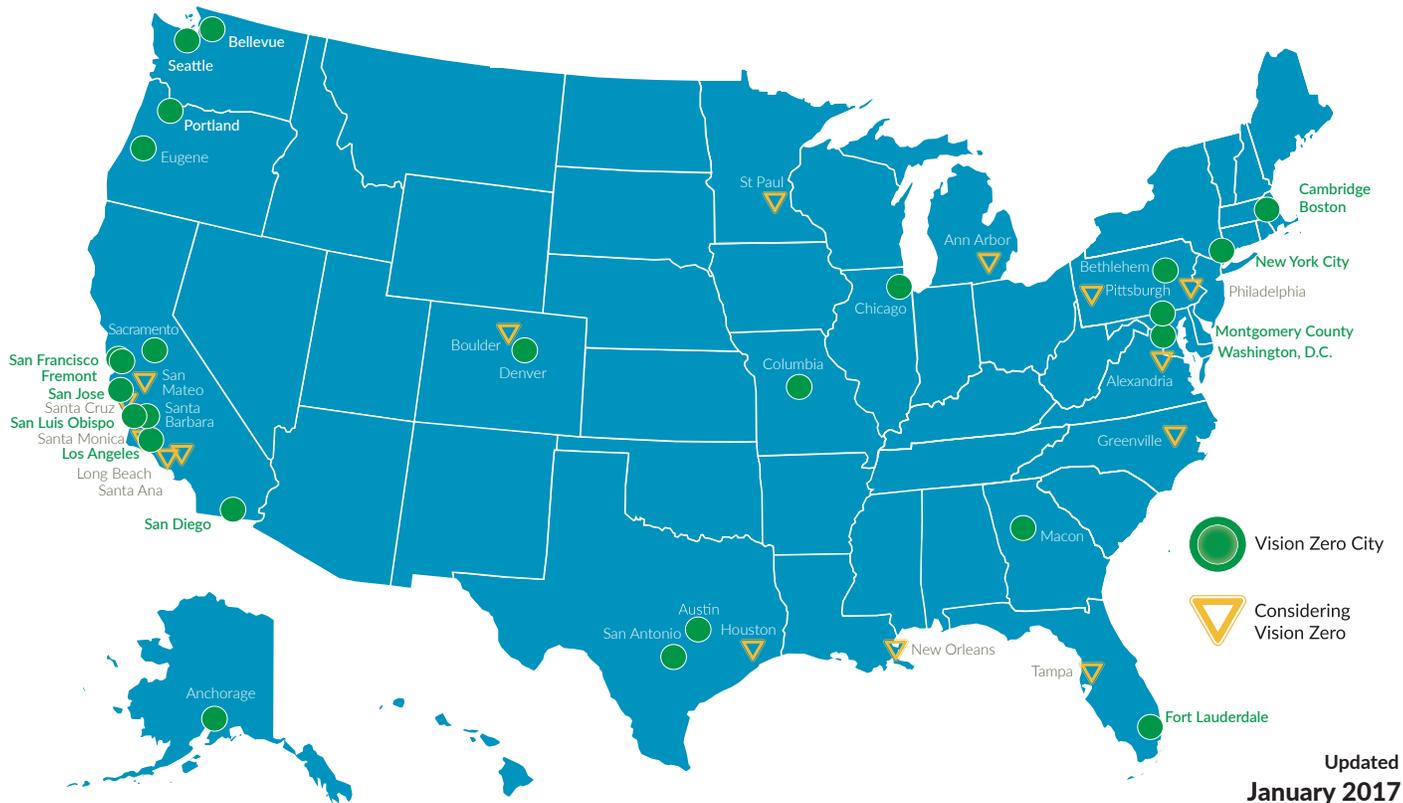
Attachment:

1: Moving from Vision to Action: Fundamental Principles, Policies & Practices to Advance Vision Zero in the U.S.

VISION ZERO CITIES

Vision Zero has spread and evolved rapidly in the U.S. since New York became the first city in the nation to commit to a Vision Zero goal in 2014, pledging to eliminate deaths and severe injuries among all road users by 2024.

