Note: Anyone wishing to speak at any Transportation Advisory Committee meeting is encouraged to do so. If you wish to speak, please rise and, after you have been recognized by the Chair, give your name and City for the record. You will then be allowed to speak. Please note the public testimony may be limited by the Chair.

TRANSPORTATION ADVISORY COMMITTEE

April 18, 2024

AGENDA

I. CALL TO ORDER: 6:00 PM, Meeting held virtually via Zoom
Link: https://zoom.us/j/96073919566

II. ANNOUNCEMENTS

III. CONSENT AGENDA

A. Approval of March 21, 2024 Minutes

IV. PUBLIC FORUM (6:05-6:20)

V. REPORTS FROM OTHER CITY COMMITTEES (6:20-6:30)

VI. NEW BUSINESS

A. None

VII. UNFINISHED BUSINESS

A. Vision Zero Resolution & Action Plan (6:30-7:30, action required review resolution and associated staff report for Council consideration)

B. Bike Parking (7:30-7:45, action required, discuss next steps for bike parking inventory and improvement plan)

VIII. INFORMATIONAL ITEMS

A. TSP Process Update

B. Grant Opportunities (SS4A, Community Paths Program, SRTS, Carbon Reduction Program)

C. Equity in Transportation

IX. AGENDA BUILDING – Future Meetings

X. ADJOURNMENT: 8:00 PM

Next Meeting Date: May 16, 2024

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please email scott.fleury@ashland.or.us. Notification 72 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to the meeting (28 CFR 35.102-35.104 ADA Title 1).

CITY OF ASHLAND

ASHLAND TRANSPORTATION ADVISORY COMMITTEE
MINUTES
March 21, 2024

CALL TO ORDER: 6:00pm
Members Present: Linda Peterson-Adams, Mark Brouillard, Julia Sommer, Joe Graf, Dave Richards, Corrine Vieville, Holly Christiansen, Nick David
Members Not Present: Dylan Dahle
Staff Present: Scott Fleury, Liz Beckerich
Liaison Present: Eric Hansen, Dylan Bloom
Guests Present: None

ANNOUNCEMENTS
Ashland Fire and Rescue is rolling out a new program called Community Connect. It's a platform where citizens can put in critical information about their property to be shared with first responders. Google "Ashland Community Connect" to sign up.

March is Speed Awareness Month.

CONSENT AGENDA
Christiansen motioned to approve the minutes from the February meeting. Sommer seconded. All ayes.

PUBLIC FORUM
Fleury addressed a letter he received from Roxanne Rae regarding being parked in when parked on the street. He stated that the police would be a more appropriate contact, and that standard parking spaces are not marked except in the downtown area.

The group discussed a comment from Karen Hill-Wagoner regarding ADA parking in the downtown area. Fleury stated that increasing ADA spaces is a topic within the TSP update.

REPORTS FROM OTHER CITY COMMITTEES
Councilor Hansen spoke about Vision Zero being passed by city council, stating that along with the increased safety that comes along with adopting the Vision Zero philosophy, it also allows for more grant opportunities. He thanked everyone for their hard work.

Peterson-Adams spoke about the Planning Commission, stating that at their last meeting the Planning Commission talked about a small development on Sylvia Street and mentioned turning culture away from an autocentric focus to a bike and pedestrian access focus. Peterson-Adams was pleased that they acknowledged the transportation element of development.

Peterson-Adams informed the TAC that she would be the liaison for the Housing and Human Services Advisory Committee from here on out.

Peterson-Adams gave an update on the Climate and Environment Policy Advisory Committee. At their last meeting, Gary Shaff proposed a subgroup to make a ten-year plan to develop bike connectivity projects, however, the planning would possibly be redundant because the TSP update will be exploring that already.

Vieville inquired about the accessibility of the new city website that launches next month, and asked if there's a way that it could be tested by blind people to see if the website will work with their software. Fleury stated he would follow up with the City Manager about it.

The Public Arts Advisory Committee is exploring the option of painting murals on crosswalks instead of the standard white stripes to help beautify the city.

The group discussed whether the TAC will start reading the land and/or labor acknowledgements at the beginning of meetings. It was unclear if it's a requirement. Fleury and Hansen will investigate.

NEW BUSINESS

Crosswalk Public Art Project

An artistic crosswalk was proposed by the Public Arts Advisory Committee to go in at the plaza at Lithia Park. The design chosen must conform to the appropriate crosswalk requirements.

