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# SAFE STREETS: INSIGHTS ON VISION ZERO POLICIES FROM EUROPEAN CITIES

LEAH SHAHUM



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## SUMMARY:

Vision Zero — a Swedish concept developed in the 1990s that sets the moral imperative of eliminating traffic fatalities and severe injuries — is gaining traction in the United States. Cities from New York to Anchorage have moved in the last few years to adopt Vision Zero commitments and plans. There are, however, concerns that U.S. leaders could be moving to implement plans without sufficiently understanding the fundamental principles that make Vision Zero transformative and successful. Drawing on the Swedish, Dutch, and German experiences, this report aims to better understand the European experience with Vision Zero policy in order to inform a substantive and effective adoption in the United States. It proposes a set of policy recommendations for how U.S. cities can move from good intentions to actual actions that result in ensuring safe mobility for all.

### About the Author

Leah Shahum is the founder and director of the Vision Zero Network, a national nonprofit campaign supporting cities working toward Vision Zero — zero traffic fatalities and severe injuries. The Network helps communities develop and share best practices for safe mobility for all road users. Prior to that, she was the executive director of the 10,000-member San Francisco Bicycle Coalition, which promotes bicycling for everyday transportation. Leah formerly served on the Boards of Directors of the Golden Gate Bridge, Highway & Transportation District, and the San Francisco Municipal Transportation Agency.

### About the Urban and Regional Policy Fellowship

The Urban and Regional Policy (URP) fellowships provide opportunities for practitioners and policymakers working on economic and social issues at the urban and regional policy levels to meet with their counterparts across the Atlantic and discuss policies and measures that have been implemented. URP fellows are generally civic leaders who are engaged in targeted policy areas with an interest in gaining an understanding of how these issues are approached in a culture other than their own and an ability to apply lessons learned to their own community. Past grantees have included representatives from state, local, and regional governments and leaders from the media, non-profit, and philanthropic communities. The URP fellowship is not intended to support academic research.

## Executive Summary

***“This is very much a man-made disaster. This is not some mysterious bug ... More political will is needed. More action is needed. It’s just a question of how long we are going to let this go before we take political action.”***

The setting for this statement<sup>1</sup> was a June 2015 conference in Gothenburg, Sweden, where more than 170 people from dozens of nations contemplated how to advance Vision Zero — a traffic safety philosophy that boldly proclaims that no one deserves to die in traffic and that society can and must keep its community members safe while moving about.

No one could dispute Krug’s choice of the word “disaster,” given the fact that more than 1.25 million people are killed around the globe each year while walking, bicycling, taking transit, or driving, according to the World Health Organization. For American leaders at the conference, the scale of the tragedy was even more substantial than recognized at the time. By the end of 2015, 35,092 people would have lost their lives in traffic violence in the States, ending a five-decade trend of declining fatalities, with a 7.2 percent increase in deaths from 2014.

It is Krug’s designation of this worldwide catastrophe as “man-made” and his emphasis on the need for political action that make his comments stand out. As demonstrated in this report, these are two fundamental principles that American leaders committed to Vision Zero need to acknowledge and incorporate into their efforts in order to succeed. Without integrating these two concepts deeply into their Vision Zero activities around the country, U.S. communities risk perpetuating the tragic loss of life and hardships, creating ineffective policies, wasting resources, and eroding public trust.

<sup>1</sup> Etienne Krug, World Health Organization (WHO), Director of the Department for Management of Noncommunicable Diseases, Disability, Violence, and Injury Prevention

This report aims to understand and leverage the European experience with Vision Zero policy (and related efforts with different names) to inform the fast-spreading adoption of Vision Zero in the United States, particularly to shape it to be substantive and effective. One key question remains: *How do communities move from intentions to actions that result in ensuring safe mobility for all?*

## Background and Methodology

My own experience with Vision Zero started in early 2014 as the executive director of the San Francisco Bicycle Coalition, a nonprofit group with 10,000 members promoting bicycling as an everyday mode of transportation. Though successful in improving and growing bicycling in the city, we were still experiencing far too many deaths and severe injuries on our streets, particularly among people walking and bicycling, at the same time that the city was aiming to grow those transportation modes.<sup>2</sup> It became increasingly clear that we needed a new way to think about, talk about, and act on the issue of ensuring safe mobility for all. We also needed a concept that would unite public, private, and community leaders around the issue and encourage meaningful collaboration and policy action.

That new way was Vision Zero, a Swedish concept developed in the late 1990s to reduce fatalities and injuries to zero. New York City became the first U.S. city to commit to the goal of Vision Zero in January 2014, aiming to eliminate traffic fatalities and severe injuries among all road users within ten years. Inspired by New York City’s leadership and impelled by a particularly high year of traffic deaths in our own city, the San Francisco Bicycle Coalition partnered with fellow nonprofit Walk SF to convince San Francisco leaders to become the second U.S. city to adopt Vision Zero in early 2014.

After San Francisco adopted the policy, a surprising number of requests arrived from government and community leaders in other cities asking how this policy could be adopted in their communities. After just one year, a Swedish concept that had been unknown by most in the United States was suddenly garnering significant media attention and being embraced publicly by influential local leaders.

<sup>2</sup> San Francisco Municipal Transportation Agency, “2012 San Francisco State of Cycling Report,” August, 2012.

Yet, alongside these developments also grew concerns that American leaders could be jumping on the bandwagon without sufficient understanding of and commitment to the fundamental principles that make Vision Zero transformative and successful.

As an Urban and Regional Policy Fellow at The German Marshall Fund of the United States, I spent eight weeks in Europe in the Spring of 2015 studying key lessons learned about Vision Zero, the Dutch version called Sustainable Safety, and other related efforts. Specifically, I studied the experiences in Stockholm and Gothenburg, Sweden; Rotterdam and Amsterdam, the Netherlands; and Berlin, Germany.

The focus of my research was to identify lessons learned from European experiences to outline the core philosophy of Vision Zero and suggest policy recommendations that will help turn well-meaning intentions into effective actions that save lives.

My research consisted of meeting with and interviewing a wide range of policy experts and practitioners in the three countries, including government staff at the local, regional, and national levels; representatives of nongovernmental organizations; and those in private industry. I participated in the Towards Zero Conference in Gothenburg, Sweden, where I learned from traffic safety experts from around the globe.

Responding to the tremendous interest in U.S. communities across the country, I launched the Vision Zero Network, a nonprofit project aimed at building the momentum and advancing this shift toward safe, healthy, equitable mobility for all. Focusing initially on leading-edge cities demonstrating commitment and potential, the Network brings together local leaders in health, traffic engineering and planning, police enforcement, policy, and advocacy to develop and share winning strategies and to support strong, distributed leadership for policies and practices that make Vision Zero a reality in communities across the nation.

## Research Goals and Conclusions

This report defines the basics of Vision Zero and draws on specific examples and strategies European cities use to show what a commitment to a new way of thinking can achieve in ensuring safe mobility.

Vision Zero's proven success in nations such as Sweden and its future promise in the United States rests less on developing new, specific technical tools and more on the right approach and philosophy, as well as the right levels of political buy-in and community engagement. While reaching Vision Zero will take some degree of technical and practical skills, its success rests far more on strong political commitment and follow-through.

The greatest opportunity that Vision Zero offers is a framework to elevate political commitment and public buy-in to prioritize safety on our streets and to shift cultural attitudes and behaviors that will result in a safer society. U.S. cities serious about advancing Vision Zero will benefit by acknowledging this premise early and embracing it fully.