As of this writing, more than 20 other U.S. cities have made legislative Vision Zero commitments and are at various stages of designing programs and policies to reach these goals, while dozens more communities are considering making such commitments.



A VISION ZERO CITY MEETS THE FOLLOWING MINIMUM STANDARDS:

1. Sets clear goal of eliminating traffic fatalities and severe injuries
2. Mayor (or top official) has publicly, officially committed to Vision Zero
3. Vision Zero plan or strategy is in place, or Mayor has committed to doing so in clear time frame
4. Key city departments (including Police, Transportation and Public Health) are engaged.

VISION ZERO EFFORTS SHOULD PRIORITIZE THE FOLLOWING POLICIES AND PRACTICES:

- 1. Build and sustain leadership, collaboration and accountability.**
- 2. Collect, analyze and use data.**
- 3. Prioritize equity and engagement.**
- 4. Lead with roadway design that prioritizes safety.**
- 5. Manage speed to safe levels.**
- 6. Maximize technology advances, but don't overlook low-tech solutions.**

1. BUILD AND SUSTAIN LEADERSHIP, COLLABORATION AND ACCOUNTABILITY



An urgent, clear, and sustained public commitment of support for Vision Zero should come from the highest-ranking public officials in a community, usually the Mayor and City Council. Sending a clear signal of priority from City Hall is a critical first step toward aligning the multiple internal city agencies that are in integrally involved in leading Vision Zero efforts.

Creating a permanent, high-level home for the city's Vision Zero effort within the city bureaucracy is another key move. Institutionalizing the work and building an expectation for accountability from all of the agencies involved is necessary for success.

Cross-sector, large-scale collaboration and the inclusion of public health, law enforcement, policy makers, elected officials, and community members in traffic safety work is one of the things that makes Vision Zero powerful. Even though sometimes administratively challenging, this cross-sectoral collaboration -- including using consistent data, setting shared goals, and defining clear responsibilities for all partners -- is key in advancing Vision Zero.

There should be clear interim goals that are measurable on the road to zero, which all stakeholders commit to together; this forces people to move out of silos and create shared responsibility and investment in outcomes.

One way to encourage this is through regular internal stakeholders meetings that are driven by data and clear goals. Committing to regular, public reports to governing bodies on progress and learnings is also critical to establish trust and accountability: This includes not only the full City Council and the expected transportation leaders within city government, but also the Police Commission, Public Health Commission and other relevant bodies with their own leadership structures. Requiring public reporting -- at least quarterly -- will help keep Vision Zero prominent on decision makers' agendas, as well as increase transparency with the public.

In addition, an executive or legislative body can help foster a culture of innovation around Vision Zero by empowering staff to bring new ideas forward and supporting their implementation, even knowing some may ultimately fail. Pilot and demonstration projects are powerful ways to transform streets rapidly and inexpensively, and are great opportunities to collect data, engage the community, and re-frame the traffic safety conversation. Being open to collaboration and learning from the experience of other cities, both at home and abroad, is another trait of strong Vision Zero leadership. The problems of traffic safety are not unique to each city -- neither are the solutions.



Developing Collaborative Leadership & Accountability

Strong, shared leadership encompasses not only public-facing displays of support from City Hall, but also empowering internal champions and fostering a shared ownership of Vision Zero goals across agencies.

Some examples include the following:

San Francisco's Police Department (SFPD) updates its Commission on Vision Zero progress on a quarterly basis. These updates are part of public hearings, so this also serves as a chance to inform the public. The Police Chief reports to the Commission on the specific Vision Zero goal of focusing traffic enforcement efforts on the most dangerous behaviors on the roadways, such as speeding and violating pedestrians' right of way.

The SFPD has set a measureable goal of "Focus on the Five," with at least 50% of its traffic enforcement efforts focused on the top five most dangerous traffic behaviors, rather than lower-level infractions (such as expired tags or broken tail lights) that are not benefitting safety efforts as well. This helps engage law enforcement officers and their high-level leadership directly in Vision Zero efforts and hold them accountable in a transparent way for the public and other interested stakeholders.