Fleury stated that he had talked to the chair of the Public Arts Advisory Committee about art projects in the right-of-way, and one location where an artistic crosswalk could go is in front of Gateway Real Estate leading into Lithia Park. Fleury explained that the crosswalks would still have the white bars/border, and that the art would be inside those lines. The Parks and Recreation Commission already stated their support for the project. The Public Arts Advisory Committee still has to take the proposal to city council. If approved, once an artist is found and art is selected, it will be installed. There's a company that can make any sort of design out of thermal plastic marking to be burned into the crosswalk. The crosswalk would then be easily maintained by the Public Works Department. Fleury stated he supports the concept, so it's before the TAC for a recommendation to move forward.

Sommer moved to recommend to city council that the public art projects in crosswalks initiative be approved, with the requirement that the crosswalks will still have white borders. Richards seconded.

Vieville informed the group that guide dogs are taught to look for the bars on crosswalks, and that people with low vision need the bars and bright colors to be able to tell where a crosswalk is, so if there's a design in the crosswalk instead it may be confusing.

David inquired how public art is funded. Fleury responded that the Public Art Fund is allocated money each year, and that for the crosswalk project there's a rough estimate of it costing around $10,000. David suggested that kids could do the painting so that it would be more of a community event. Peterson-Adams responded that there is a separate process where neighbors can get together to do projects for community building.

Sommer withdrew her motion.

Brouillard stated that the city of Long Beach had crosswalk painting done, and that it cost closer to $25,000. Also, that's per crosswalk per direction, not per intersection. Additionally, if there's no grit in the texture of the paint used, ice may form in the winter and become slippery. Brouillard also stated that thermal paint is better in the long run.

Graf expressed the importance of the motion including that the crosswalks still must follow all the requirements of a crosswalk to prevent confusion, as the examples given as possible crosswalk ideas could all be confused for artistic pieces.

Richards stated that art would make crosswalks stand out more, and anything that increases their visibility is a good thing.

Hansen suggested that even if this initiative doesn't get approved for the crosswalk near Lithia Park, it would be beneficial for the beautification of the south side of town.

Fleury stated that the stop bars can be put away from the crosswalk with a "Stop Here for Pedestrians" sign as added safety measures to warn drivers.

David inquired about the requirements for maintaining a standard crosswalk. Fleury explained that thermal plastic is typically bought in strips and then cut to size, and it probably costs a couple thousand dollars in materials. Additionally there's the cost of labor for city employees to install and maintain the crosswalk, with established crosswalks needing to be re-done every 1-5 years depending on the amount of traffic. David inquired if there was a different way that the crosswalk could be done that would still include it having texture. He also stated that due to the crosswalk being on a curve, keeping the crosswalk as standard as possible would be best for safety.

Sommer stated that many of the designs in the packet were less than $10,000 and were beautiful. She also reminded the group that they were supposed to be voting on the concept and not the specifics.

Brouillard pointed out that all of the examples were at signaled crosswalks, whereas the crosswalk being proposed leading into Lithia Park is not signaled.

Richards motioned that the TAC recommend that city council look into beautifying the crosswalk between Gateway Real Estate and Lithia Park with the appropriate safety limitations. Mostly ayes.

Distracted Driving Month Resolution

The TAC discussed the draft resolution for Distracted Driving Month. Christiansen suggested that some specific actions be suggested, such as reader boards. Fleury confirmed that that's a possibility and added that he is fairly certain ODOT did that last year. David suggested recommending that the police increase their patrol. Brouillard stated that at last month's meeting when he asked Officer MacLennan if there was any sort of resolution that city council could pass that would stop distracted driving, Officer MacLennan said no. Peterson-Adams, Sommer, David, and Richards voiced support for the reader board idea.

Motion to recommend to Council that reader boards and educational messages on social media be used in support of Distracted Driving Month. All ayes.

Planning Commission Study Session

The TAC discussed the importance of working with the Planning Commission and attending their upcoming study session. Graf, Peterson-Adams, and Christiansen stated they would attend.

Fleury suggested to the group that they put together information on what the TAC is working on, and some of the issues that the TAC deals with regularly that are caused by Planning Commission approvals.

UNFINISHED BUSINESS

Bike Box Installation Recommendation

The TAC discussed possible actions regarding bike boxes. Fleury explained that the bike box proposed at Walker Ave and Ashland St is within the Ashland Street Rehab Project, and that the contractor for that project needs to know if that needs to be planned for. Additionally, there's already funds allocated for the addition of the bike boxes.