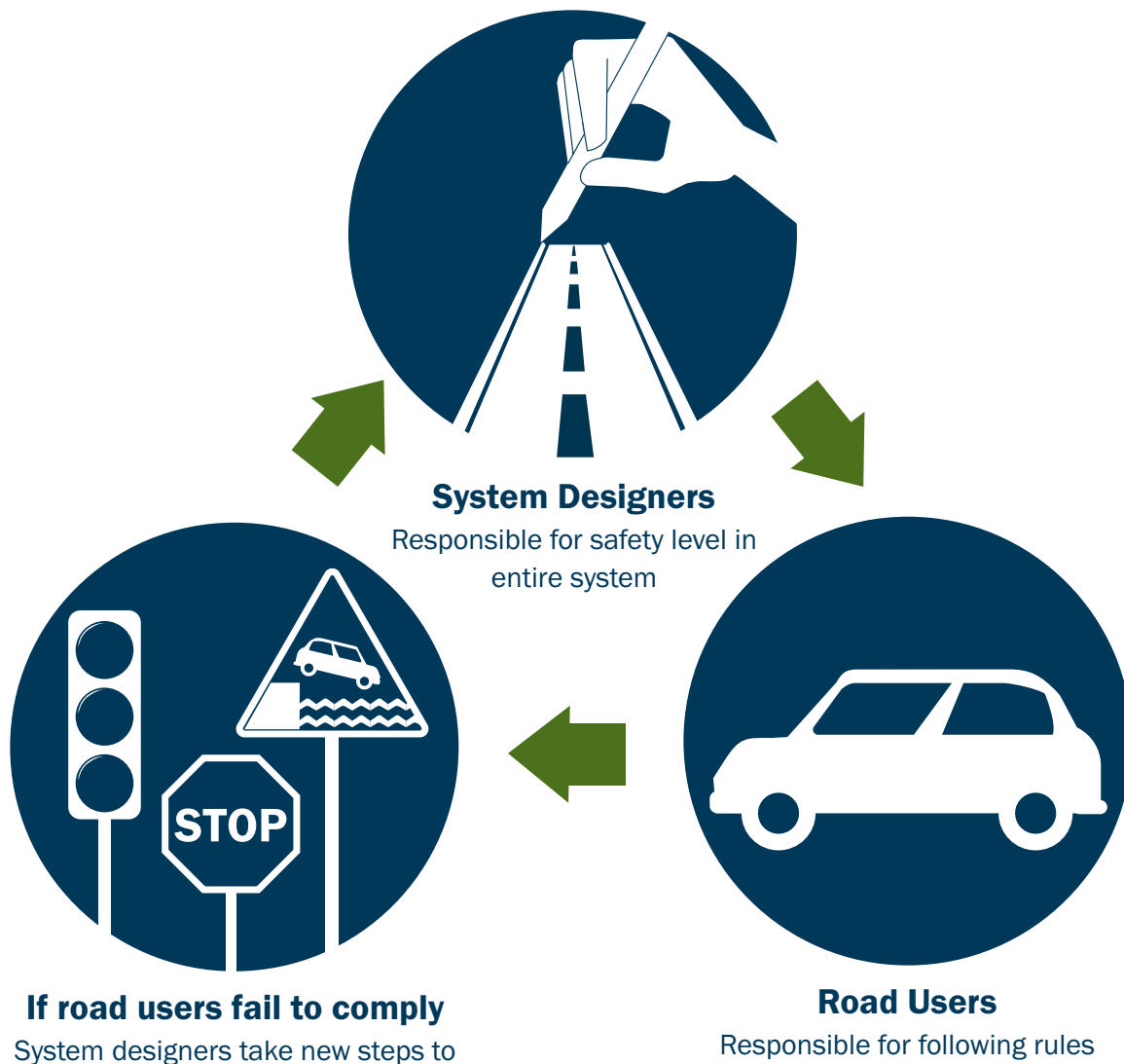
## What is Vision Zero?

Vision Zero is a philosophy advanced first in Sweden in the late 1990s and based on the ethical imperative that no one should be killed or seriously injured within the transportation system.

"Life and health can never be exchanged for other benefits within the society," states Claes Tingvall, one of the original architects of Vision Zero in his role as then director of the Swedish National Road Administration.

Yet, before Vision Zero, this exchange is what most communities have been allowing. Most modern societies have chosen, whether consciously or not, to prioritize speed and convenience (or perceived convenience) above safety and health in many instances. Tingvall calls traditional traffic policy a balancing act between mobility benefits and safety problems. Vision Zero holds that these values are non-negotiable and that we can refuse to sacrifice human life and health in the balancing act.

# Vision Zero Ethical Platform



An important tenet of Vision Zero recognizes that traffic crashes cannot be totally avoided because human beings are inherently fallible and will make mistakes. Vision Zero builds upon the known threshold at which the human body can withstand a certain level of external violence (i.e., a crash) without being severely injured or killed. “The body has crash tolerance limits; they should not be exceeded,” says Tingvall, explaining a core principle of Vision Zero.

The expectation is not to achieve a crash-free society, but rather to ensure that crashes are survivable. As Tingvall explains, a safe intersection is not an intersection free of crashes, but rather an intersection where no crash will lead to a serious injury. In fact, a

safe intersection may be one where more crashes occur; but crashes without serious health impacts are not a safety problem, only a cost — an important distinction when considering strategies, policies, and prioritization of scarce resources.

Rather than denying the inevitability of human failure that will result in some crashes, Vision Zero holds that, in fact, we should design the transportation system based on this inevitability.

A second tenet of Vision Zero focuses on where responsibility for traffic safety lies. According to the Swedish Transport Administration, “Those who design the road transport system bear the ultimate



responsibility for safety: road managers, vehicle manufacturers, road transport carriers, politicians, public employees, legislative authorities, and the police. It is the responsibility of the individual person to abide by laws and regulations.”

Vision Zero outlines areas of responsibility. First, the designers of the system are ultimately responsible for the design, operation, and use of the road transport system and thereby responsible for the level of safety within the entire system. Second, road users are responsible for following the rules for using the road transport system set by the system designers. Finally, if road users fail to obey these rules due to lack of knowledge, acceptance, or ability, or if serious injuries occur, the system designers are required to take necessary further steps to counteract people being killed or seriously injured.

While Vision Zero sees value in education and enforcement efforts, the concept places the greatest emphasis on system-level efforts that have more influence on individual behavior, including roadway designs, policies, and technologies that prioritize safety. First and foremost, the underlying systems in the built environment and in vehicles should be made inherently safe by system designers.

As reported, particularly in the background section on Sweden, the Vision Zero philosophy is proving successful and saving lives.

Traditional Approach	Vision Zero Approach
Focus on accidents	Focus on fatalities and serious injuries
Perfect human behavior	Integrate the failing human in design
Individual responsibility	Shared responsibility between system and design
Industry must be forced	Industry can be stimulated
Saving lives is expensive	Saving lives is cheap

## Why Now?

Vision Zero has seen a meteoric rise of interest and corresponding policy and legislative action in the United States in a relatively short time. Just three years ago, most people in the United States had never heard of Vision Zero and probably would not have taken seriously its goal of reaching zero traffic deaths and severe injuries. Mayors, police chiefs, transportation directors, and community leaders in more than 20 cities and a few counties have made Vision Zero commitments to ensure safe mobility for all people moving about their communities. Many more are actively considering Vision Zero policies.