Many Vision Zero cities, such as Austin, TX and Washington, D.C., have created Action Plans laying out specific strategies and identifying which agency is responsible for "owning" that strategy. This is a smart way to engage stakeholders clearly and to elevate accountability and transparency. In cases where multiple agencies are involved, which



D.C. agency leaders collaborated on the Vision Zero Action Plan.
Photo credit: Jonathan Rogers, District Dept of Transportation



An interagency and interdepartmental task force oversees implementation of the Austin Vision Zero Action Plan.
Photo credit: City of Austin

is common and encouraged, there should still be a single agency identified as primarily responsible for the action. Over time, these cities should track progress and publicly share updates with partners and the public.

Los Angeles leveraged its collaborative approach into a budget win for safety. Multiple departments, including Transportation, Public Works & Police, submitted a coordinated Vision Zero budget request in 2015. This joint proposal highlighted the shared commitment to Vision Zero and was favorably reviewed by the city's budget committee, resulting in more funding being available for L.A.'s early Vision Zero efforts.



2. COLLECT, ANALYZE AND USE DATA

Being data-driven is an essential part of the safe systems approach of Vision Zero. This starts with collecting solid transportation safety data that reflects the basic factors in serious crashes: What happened? When? Where? Why? Involving whom?

Police are often relied on as a primary source of crash data, but they may face resource and training limitations that result in incorrect or under-reporting. No single agency should be counted on to provide traffic safety data – it requires a coordinated effort. One promising strategy currently being developed in San Francisco is combining data from hospitals and police.

Data should be used at all stages of Vision Zero strategizing to prioritize scarce funding and staffing resources and programmatic efforts. Understanding which locations and which behaviors lead to the most serious injury crashes is critical. Of course, this information should be balanced with local knowledge about certain areas or behaviors for which collisions go under-reported, and analysis should be adjusted for this.

Another promising, emerging strategy in this field is to use data to conduct predictive modeling, moving beyond simply reacting to past problems. This method proactively prioritizes safety interventions by analyzing locations with repeated problems and observing the characteristics of those crashes and sites, then applying that to sites throughout the city, even where serious crashes may not have happened yet.

Collecting, analyzing and using the right data will require a high level of coordination between different city agencies and partners. Data should impact not only initial priorities and resource decisions, but also the ongoing evolution and reporting of a Vision Zero program. How do we know if we're successful? What works best? How do various strategies rank? A Vision Zero effort will not be static, and its development will depend on using data to gauge impact over time.

Using Data to Maximize Decision-Making

When the city of Los Angeles adopted a Vision Zero resolution and dug into its data on traffic fatalities, it found that 65% of fatal crashes involving people walking occur on just 6% of city streets. This knowledge greatly informed a strategy for where to invest limited resources.

Similarly, the city of San Francisco's analysis highlighted that people walking and bicycling are over-represented in traffic fatalities and severe injuries (as is true in many cities), leading to efforts to focus more attention on improving safety for those road users, in particular. This included a successful local bond measure raising \$500 million in new funds for more roadway design improvements aimed at safety for those walking and bicycling.

And, greater understanding of what's happening where with greater granularity is also influencing the types of safety improvements made. A recent NYC Vision Zero analysis highlighted the locations where left-turning movements are most likely to cause serious harm, giving the NYC Dept. of Transportation the information they needed to take a data-forward approach to proactively address potential future problematic areas.

Elevating the usage of solid data in traffic safety decisionmaking recognizes that resources are (and will always be) finite, so prioritizing based on where attention will have the greatest impact goes a long way.

Making safety commitments based on data-proven needs also helped L.A. pass a sales tax measure in 2016 bringing in an estimated \$860 million/year for transportation improvements countywide.



3. PRIORITIZE EQUITY AND ENGAGEMENT

The Vision Zero approach to traffic safety presents both opportunities and challenges to the goal of advancing equity in our transportation systems.