The possible issues that could be caused by the bike boxes were discussed, such as drivers becoming frustrated by having to give priority to cyclists when turning right at a red light. Brouillard expressed his concern for putting a bike box on the north side of Ashland Street at Walker, as there's already an issue with cars queuing in that area due to school pickups and drop-offs. Additionally, a bike box in that area would be close to where Starbucks' drive through

exits which could be unsafe. More discussion was had about logistics. Fleury stated that if the bike boxes are approved, the city will start circulating information about how they work. David inquired if this decision would be reversible if the bike boxes become more problematic than helpful, and Fleury responded yes. Peterson-Adams suggested a "right turn only" sign for customers leaving Starbucks.

Christiansen motioned that the Public Works Director include the bike box features and associated changes to the intersection of Ashland St and Walker Ave. Richards Seconded. 4 ayes, 2 opposed, Graf abstained from the vote. Motion passes.

Bike Parking

Sommer stated she's having technical issues with the app GIS made for inventorying the bike racks in town, and she has met with GIS about it. Christiansen stated that with the bad weather on the weekends, it's been difficult to find time to get outside to inventory bike racks and suggested extending the deadline. Brouillard is also still working on inventorying, and stated that from what he's seen, the bike racks in lower income areas were being used, but that the bike racks in higher income areas were not. He suggested trying to find a way to provide a bike rack or two to low-income apartment complexes.

ADJOURNMENT: @ 7:59

Respectfully submitted,
Elizabeth Beckerich, Administrative Assistant
Full Video Available by Request*

Memo

CITY OF ASHLAND

Date: April 10, 2024
From: Scott A. Fleury
To: Transportation Commission
RE: Vision Zero Action Plan Development

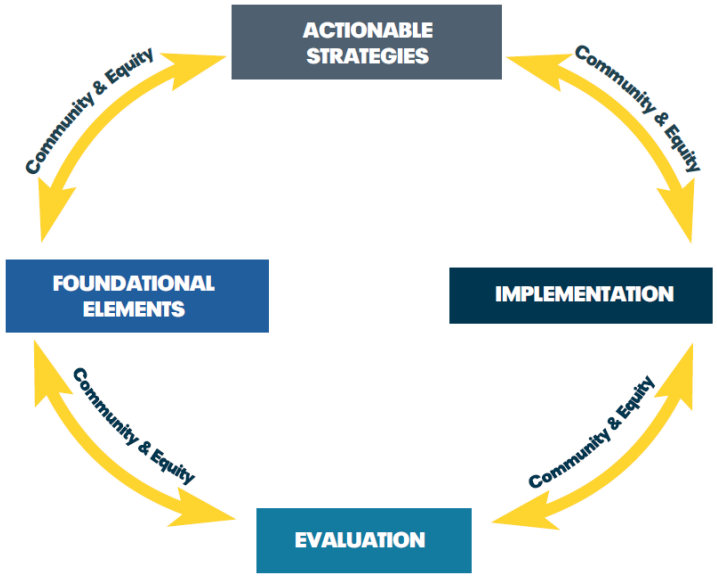
BACKGROUND:
The Transportation Commission and now Transportation Advisory Committee have had numerous discussions over the past few years regarding the Vision Zero Program. The last item developed was the Vision Zero Resolution that was brought before the City Council for approval at the March 5, 2024 Business Meeting. The Council approved the resolution and now the TAC can begin work on development of an Action Plan.

Staff has attached three documents to this staff report to help assist development of an Action Plan.

1. Vision Zero Action Plan (draft template)
2. Vision, Strategies, Action
3. Moving from Vision to Action

The Foundational Elements of a Vision Zero Action Plan include:

1. Robust Data Framework
2. Actionable Strategies
3. Implementation
4. Evaluation



As the Commission and Public Works staff move forward with the Transportation System Plan Update process, there will be a direct connection to development of strategies, goals, projects and timelines that can be utilized to construct the formal action plan.