New York City’s advocacy and political leaders were the first in the United States to embrace Vision Zero when in January 2014 then Mayor Bill de Blasio committed his administration to eliminating traffic fatalities and severe injuries by 2024. This bold commitment was made after well-organized advocates had laid the groundwork for years, setting out Vision Zero priorities and strategically injecting them into the mayoral campaign.

The most common questions among local Vision Zero leaders today are: How do we reach zero? How does Vision Zero differ from the traditional approach to traffic safety? What did Sweden and other nations do to dramatically reduce their traffic fatalities? How do we sustain and institutionalize these efforts?

Not surprisingly, the reality is that there is no one-size-fits-all approach to Vision Zero. And, it must be acknowledged from the start that significant cultural, political, and legal differences exist between U.S. communities and Sweden, the Netherlands, and Germany.

This report concludes that Vision Zero consists, fundamentally, of a philosophy and core principles — more than prescriptive tactics — that are essential to its integrity and success in ensuring safe mobility. The following section builds on this by describing the experiences of several European cities in adopting and evaluating their Vision Zero policies.

## Sweden, the Netherlands, and Germany

The original intent of this research was to compare local efforts in Europe with local efforts in the United States. That approach has been broadened, recognizing that Vision Zero efforts in places such as Sweden and the Netherlands have been initiated predominantly at the national level, unlike in the United States where the opposite is true. Still, in all of the nations studied — and certainly even more so in the United States — local-level leadership, both within and outside government, has proven important.

The difference in the European nations' more top-down approach, particularly in Sweden and the Netherlands, versus the United States' more ground-up approach is not surprising given that these European political systems are based on a more top-down structure and policy efforts are coordinated at the national level. In these smaller nations (both in terms of land and populations), there is a tradition of less diversity of political beliefs and approaches across regions within the same country, as is the case in the United States. Still, it is worth noting that in some cases the coordination, policy-setting, and leadership at the European Union level could be considered analogous to the U.S. federal level versus state-level leadership.

Communities in the United States should not be discouraged by some differences in approach in terms of which level of government initiated and led key Vision Zero efforts. The policy recommendations at the end of this report illustrate clear ways that local leaders in the United States can exercise (and in some cases already are) similar approaches as the national-level policymakers in European Vision Zero countries. Where this is not the case, opportunities exist for local leaders both within and outside government to influence the state and federal leadership to move in a direction to advance Vision Zero.

Some approaches toward Vision Zero will look different in the United States than in Europe, but the underlying principles and philosophy remain the same and essential.

## Sweden

As the birthplace of Vision Zero, Sweden is also the nation that has been working most consistently and assiduously toward it and is most associated internationally with the concept. Many credit the successful introduction and adoption of Vision Zero in Sweden to the timing of new and proactive leadership at the national level in the 1990s. This included a new minister of transport, Ines Uusmann, whose prior experiences involved the issue of workplace safety, and a new director of the Swedish National Road Administration, Claes Tingvall, who is credited as the key figure in first introducing the concept in 1995 during the development of a new national traffic safety policy.

Sweden had specified quantitative targets for road safety since the late 1980s. As they were experiencing a long plateau in traffic death reduction, the national government committed to take a fresh look at the problem of deaths and injuries on the roads. The two new national leaders agreed that Sweden should lead with an approach based in ethical and human values, rather than with traditional economic concerns and cost-benefit analyses. This was a notable shift. The new approach, Vision Zero, holds that ultimately no one should be killed or seriously injured by the road transport system.

The leaders consciously built upon the public's existing understanding of Vision Zero-style principles (though not named such yet) in the realms of health and safety in the workplace and in the aviation and nuclear industries. In those realms, there was already agreement that safety and health must be prioritized as paramount to other considerations. There was no reason, the leaders contended, that these same principles should not apply to the road environment too. This was a significant departure from past thinking.

In 1997, the Swedish Parliament adopted the nationwide policy of Vision Zero with support from all political parties. There was apparently relatively little political debate, partly because no one could reasonably argue with the ethical basis of Vision Zero and partly because the initial discussions did not include detailed measures about specific, proposed actions, such as speed limitation or roadway design changes.

After passage, government leaders focused on shifting mindsets to support the basic concepts of Vision Zero, particularly emphasizing the responsibility of roadway designers to create inherently safe systems, as part of the basis of shared responsibilities. Vision Zero champions focused on educating and building buy-in from policymakers. In the formative stages, Sweden's Vision Zero was not (and still is not) about assigning blame or finger-pointing, but rather about teaching stakeholders how they influence outcomes, based on facts and data.

"We, of course, tried many ways to 'get through' and what we learnt was that different people react on different things," said one Swedish expert who has been involved in Vision Zero efforts since its early days. "Going through the heart worked sometimes but not with all. Going through the brain worked then."

Acceptance was broad but not universal. There were skeptics and even opponents, particularly among the "old guard" transportation professionals and some in the private sector. The resistance, though, was not overwhelming. In large part thanks to the high-level commitment of influential national leaders, there was — and has continued to be — generally widespread bureaucratic and political acceptance of Vision Zero in Sweden.

Building on this, the idea started to spread to citizens and organizations working in related fields. The message from government to those outside, according to one Swedish expert, was that the current situation of traffic deaths and injuries is not acceptable. "You can demand more. You are a citizen with rights. And you have a right to be safe in road traffic."

## *By the Numbers: Traffic Safety in Sweden<sup>3</sup>*

Sweden's Vision Zero efforts are proving successful with a significant reduction in the number of road deaths, despite an increase in traffic. Between 1990 and 2014, the number of road fatalities decreased by more than 65 percent. The number of injury crashes was reduced by 22 percent. Swedish authorities explain this variation as

better reporting of injury crashes in recent years and a stronger focus on reducing the most severe crashes, or fatalities.

It is worth noting that these declines in deaths and injuries were achieved at the same time that trips increased significantly. Between 1990 and 2014, the number of motorized vehicles in Sweden increased by 32 percent and the overall vehicle kilometers driven rose by 23 percent.

Since 1990, the death rate per 100,000 inhabitants in Sweden has decreased by 70 percent, while the number of vehicles has increased by 18 percent. In 2013, the traffic fatality rate reached a record low of 2.7 deaths per 100,000 inhabitants. Compare this with the U.S. fatality rate, which is just over 11 deaths per 100,000 inhabitants.

## *The Netherlands*

The Netherlands' approach to traffic safety is called Sustainable Safety. Like Vision Zero in Sweden, the main goal of Sustainable Safety is to develop an "inherently safe road traffic system." It also acknowledges that the human body can only take so much impact in a crash without experiencing severe injuries.

Adopted in 1991, Sustainable Safety was not a sudden change in policy for the Netherlands but rather developed out of a historical context in which road safety had high political priority with national goals for reducing traffic fatalities by 25–50 percent. This stemmed partly from strong, effective grassroots movements touting livability, neighborhood safety, and anti-gentrification efforts. Earlier transportation safety plans included "spearheads," or focus areas, for safety improvements, including alcohol, speed, hazardous locations, children, the elderly, and safety devices.

In the early 1990s, policymakers realized that this spearhead approach alone could not be successful, partly because this was not effective in addressing problems at their source (or at a higher systems level). The introduction of Sustainable Safety emphasized the need for "a preventive, structural, and enduring approach." The goal was to move from being reactive to proactive.

3 International Traffic Safety Data and Analysis Group (IRTAD) of the Organization for Economic Co-operation and Development (OECD) and the International Transport Forum, "Road Safety Annual Report 2015."