Data analysis and public input should help clarify which community members and locations are being most severely impacted by unsafe traffic conditions. In many cities in the U.S., we see that some communities are systemically underserved by our current transportation systems and policies. This is particularly true for low-income people, people of color, children, senior citizens, people with disabilities, and people walking and bicycling – all of whom are impacted by traffic crashes at disproportionately high rates. At its best, Vision Zero's data-driven, systems-based approach can bring increased and overdue resources, action and political will to communities that have been neglected.

At the same time, Vision Zero can pose additional problems to a more equitable public realm. The same emphasis on a data-driven approach may seem to justify focusing traffic enforcement in certain neighborhoods that experience high levels of traffic crashes. These are often the same neighborhoods and involve the same communities experiencing the greatest tensions with police.

So, while our goal in Vision Zero is to increase safety from a transportation perspective, we run the risk of promoting over-policing with harmful impacts and contributing to the disintegration of trust between police and the communities they serve.

Strategies to better integrate equity into traffic enforcement could include community policing; an end to the “broken windows” approach; additional officer training; use of automated enforcement over officer-initiated enforcement; greater transparency of law enforcement's traffic stop data; diversion programs that focus more on education than punishment; and graduated/tiered fines for traffic violations, so that low-income people are not disproportionately burdened.

One way city leaders and advocates can sustain this long-overdue attention is to regularly include equity considerations on Vision Zero meeting agendas – not only in reaction to problems or criticism, but systematically and proactively, so that the topic is fully integrated into ongoing Vision Zero efforts advancing equity in transportation systems and all stakeholders are seeing equity as their responsibility.

City leaders must invite and encourage meaningful community dialogue about Vision Zero efforts, particularly from communities most affected, recognizing that these are also often the people without adequate time, resources, experience, or political access to advocate for these issues.

Considering and prioritizing equity early in the Vision Zero planning process and seeking the input of diverse voices, particularly those in the communities most severely impacted yet not traditionally influential in the traffic safety conversation, can help build a stronger, more inclusive effort.



Portland, OR: Ensuring equitable enforcement of Vision Zero

Ensuring that Vision efforts result in equitable outcomes is one of the most important challenges communities face. While equity is a complex topic that is affected by nearly every aspect of governance, applying serious thought to equity in the early stages of Vision Zero planning and implementation is especially important. This means accounting for equity in the high-level goals, principles and priority-setting of Vision Zero plans.

Portland, Oregon offers an example of addressing equity clearly and simply at the top level in the Vision Statement and Guiding Principles from its Action Plan:

- “
- The plan will be equitable. It will address the disproportionate burden of traffic fatalities and serious injuries on communities of concern, including people of color, low-income households, older adults and youth, people with disabilities, people with limited English proficiency, and households with limited vehicle access.
 - It will prioritize filling gaps in infrastructure where those gaps contribute to fatalities and serious injuries, or limit the transportation options of communities of concern.
- ”
- It will not result in racial profiling.

Equitable Vision Zero outcomes depend on more than serious acknowledgement in planning documents, of course. Follow-through is critical. Cities are finding that building trust through robust community engagement around Vision Zero is a vital strategy, particularly for communities who are not normally involved in traditional process. The cities of Los Angeles and Washington DC have set strong examples for new models of outreach and community partnerships that focus on underrepresented communities affected by Vision Zero plans.

People Killed While Walking by Income



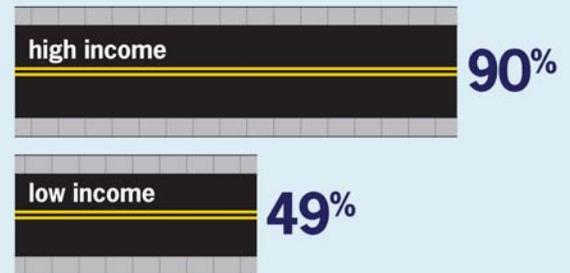
Governing, August 2014
© 2015 Safe Routes to School National Partnership

People Killed While Walking



Governing, August 2014
© 2015 Safe Routes to School National Partnership

Communities with Sidewalks



Bridging the Gap, Income Disparities in Street Features that Encourage Walking, 2012
© 2015 Safe Routes to School National Partnership

Source: Safe Routes to School National Partnership



Read more about equity and Vision Zero at visionzeronetwork.org/resources.