Thereafter, the national-level research institute SWOV/Institute for Road Safety Research took the lead in elaborating the vision into principles and guidelines for road authorities. A steering committee for Sustainable Safety was created with representatives from different levels of government, and this committee was charged with developing an implementation strategy for Sustainable Safety at the national level.

One of the early, winning strategies of Sustainable Safety, Dutch experts say, was the use of local demonstration projects to test ideas and build longer-term buy-in among the public and politicians. This start-up program included 24 actions that were agreed upon by government leaders at all levels.<sup>4</sup> Between 1998–2007, many actions were taken to improve road infrastructure safety, most notably the categorization of road networks and lowering of speeds, including the designation of 30 kmh (18.6 mph) and 60 kmh (37.3 mph) areas. Another major investment was the construction of more than 2,300 roundabouts. Together, these measures are estimated to have prevented between 120–145 fatalities each year nationwide. Also, regional traffic enforcement teams were established to increase enforcement efforts, along with public campaigns focused on dangerous behaviors, particularly drunk driving and seat belt use.

The Dutch designate five principles of Sustainable Safety,<sup>5</sup> which are also design principles applying a pragmatic hierarchy to their roadway design.

### Five Principles of Sustainable Safety in the Netherlands

**Functionality** of roads: Monofunctionality of roads as either through roads, distributor roads, or access roads, in a hierarchically structured road network

**Homogeneity** of mass and/or speed and direction: Equality in speed, direction and mass at medium and high speeds

**Predictability** of road course and road user behavior by a recognizable road design: Road environment and road user behavior that support road user expectations through consistency and continuity in road design

**Forgiveness** of the environment and of road users: Injury limitation through a forgiving road environment and anticipation of road user behavior

**State Awareness** by the road user: Ability to assess one's task capability to handle the driving task

### By the Numbers: Traffic Safety in the Netherlands<sup>6</sup>

Today, the Netherlands' road network is among one of the safest in the world, with 3.4 traffic fatalities per 100,000 inhabitants. Between 2000 and 2013, the traffic death rate, measured in terms of deaths per 100,000 inhabitants, fell by 54 percent.

Between 1990 and 2013, the number of traffic fatalities in the Netherlands decreased by 61 percent. More recently, from 2000–13, the number of fatalities fell by 51 percent. As in Sweden, the number of seriously injured developed less favorably than the number of fatalities.

<sup>4</sup> Weijermars and Wegmann, 2011

<sup>5</sup> Institute for Road Safety Research, SWOV Fact Sheet.

<sup>6</sup> International Traffic Safety Data and Analysis Group (IRTAD) of the Organization for Economic Co-operation and Development (OECD) and the International Transport Forum, "Road Safety Annual Report 2015."

The chance of a fatal crash per one thousand million vehicle kilometers was nearly halved between 1997–2006 (from 11 to 6.1 per 100,000 people), despite an increase in mobility. As in Sweden, the decrease in traffic fatalities and injuries in the Netherlands was achieved at a time that the number of trips was increasing. Between 1990–2013, the number of motorized vehicles increased by more than 60 percent and the overall vehicle distance travelled by more than 30 percent.

## Germany

Of the three nations researched, Germany had the least developed program relating to the principles of Vision Zero. While it uses some of the same strategies, and some high-level administrators, especially in Berlin, support the idea, Germany does not have an overarching public commitment to Vision Zero or to a similar concept.

Berlin was chosen as a focus of this research partly because its local government adopted a Charter for Road Safety in 2010, declaring that no traffic crash should occur on city streets leading to serious injury, similar to a Vision Zero pledge though not labeled explicitly as such. Berlin and Germany, overall, have seen significant improvements in traffic safety.

In 2011, the German Federal Ministry of Transport, Building and Urban Affairs launched the 2011–20 road safety program, which aims to enable safe, ecologically sensitive, and sustainable mobility for all road users. It has a wide range of road safety measures addressing users, vehicles, and infrastructure. The target for 2020 is a 40 percent reduction of traffic fatalities nationally.

Most people interviewed for this report expressed less confidence in the government's commitment to prioritizing traffic safety goals than was the case in interviews in Sweden and the Netherlands. As one person explained (and was echoed by others), Germany has a hierarchical system described as "old guard" which generally prioritizes smooth car flow over other factors, including safety. Another interviewee described a general desire for less car traffic and associated environmental, noise, and safety problems, but said that change is difficult because many decision-makers identify strongly as motorists and do not want to do anything perceived as making

driving more difficult. Interviewees continued that cars are seen as more of a status symbol in Germany than other European nations. These are challenges that most U.S. communities can relate to today.

Interviewees explained that more politically controversial traffic safety changes have been affected "through the back door" by leading with arguments of environmental sustainability, noise reduction, or general quality of life issues. For instance, even Germany's largely successful efforts toward managing speed in urban areas have focused not on safety but rather on reducing the output of unhealthy car exhaust. Apparently, an exception to this is around school zones, where the safety argument holds more weight. Similarly, Berlin's success in creating a low-emission zone in its city center has reduced car use and improved overall traffic safety, but it was sold politically and publicly on the argument of environmental sustainability more than safety.

## By the Numbers: Traffic Safety in Germany<sup>7</sup>

Germany, along with being the largest country in Europe with 80.5 million residents, is also one of the world's most highly motorized countries, and motor vehicle occupants account for the large majority of traffic fatalities.

Despite being a highly motorized nation, Germany still ranks considerably higher in its traffic safety rate, compared to the United States, with Germany's traffic death rate at 4.1 per 100,000, compared to more than 11 in the States. In Germany, since 1991, the death rate per 100,000 inhabitants has decreased by more than 70 percent.

Between 1991–2013, the number of traffic fatalities decreased by 70 percent, whereas the number of injury crashes fell by 24 percent. In more recent years (2000–13), the number of fatalities decreased by 55 percent, while the number of seriously injured decreased by 37 percent.

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<sup>7</sup> International Traffic Safety Data and Analysis Group (IRTAD) of the Organization for Economic Co-operation and Development (OECD) and the International Transport Forum, "Road Safety Annual Report 2015."

Again, similar to Sweden and the Netherlands, these increases in safety cannot be explained by fewer trips, as between 1991 and 2013, the number of motor vehicles in Germany increased by 21 percent and vehicle kilometers driven rose by 26 percent.

## Working Toward Zero: Strategies Employed in Europe

The following section highlights the most noteworthy high-level strategies pursued in Sweden and the Netherlands and, to a lesser degree, Germany, in order to achieve the positive results in making progress toward their safety goals.

There was a resounding consistency in responses from experts and practitioners in all three countries when asked what the top factors have been in improving their nations' transportation safety. These include managing speed through intuitive roadway design, safe speed limits, and automated enforcement; investing in safe road environments to manage speed differentials between road users (walking, bicycling and driving); promoting safe vehicles and leverage consumer demand for safe vehicles; building leadership and commitment, both in the public and private sectors; and setting ambitious yet realistic goals, then investing in regular measurement

**“ Controlling travel speeds  
is as a critical foundation  
of Vision Zero. ”**

### Manage Speed

“It’s the speed that kills,” said one prominent Swedish Vision Zero leader. This was a theme shared consistently during interviews in all three nations. Vision Zero starts with the basic premise that the level of severity of a traffic injury is directly related to the force of the crash and the resulting impact on the human body. Controlling travel speeds is therefore recognized not simply as an effective strategy but as a critical foundation of Vision Zero.

A Vision Zero approach holds that speeds must be limited to a level commensurate with the inherent safety of the road system. This rests primarily on three things employed together: how a roadway is

designed to encourage or discourage certain levels of speed; what limit is officially set and how that is communicated; and how that speed level is enforced.

**Designing Roadways for Safe Speeds.** This entails physically designing new streets, or redesigning existing streets, to encourage an appropriate — and inherently safe — level of speed for users. For instance, a street in a rural area that is intended to move only cars (i.e. does not have crossings for people walking or bicycling and no activity centers reachable by foot or bike) would have a different design that allows for higher speeds than one in an urban area where interactions between people walking, bicycling, and driving are expected and encouraged.

Roadway design to influence speeds can entail many different, well-proven elements: the width of travel lanes (narrower lanes encouraging lower speeds); radius of turns (tighter turning radii encouraging lower speeds); raised crosswalks and corner bulb-outs (designed to slow drivers' speeds where people are expected to cross on foot and bike), and the use of well-designed traffic circles over traffic stop lights (circles encouraging lower speeds).

**Setting Speed Limits at Safe Levels.** Where motorized traffic mixes with people walking and bicycling and where there is possibility of high-injury conflicts, the speed limit must be low enough to minimize the severity of inevitable crashes.

So what is a safe speed? According to Dutch experts, safe means that 90 percent of crashes at that speed will cause no serious injuries.

As part of their national goals to reduce severe traffic injuries, all three countries studied in this report led concerted and successful efforts to significantly lower speed limits across the nation. Recognizing that someone walking or bicycling is physically vulnerable if hit by a car — and increasingly so as speed increases — Vision Zero countries build on the premise that vehicle speeds must be restricted to 30 km/h (18.6 mph) where there are potential vehicle-pedestrian/bicyclist conflicts or, alternatively, cars and people walking and biking should be physically

separated — in effect, in most urban areas. Dutch research shows that there would be 25–30 percent fewer injuries from crashes in the Netherlands if all motorists kept to the official speed limits. The Dutch seem to more consistently link investments in physical, on-street traffic calming devices to reinforce lowering of speed limits. For instance, in many cases, the central government requires local governments to pair the lowering of speeds with specific, coordinated roadway designs, such as raised speed humps, raised intersections, and clear signage to physically encourage lower speeds. These obviously raise the price tag but are proven to be more effective in influencing behavior.

#### *Speed Limits (km/h, mph)<sup>8</sup>*

	Sweden	Netherlands	Germany
Locations with possible conflicts between pedestrians and cars	30 km/h 18.6 mph	30 km/h 18.6 mph	30 km/h 18.6 mph
Intersections with possible side impacts between cars	50 km/h 31 mph	50 km/h 31 mph	50 km/h 31 mph
Roads with possible frontal impacts between cars	70 km/h 43 mph	70 km/h 43 mph	70-100 km/h 43-62 mph
Roads on which side or frontal impacts with other road users are impossible	100+ km/h 62+ mph	100+ km/h 62+ mph	130+ km/h 81+ mph

Notably, this linkage of consistent messaging about desired speeds is reinforced by various partners. According to interviews, the local Dutch police generally commit to enforcement efforts if they deem the speed limit in that area to be “credible” based on the street design, meaning that they discredit locations where the street design encourages a higher speed than the established speed limit. This could be a particularly motivating factor for street designers and enforcement officials to work together.

**Use of Automated Enforcement.** Studies have shown speed enforcement detection devices to be particularly effective interventions for reducing the number of road traffic injuries and deaths.<sup>9</sup>

8 Tingvall and Haworth, 1999; Wegman 1998; <https://www.angloinfo.com/how-to-germany/transport/driving/types-of-roads>

9 Elvik and Vaa, 2004; Wilson et al., 2006; Cameron and Delaney, 2006; Cameron, 2008

International review studies report that speed cameras reduce approximately 20 percent of personal injury crashes on road sections where cameras are used. Some Swedish experts consider that to be relatively conservative, estimating closer to 50 percent reduction in traffic fatalities related to automated speed enforcement. Some U.S. cities have shown up to 70 percent decrease in fatalities.

Unlike in the United States, where the use of automated enforcement is left largely to a state-by-state decision (and a contentious one in most places), in the countries researched here the top-level national government provided the leadership to employ the well-proven systems.

In 2006, the Swedish National Road Administration and National Police Board jointly launched a large-scale speed camera program, or as it is called there, a road safety camera program. Initially about 600 hundred cameras were installed — today there are about 3,000. Yet, perhaps surprisingly, the number of tickets issued is relatively few — about 200,000 per year nationwide. This is partly because much of the time the cameras are actually turned off and intended as a speed deterrent.<sup>10</sup>

The Swedish messaging and effective marketing campaigns reflect their different approach. Instead of speaking punitively about “reducing speed,” they communicate the goal of “increasing compliance” for safety, a more positive, proactive approach.

According to national surveys in Sweden, the safety cameras today garner support from 70 percent of the population, a number that has grown significantly over time. Speed limit compliance on the stretches with cameras has increased from 50–90 percent, according to interviews. Swedish leaders say plans exist now to expand the camera program particularly within cities, where they have been less prevalent so far.

In the Netherlands, conscious of the likelihood of political and public resistance to enforcement cameras and of the need to build support, leaders

10 Vision Zero designers contend that everyone should know where the cameras are located and voluntarily adjust their speed accordingly. Note that this is unlike many systems in Australia and the States, which are more commonly mobile and covert, and which Swedish experts suggest prompt greater controversies, including criticisms that the cameras’ main purpose is revenue generation rather than safety and other perceptions of unfairness and privacy concerns.



of Sustainable Safety chose to start the process of lowering speeds in the areas where stronger support existed: in school zones and neighborhoods. In these areas, they accurately estimated that people could relate to the problems of congestion around schools, particularly given that there were not school bus systems functioning since so many kids walked, and people could relate to wanting safety in their own neighborhoods.

The Dutch, like the Swedes, take the approach of informing road users of cameras' whereabouts, citing a more effective impact in behavior change than covert cameras. As in Sweden, there is generally public support for this approach amongst the Dutch. A 2010 survey of Dutch drivers showed that a majority find the following acceptable to very acceptable: speed cameras (73 percent), average speed checks (69 percent), and stopping drivers (77 percent). Less than half of all drivers consider hidden police cars (44 percent) and the use of laser guns (43 percent) acceptable methods of enforcement.<sup>11</sup>

## Invest in Safe Road Design

Connected to the principle of speed management in Vision Zero is the importance of investing in roadway design, particularly to manage for speed differentials between different road users. A Vision Zero approach holds that vulnerable road users — walkers and cyclists— should not be sharing the same unregulated space with motor vehicles moving at speeds exceeding 30 km/h (18.6 mph). An example is at intersections in urban areas where separated bikeways and sidewalks both merge into shared space with roadways with cars. Here, designers place special emphasis on using physical devices (roundabouts, raised crosswalks, and corner bulb-outs) to slow drivers' movement to speeds closer to those walking and biking through the intersection.

In Sweden, the example most often cited by experts as successful is the 2-to-1 conversion of adding median barriers to separate head-on auto traffic. This strategy has been highly effective and cost-efficient, with analysis showing it reducing fatal crashes by 80 percent. Today, thousands of kilometers of roadways have the design. Though the 2-to-1 road design did not significantly decrease the *number* of crashes, it

did significantly reduce the number of severe and fatal crashes — an example of Vision Zero's focus on *injury* prevention rather than crash prevention. This strategy predominantly improved safety for in-car occupants in non-urban areas, having relatively little impact on movement in cities or on people walking and bicycling. Overall, it is cited as a main factor in lowering overall injury and death rates in Sweden.