4. LEAD WITH ROADWAY DESIGN THAT PRIORITIZES SAFETY

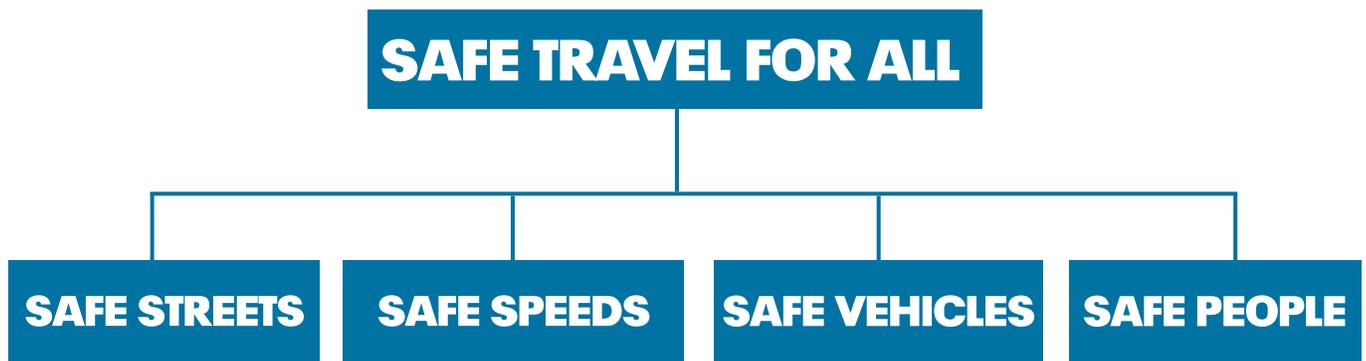


Modern traffic safety efforts have taken an approach that incorporates the fundamental “E’s” of Engineering, Education, Enforcement and Evaluation. While still useful (particularly as the E’s of Equity and Engagement are added), this framework obscures several important realities.

First, it is important to note that not all E’s are created equal. The action of physically designing (or re-designing) roadways to encourage safe behavior is paramount. This requires planning for a safe network for all modes of transportation, where design choices match intended behavior and context, and the most physically vulnerable users — people walking and biking — have contiguous, safe, and convenient infrastructure

Designers of streets must be willing to utilize all design tools available, and create new ones when necessary, to prioritize protection of human life above all else. Elected officials and other leaders must courageously support designs that prioritize safety, even when resistance arises due to non-safety concerns. Where physical separation is not possible between automobiles and vulnerable road users, such as people walking and bicycling, the speed differential should be lowered to such a degree that serious injuries are not likely from crashes.

Also, we must give greater acknowledgement to the power and potential of both speed management and to smart technology choices to advance safety.



5. MANAGE SPEED TO SAFE LEVELS

Managing dangerous travel speeds is not just an effective strategy but is a critical tenet of Vision Zero. Given the vulnerability of the human body, it is the force of a crash -- related to speed and weight -- that most determines the severity. Someone walking who is hit by a car moving at 20 mph has a 90% chance of survival, while that person only has closer to a 10% chance of survival if hit by a car moving at 40 mph.

If a community is serious about Vision Zero, active management of speeds should be a top engineering, policy, and legislative priority. There are three major ways to do this:

First, designing self-enforcing roadways that physically encourage safe speeds through traffic calming and geometric design (examples include narrower travel lanes, roundabouts, and speed humps). The physical design of a roadway is the first and most impactful way to encourage speeds at safe levels.

Second, setting and communicating safe speed limits. In a complicated, multi-modal environment, this means setting default speed limits at levels where severe injuries are unlikely when a car collides with a pedestrian - ideally 20 mph or less. This may require a change to some of the most established traffic engineering practices, such as setting speed limits at the 85th percentile of car movements, as well as legislative action. The time is long overdue to change outdated, detrimental policies such as this.