Another design feature highlighted in interviews was the increased use of roundabouts, or traffic circles, in both Sweden and the Netherlands. While these were not new in those nations, their usage grew with the introduction of Vision Zero and Sustainable Safety. They have proven to calm traffic by discouraging high speeds and "softening" the angle of crashes when they do happen. This is another example of Vision Zero's focus on preventing serious injuries, not all crashes.

In urban areas where there is more mixing of people moving at different speeds — particularly more physically vulnerable road users walking and bicycling — these countries have prioritized either lowering auto speeds to more consistent levels or, where that proves challenging, to physically separate the different modes for safety.

## Promote Safe Vehicles

Sweden's two major carmakers, Volvo and Saab, have a reputation for being international leaders in safety and are more integrated into the country's traffic safety efforts than most others. As an example, Volvo set a public goal to have zero deaths or injuries in its new cars by 2020. They prioritize advancing "smart" safety functions in its vehicles, particularly seat belt interlocks, alcohol interlocks, and intelligent speed limiters.

Early in their Vision Zero policy development, government leaders invited and strongly encouraged relevant private sector leaders to participate and stake a claim as vested parties in the movement. Given the high level of trust and loyalty that Swedes place in national automakers, this made a difference.

Soon after Vision Zero's adoption, the National Transportation Minister put a spotlight on delivery companies' commitments, setting higher standards and market expectations for their drivers' behavior. This has been replicated for professional drivers across

<sup>11</sup> Intomart GfK, 2010

the board. So, notably, the impetus for safety from consumers is demand-driven rather than regulatory. In Sweden today, safety performance is usually a decisive factor in consumers' car choice. This market pressure has encouraged and accelerated automakers' innovation and investments in safety.

In interviews, Swedish Vision Zero government leaders acknowledged that they focus more on the design, technology, and "self-enforcement" of the vehicles than on what would commonly be considered "education" among the general public. One national-level government leader explained, "The old thinking was ... that we need to change the behavior ... [through] information and education and new rules. But when it comes to Vision Zero, we've tried to shift that focus ... and to introduce new technology to change the norms both in the road environment and also in the cars."

Key examples include the following: requiring side guards on trucks and sensors to alert drivers to people walking and biking on the road; manufacturing commercial trucks and tractor-trailer vehicles with shorter front hoods so that drivers sit on the engine and have greater visibility; installing black boxes and cameras in fleet cars that will capture behavior that may contribute to serious collisions; installing alcohollocks in fleet cars; and an idea that is not yet approved: incentivizing consumers to scrap older vehicles that do not meet high safety standards.

Sweden's Vision Zero leaders have also prioritized nurturing a high level of consumer demand for safety aspects in automobiles, both among the general public buying personal vehicles and large entities with greater purchasing power, such as government and corporations.

As one interviewee shared, "Sweden has the quickest uptake of new vehicle technology of every country in the world."

Other examples of these countries commoditizing safety — beyond safety-related technology — include promoting reduced insurance rates for drivers who have safer records, as well as pay-as-you-drive insurance rates that better correlate risk with costs. Insurance companies — such as Folksam in Sweden and Dekra in Germany — are widely recognized among politicians, government agencies, and researchers as legitimate traffic safety leaders and partners in Vision Zero-style efforts. Partnerships and initiatives such as these are currently underleveraged in the United States.

## *Build Leadership in Private and Public Sectors*

"It's so important to have strong leadership," said one interviewee of advancing Vision Zero. This sentiment was echoed repeatedly in interviews in all three of the countries studied, acknowledging that success with Vision Zero takes significant culture change and must be initiated and modeled at the top.

Far more than in the United States, when Swedish Vision Zero leaders point to the need for strong leadership, they are referring beyond the obvious political needs. This includes an emphasis on identifying and incentivizing leadership in the private sector, not only the automobile sector but also other transportation-related fields. One

Swedish interviewee said, "As we sometimes say, it is probably more effective to talk to five CEOs of taxi companies than to try to enforce 15,000 individual taxi drivers out in traffic."

Political leadership is, of course, also recognized as being important. It is worth reiterating that

these nations' smaller sizes and more centralized government structures, as compared to the United States, make their leadership-building task somewhat less complicated, but not without challenges. As described earlier in this report, initiation of Sweden's Vision Zero program came from the top ranks of the national transportation department, helping show high-level commitment and to boost buy-in.

***“ Sweden’s Vision Zero program came from the top ranks of the national transportation department, helping show high-level commitment and to boost buy-in.”***

A similar evolution of Sustainable Safety occurred in the Netherlands. Yet, more than 20 years into the program and after significant de-centralization of government power from the national to local and regional levels, there are questions about the level of buy-in for the program. Potential waning of attention to traffic safety may also stem from the fact that notable progress has been made and the issue's urgency has decreased, also lessening political pressure. As of the writing of this report, Dutch Sustainable Safety proponents were actively questioning how to refresh and reignite commitment, particularly at the national level.

Part of the answer may come from looking to and leaning on leadership at the European level. The European Union and other international entities are setting ambitious traffic safety goals, which seem to be challenging individual nations to set and strive toward their own aggressive goals.

Progress across Europe has been notable, with traffic fatalities decreasing by 18 percent between 2010 and 2014. Still, they have set a far more ambitious goal of cutting by half the number of traffic deaths between 2010 and 2020, with extra emphasis in some areas, such as pedestrian and bicycle safety and in urban areas. In reviewing Swedish and Dutch traffic safety planning documents, ambitious European goals seem to be compelling those two countries to continue their own aggressive work. So, even in nations where the political attention may be waning to some degree, there is the potential for international attention and healthy competition between nations to help sustain action.

## *Set Goals and Invest in Regular Measurement*

Sweden's Vision Zero approach has been data-driven from its inception and has continued to evolve as it recognizes areas for improvement. The same is true for the Netherlands' Sustainable Safety work.

This begins by setting — then regularly measuring — well-defined and ambitious targets to reduce the number of traffic fatalities and severe injuries. Leaders interviewed for this report urged that such resolute goals are vital to encouraging the development of new ways to improve safety. They repeatedly echoed that ambitious targets (e.g., zero) help unite the stakeholders, create greater commitment and focus, and raise awareness about new problems and solutions.

They also acknowledge the risk of setting a challenging target that could be construed as a failure if it falls short. They point to the importance of setting and measuring interim targets to help guard against this. These interim targets should not be seen simply as numbers that must be reached by particular years, but rather they serve as catalysts for change by encouraging the development of new and innovative solutions. For instance, in Sweden, leaders say that the fact that their original reduction target was not achieved could have been regarded as a failure, but it was not because the process, innovation, and technical progress the effort set in motion is driving much of the positive road safety trends now underway.

The Swedes use a system of performance indicators, called Management by Objectives, which are quantifiable measurements used to manage and monitor the road safety effort. The performance indicators are measured each year and presented at an annual national results conference, then are regularly reviewed and updated. Gathering key stakeholders annually to review these key Vision Zero objectives helps maintain buy-in and shared understanding. As one Swedish leader shared: "Even if there is not always consensus for all issues, the knowledge of cause-relations are relatively high since injury data analyses are regularly presented. This means that there are discussions more based on fact than what one believes."

<b>Performance Indicators Requirements in Sweden</b>
1. <i>The indicator should have a satisfactory level of validity.</i> Known correlations must exist between the trends of the indicator and the number of fatalities and/or serious injury.
2. <i>The indicator must be reliable.</i> It must be amenable to quantification and monitoring in the same way every year. That the indicator is reliable and measured in a consistent manner is more important than it being fully representative for the entire country.
3. <i>The indicator must be easy to quantify</i> such that the process is not too extensive, resource consuming or complicated.
4. Unless special circumstances dictate otherwise, <i>the indicators should remain the same from year to year</i> in order to monitor them on an ongoing basis.

Having a measureable, data-driven approach to traffic safety starts with the collection of solid data telling the story of what is happening where. For example, injury-related data gathered by police at the scene of an incident sometimes tells only part of the story. In recent years, Sweden and the Netherlands have significantly boosted the richness of their understanding of traffic-related injuries by also gathering injury-related data from hospitals, which is then combined with police data to share a fuller picture of incidents. For instance, the hospital data showed that crashes involving people walking and biking were under reported in the police data in both Sweden and the Netherlands. This has led their governments to focus on certain strategies, such as better maintenance of bikeways and research into using softer, more forgiving materials on bikeways.

Another important data change has been the broadening from a strong focus on fatality reduction to additional attention on injury reduction. This has meant specific efforts to more consistently classify and better analyze severe injuries. For instance, in Sweden a few years ago, after analysis of the first phase of Vision Zero work, leaders added a new term to their work, “very severe injury”: a personal injury that causes permanent medical impairment of health equivalent to a medical impairment of 10 percent or more.

This has helped focus priorities and limited resources and is an area that the European Union has also become more active in, recognizing that an estimated 120+ times as many people are impacted by injuries than fatalities. Starting with a larger world of data will be helpful in assessing strategies and prioritizing resources to improve safety and health for more people. A 2013 report on traffic safety by the World Health Organization<sup>12</sup> found that while 112 countries (62 percent) include fatality targets in their national strategies, only 62 countries (34 percent) include targets on non-fatal injuries, in part due to the difficulty in defining and counting non-fatal injuries.

Perhaps most impressive about the evolution in approach is moving from using data reactively to being robustly proactive. By developing safety indicators, Sweden and the Netherlands are now focusing not on the crashes of today but of tomorrow. This is in line with the systems-type approaches of Sustainable Safety and Vision Zero, which ask if this location proved problematic, what other locations that share similar characteristics may also prove problematic at some point? And how can we get ahead of those problems by applying safety strategies before they show up on our maps as high-collision areas?

<sup>12</sup> World Health Organization, Violence and Injury Prevention, “Global status report on road safety 2013.”



## Policy Recommendations

While the traffic safety programs in different nations cannot be compared or adopted in a pure apples-to-apples fashion, there are certainly opportunities for the young Vision Zero programs in the United States to learn from longer-standing efforts in European countries.

To be successful, Vision Zero leaders in the United States — including government, community members, and the private sector — should understand and embrace the concept's fundamental tenets, as outlined more fully in the first half of this report. These include:

- Agreement that people have the right to move about their communities safely, and so this safety must be prioritized above speed and convenience (or perceived convenience);
- Acknowledgement that humans will make mistakes, so transportation systems should be planned to minimize the severity of repercussions;
- Greater attention focused on improving the transportation system itself, (particularly the built environment, policies, and technologies that influence behavior), rather than over-focusing on influencing individual behavior; and
- Buy-in that system designers play a primary role in influencing these transportation systems, along with individual roadway users.

For a Vision Zero community, it is essential to build philosophical and political commitment to these fundamental concepts. The strategies — including decisions about the design of the environment, as well as policies, programs, and priorities (enforcement, funding, etc.) — will all follow from this grounding in the fundamental concepts.

Based on this research, as well as direct experience with early-adopter Vision Zero cities in the United States, we share the following five policy recommendations. They are highlighted here based on their positive impacts in the research countries, as well as their relevance within the structural, political,

and cultural conditions in U.S. communities today. We recommend the following approaches for U.S. Vision Zero communities focused on success:

- **Leadership, Collaboration, and Accountability;**
- **Focus on System-Level Changes;**
- **Commit to Speed Management as a Fundamental Tenet;**
- **Measure and Report Regularly; and**
- **Prioritize Community Engagement.**

### *Leadership, Collaboration, and Accountability*

Early, strong, and consistent leadership — including commitment to the Vision Zero principles and to institutionalize systems changes — will be critical to Vision Zero's success in U.S. communities.

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 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, policymakers, elected officials, and community members in traffic safety work are some of the keys that makes Vision Zero powerful. Though 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 measureable on the road to zero, which all stakeholders commit to together. This will force 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 reports to governing bodies and the public regarding progress and learnings is also critical to establish trust and accountability.

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***Vision Zero offers a framework to elevate political commitment and public buy-in to prioritize safety on our streets and to shift cultural attitudes and behaviors that will result in a safer society.”***

build the system and the policymakers who vote on changes.

This approach can help practitioners and policy leaders move beyond a primarily educational approach to prioritize policy development and injury prevention

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.

## ***Focus on System-Level Changes***

Vision Zero calls for a shift in attention from the traditional, primarily educational approach aimed at influencing individual behavior to an “upstream” approach that shapes policies, systems, and the built environment — key factors that most affect people’s behavior and choices. This does not mean that individuals are not responsible for their own behavior, or that efforts to influence individuals directly are not worthwhile. Instead, it shifts the focus to higher-level systems and policies and those who control them because this has greater impact than trying to influence billions of individual choices. This more holistic strategic approach — adapted from public health frameworks — differentiates Vision Zero from the traditional transportation safety approach.

Policies and strategies should encourage the desired behaviors by making them intuitive, rational, and easy to follow. A primary example of this is roadway design. As is discussed earlier in this report, proven measures exist to encourage safe behavior, particularly safe speeds in urban environments. These include traffic calming measures, such as roundabouts, raised crosswalks and corner bulbouts. Decisions

made about how the built environment is shaped will have far more impact influencing the behavior of individual roadway users than such “encouragement” efforts as advertising or education campaigns. The key is influencing the actual roadway designers who

strategies that are proven to be more successful in achieving these broad community goals. As seen in the successful efforts to shift societal attitudes toward drunk driving, seat belt usage, and smoking, we must reposition attention to the top levels in the spectrum of prevention, including influencing policy and legislation and changing organizational practices.

In its Vision Zero leadership and commitment to systems change, the United States should not hesitate to use a broad spectrum of incentives and deterrents to influence the most important systems in their traffic safety work. The European countries studied have demonstrated carrot-and-stick efforts across government, private industry, and community-based organizations.

U.S. communities can take opportunities to elevate a systems-level approach in Vision Zero, prioritizing the upstream areas of influence by:

- Securing greater local control to set speed limits, using safety cameras, and exercising greater flexibility (from state and federal government guidelines) to allow for roadway design that prioritizes safety over auto capacity;
- Training transportation planners and engineers to prioritize safety in design, and then setting standards and expectations for follow-through;
- Raising the legal driving age from 16 to 18 years old, as in much of Europe, given overwhelming evidence of safety problems being far over-

represented in that younger age group,<sup>13</sup> or increasing training and testing standards for younger drivers;

- Setting more stringent safety regulations for companies managing fleet drivers of all kinds (including taxis, Lyft/Uber, delivery vehicles, and city vehicles);
- In the case of fleet drivers, requiring investment in in-vehicle safety technology (e.g., black boxes and cameras) and vehicle design (e.g., automatic braking, shorter hoods for greater visibility);
- Maximizing the purchasing power of government and large companies to invest in safety and to push consumer demand for safety within vehicles;
- Prioritizing safety-focused regulations in the development of autonomous vehicles, which is an increasingly promising opportunity for safety improvements if done correctly.