And third, enforce safe speed limits. Automated speed enforcement is a well-tested and proven strategy to encourage safe speeds. Cities such as Washington D.C., Chicago, NYC and many others across the world have effectively discouraged speeding via the use of safety cameras. A particularly timely benefit is that this technology can lessen the degree of police officer discretion required in making traffic stops, important at a time when concerns about equitable law enforcement is at a particularly high and troubling level. *(continued on next page)*

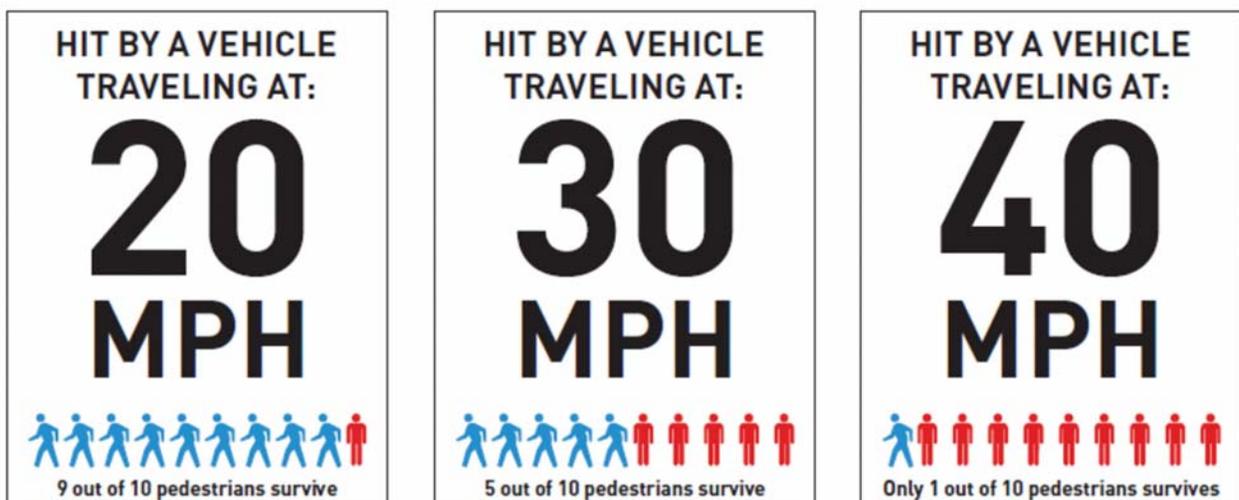


Image: Seattle Department of Transportation

There are important considerations in utilizing automated speed enforcement technology, mostly around privacy and equity (for instance, fines present a disproportionate impact on low-income populations). These are valid concerns and can and should be addressed in any safety camera program, but the value of automated enforcement in protecting lives is high enough that it should be integrated into Vision Zero strategies.

Simply put, communities will not significantly advance their Vision Zero goals if they do not directly and assertively manage speeds on their roadways. Vision Zero work that ignores speed management is merely playing in the margins of effectiveness.

It is understandable that major changes in speed management programs (such as lowering default speed limits and passing legislation to allow safety cameras) may not be the first public action a Vision Zero community undertakes upon its commitment. Building buy-in and iterative steps may come first. However, speed management must be part of the process. This may entail building a strong coalition and strategy to win state approval to utilize automated speed enforcement technology, or it may mean starting with lowering speed limits to 20 mph in school zones, near senior centers, etc. while building the case for a broader lowering of speed limits citywide.

Above all, it is essential that roadway designers be given a clear mandate and support from high-level leadership to prioritize safe speeds in their work.

RELEVANT EXAMPLES

Legislating Safe Speeds

Think a change in a relatively small number of miles per hour does not make a big difference in safety? Think again.



At 35 mph, a driver needs 100 more feet to react and stop in response to an unexpected event compared to 25 mph. And faster vehicles are deadlier – someone walking who is struck by a vehicle travelling at 30 mph is twice as likely to be killed as someone struck by a vehicle moving at 25 mph.

While there's no silver bullet to traffic safety, one message is undeniable: Speed kills. And more leaders are taking the initiative to manage speed, including lowering speed limits and using technology to encourage safe speeds.

Seattle, Washington and the State of Massachusetts passed laws in 2016 allowing lower speed limits as part of their Vision Zero efforts. And the City Council in Austin, Texas voted in late 2016 to lower its default speed limits from 30 mph to 25 mph on residential streets. But, Austin and most other cities considering such changes need approval from the state legislature to make this desire for safety a reality.

Engaging support for Vision Zero at the state level will be a major push for many of our communities in the coming years, but one well worth the effort. A 2016 study by the independent, nonprofit Insurance Institute for Highway Safety (IIHS) found that the effect of speed limit increases over the past two decades (1993 to

2013) have cost 33,000 lives in the U.S. As IIHS stated: "If Vision Zero is the destination, higher speeds are slowing us down."

We know that lowering speed limits and changing signage alone will not solve the problem, but these important steps are part of the solution, along with prioritizing context-sensitive roadway designs that encourage lower travel speeds, as well as using automated speed enforcement technologies.

Strategic deployment of automated speed enforcement (ASE) on high-injury locations has proven to be effective in influencing driver behavior in many cities, including the following:

In Chicago, within the first year of ASE, the number of speeding events recorded by each camera reduced by an average of 43%;

Washington D.C. had a reduction in drivers speeding more than 10 mph over the speed limit from 1 in 3 to 1 in 40 – and reported a 70% reduction in fatalities;

Since Seattle's fixed camera program inception in December 2012 to December 2014, the average number of traffic violations decreased by 64%;

New York City's speed camera program has had a positive influence on behavior. In 2013, NYC won the authority from the State Legislature to use speed cameras to deter speeding during school hours in a small share of the city's school zones. The program has proven effective at deterring speeding – the number of violations issued at a typical speed camera location declined by over 50%. However, 85% of the fatal and severe injury crashes which occur in NYC do not occur in school zones, during school hours. The City is now pursuing efforts to expand their present authority and use the program during the most dangerous places and hours of the day.

6.

MAXIMIZE TECHNOLOGY ADVANCES BUT DON'T OVERLOOK LOW-TECH SOLUTIONS

Undoubtedly, various technology advances have greatly benefitted safety on our streets, and the pace of technology promises even more improvements.

Innovations in automated and augmented vehicles are rolling onto the market and are expected to have major impacts over the next generation. These will have an enormous impact on how communities plan for infrastructure and safety. Autonomous and connected vehicles offer promising tools to reduce the role of human error in crashes. However, even under the best of circumstances, it's going to be several decades before the vehicles are ubiquitous, and many questions remain about how they will interact with people walking and bicycling. While much of the oversight and policy-setting will likely come from the state and federal levels, local policymakers should also voice their commitment to safety first in all such technical innovations. Non-motorists have benefited least from the past few decades of safety technology advances, and must be better prioritized if we are serious about Vision Zero.

And, in the rush to embrace new technology, we should not overlook lower-technology solutions. For instance, large vehicles — utility trucks, buses, and freight/logistics vehicles — are disproportionately responsible for traffic fatalities, particularly involving vulnerable users in multi-modal, urban areas. Treatments like side guards, cameras and mirrors on large vehicles and trucks, especially in urban areas, can reduce the consequences of crashes and are standard equipment in many parts of the world.



RELEVANT EXAMPLES

Inexpensive fleet technology improvements save lives

Discussions of technology and Vision Zero can quickly jump to autonomous vehicles, intelligent signaling systems, and other promising but high-cost and slower-to-implement improvements.

Encouragingly, cities are finding relatively easy safety wins with low-cost, easy-to-implement technologies too. This includes retrofitting existing vehicle fleets. In urban areas, large vehicles represent a small portion of total traffic but are disproportionately involved in fatal crashes, particularly when people on foot and on bikes are involved.

To help counteract some of the inherent dangers of large vehicles, cities including Boston, New York City and Seattle have established procurement procedures and policies that encourage systematically bringing municipal and contract fleets up to a higher standard of safety with driver trainings, side guards, and blind spot mirrors and cameras. These are relatively inexpensive, non-controversial and near-term improvements that are proven to save lives.

 **Read more about technology and Vision Zero at visionzeronetwork.org/resources**