In essence, the recommendation is not to shy away from sensible incentives, rules, and regulations that prioritize safety. This is particularly the case related to automobile travel, which has a disturbing track record of 40,000 lost lives per year (based on 2016 figures).<sup>14</sup>

## *Commit to Speed Management as a Fundamental Tenet*

Speed management is not simply a strategy or an optional tool in the toolkit; it is a fundamental and critical tenet of Vision Zero.

According to multiple sources, speed is estimated to be a factor in nearly one-third of all traffic deaths in the United States. To be serious about Vision Zero means implementing effective speed management, including designing roadways to encourage safe speeds, setting appropriate speed limits based on safety, and using technology to influence safe behavior.

This will be a political lift for U.S. communities in which speed has traditionally been prioritized over safety in cultural norm-setting. But, we will only be playing in the margins until we bring down speeds — and speed differentials between road users (those walking, bicycling and driving) — to safe levels. This will require a cultural shift, which is at the heart of Vision Zero, to prioritize safety over speed and (perceived) convenience.

Recommended strategies include:

- better informing the public of the relation of speed to traffic injuries and death;
- communicating the benefits of effective speed management, including the success rates for improving safety;
- ensuring that speed management is positioned as part of a clear, broader traffic safety campaign, not a stand-alone effort;
- building meaningful buy-in of key stakeholders, such as police, public health officials, local media, and communities most impacted by traffic violence;
- building credibility by challenging the perceptions that speed enforcement measures are designed for revenue generation and/or cause undue privacy infringements;
- dedicating revenue raised by speed-related enforcement directly to traffic safety efforts and illustrate the ongoing benefits; and
- prioritizing equitable enforcement by using graduated fines and by elevating Automated Speed Enforcement over officer-initiated stops.

Managing speed to safe levels deserves to be the next major campaign in traffic safety efforts, learning from and modeling on the significant advances of the anti-drunk driving movement over the past few decades.

<sup>13</sup> According to the Centers for Disease Control, teen drivers ages 16 to 19 are nearly three times more likely than drivers aged 20 and older to be in a fatal crash, per mile driven.

<sup>14</sup> National Safety Council, Statistics Department, "NSC Motor Vehicle Fatality Estimates," 2017.

## Measure and Report Regularly

Many Vision Zero communities in the United States are adopting a more data-driven approach to traffic safety efforts. Having a commitment to a data-driven approach is not only bringing more information to the fore, but also building greater cross-disciplinary understanding of the problems and stronger buy-in for solutions.

The next step is to make sure that communities are collecting, analyzing, and using the right data. U.S. communities should improve their data-driven approach in several key areas:

**Supplementing law enforcement data with hospital data.** Sweden and the Netherlands significantly improved their understanding of traffic-related injuries and their responses by supplementing police-collected data with data from hospitals. This is something U.S. communities should also prioritize in their Vision Zero work.

**Training and setting systems for fair, full data collection by law enforcement.** 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. Vision Zero stakeholders should be actively working to support better resources, systems, and training to improve law enforcement's ability to collect the necessary and sufficient data to give an accurate view of what's happening on our streets.

**Expanding analysis and measurement of severe traffic injuries, not just fatalities.** Though Vision Zero sets the goal zero traffic fatalities and severe injuries among all road users, that latter part is often forgotten in planning and measurement efforts. The European Union and some individual nations have increased attention toward data collection and efforts toward reducing the number and severity of traffic injuries, acknowledging that these have traditionally received less urgency than merited.

**Using data to make proactive, not just reactive, changes.** Similarly, U.S. communities would be wise to move sooner than later toward a proactive approach of assessing patterns on our streets and applying more wholesale solutions before serious problems occur. A promising, emerging strategy is to use data to

conduct predictive modeling, moving beyond simply reacting to past problems at specific locations. This method proactively prioritizes safety interventions by analyzing locations with repeated problems and observing the characteristics of those crashes and sites, then applying proven solutions to sites throughout the city, including where serious crashes have happened but are likely based on data analysis.

## Prioritize Community Engagement

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

First, it is critical to recognize that certain communities within the United States — children, seniors, people with disabilities, people of color, and low-income people — bear a disproportionate burden of the damaging effects of traffic crashes. While not consistent in every community, this is well-documented across the country, even leading the U.S. Department of Transportation to acknowledge a “regrettable legacy of aligning and designing transportation projects that separated Americans along economic and even racial lines.”

Vision Zero's core principle of data-driven decision-making can shine a brighter light on existing inequities in our transportation systems and help direct safety interventions where they can have the greatest positive impact. So far in U.S. cities, this spotlight has been helpful to prioritize attention and resources in neighborhoods that disproportionately experience traffic safety problems, and which are more likely to impact vulnerable and underserved communities.

But Vision Zero's same data-driven approach can also raise doubts, mistrust, or even deep injustices for some community members. While data may appear to justify focused traffic enforcement in some neighborhoods that disproportionately experience traffic safety problems, research and experience show that focused officer-initiated enforcement can also result in over-policing and/or racial profiling or, in more extreme cases, even violent actions. This contributes to injustices and disintegration of trust between police and the communities they serve.<sup>15</sup>

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<sup>15</sup> For more on this topic, see the “Centering Equity in Vision Zero” report at [visionzeronetwork.org](http://visionzeronetwork.org).



Recognizing the importance of and prioritizing equity considerations early and regularly in the Vision Zero planning process can help build a stronger, more inclusive effort. It is important to engage and elevate the voices and priorities of local residents — particularly those most impacted by traffic violence and who are not as recognized or involved in traditional public processes.

Effective outreach begins with identifying stakeholders, opinion leaders, and willing partners in the affected communities — these may be within schools, faith organizations, residential centers, nonprofit organizations, trusted advocacy groups, and businesses — and building relationships to understand what issues are important.<sup>16</sup> Direct one-on-one conversations with community leaders and rank-and-file community members, really listening to the needs of the community, and relationship-building over time are ways to build trust and more inclusive, representative efforts.

## Conclusions: Moving from Vision to Action

This research clearly indicates that U.S. communities aiming for Vision Zero should acknowledge and incorporate the fact that this is a paradigm shift — a fundamental shift in how we make decisions to prioritize safe mobility.

Vision Zero is not simply an ambitious new goal or a set of new talking points. It is not working harder with the existing mix of strategies in order to squeeze out better results. Nor should it be repackaging business-as-usual with a shiny, new name.

Vision Zero is a commitment to making and institutionalizing fundamental, systemic changes that prioritize safety above other factors. Setting the goal of zero is intentionally bold and reinforces that we need major shifts in thinking, planning, prioritizing, and taking action.

The greatest opportunity that Vision Zero offers is a framework to elevate political commitment and public buy-in to prioritize safety on our streets and to shift cultural attitudes and behaviors that will result in a safer society.

“You need to take the whole concept on board,” as one Swedish expert said. “It’s a way to say we’re not happy with a little bit of change.”

And given the current situation in the United States, which lost 40,000 people in traffic crashes in 2016, and where we are witnessing growing realization and agitation that these losses are largely preventable, we certainly are in a position warranting change.

Will our approach differ key ways from those in Europe? Of course. But as long as we acknowledge and incorporate the core principles of Vision Zero and build political and public commitment to these, there is no reason to believe that we cannot take innovative leaps ahead, as other countries are, in ensuring safe mobility for all.

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<sup>16</sup> It is important to make space to broaden the conversation to include issues that may not be considered traditionally transportation-specific but directly related, such as housing and economic concerns.

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