Discussion Questions:

1. How does the Commission wish to address the framework of a Vision Zero Action Plan?
    a. Vision Zero Task Force
        i. Transportation Commission
        ii. Others
    b. Community Input
        i. Communities of Concern (equity)
    c. Data Sources & Framework
        i. ODOT
        ii. City of Ashland
        iii. Census Information
        iv. Planning/Zoning
    d. Goals & Timelines
        i. What does success look like
        ii. Who is primarily responsible for achieving goals in associated timeframe?
        iii. What are the conditions and limitations for success?
    e. Strategies & Accountability
        i. Fundable
    f. Transparency
        i. Website
        ii. Continuous Feedback
        iii. Regular Meetings
        iv. Assessments
    g. Project List development based on Community Input

2. How do we tie in the Transportation System Plan Update?
    a. Community Input (Public Involvement Plan)
        i. Communities of Concern
    b. Project List development based on Community Input
        i. Prioritization process
        ii. Funding scenarios/options

CONCLUSION:

Action required: Committee should discuss next steps for a Vision Zero Action Plan.

City of Ashland Vision Zero Action Plan

Acknowledgements

City of Ashland Council

Mayor Tonya Graham

Dylan Bloom

Paula Hyatt

Gina DuQuenne

Eric Hansen

Jeff Dahle

Bob Kaplan

City of Ashland Transportation Commission

Linda Peterson-Adams

Corrine Vievielle

Joseph Graf

Holly Christiansen

Dylan Dahle

Mark Brouillard

Julia Sommer

Nick David

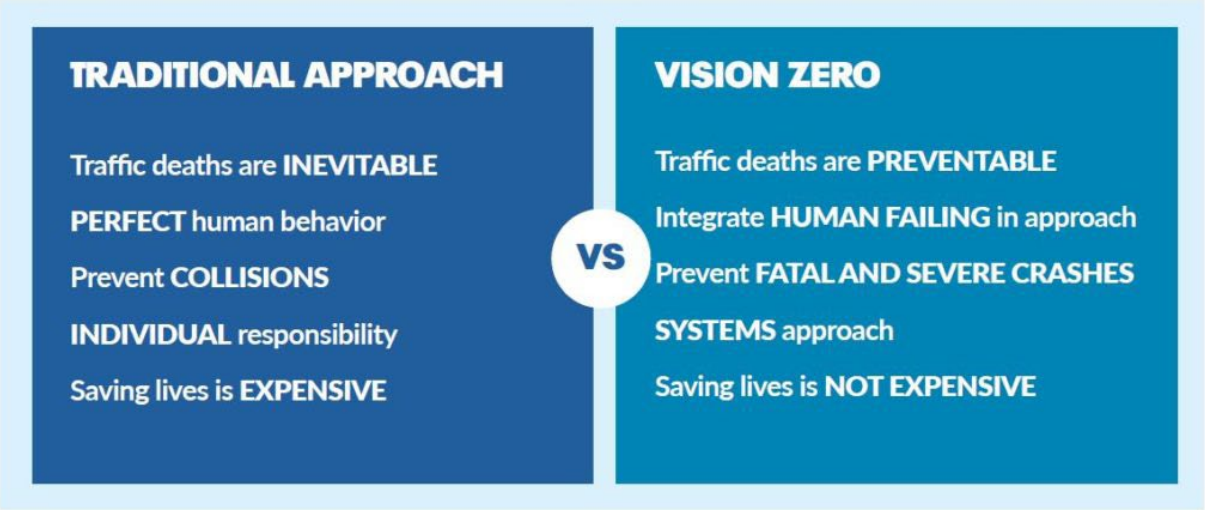
Dave Richards

Table of Contents

Section 1: Introduction

Section 1.1 Purpose

"Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all".



Vision Zero starts with the ethical belief that everyone has the right to move safely in their communities, and that system designers and policy makers share the responsibility to ensure safe systems for travel.

Vision Zero is a significant departure from the status quo in two major ways:

1. Vision Zero recognizes that people will sometimes make mistakes, so the road system and related policies should be designed to ensure those inevitable mistakes do not result in severe injuries or fatalities. This means that system designers and policymakers are expected to improve the roadway environment, policies (such as speed management), and other related systems to lessen the severity of crashes.
2. Vision Zero is a multidisciplinary approach, bringing together diverse and necessary stakeholders to address this complex problem. In the past, meaningful, cross-disciplinary collaboration among local traffic planners and engineers, policymakers, and public health professionals has not been the norm. Vision Zero acknowledges that many factors contribute to safe mobility -- including roadway design, speeds, behaviors, technology, and policies -- and sets clear goals to achieve the shared goal of zero fatalities and severe injuries.

The Vision Zero Program and Action Plan outline the City of Ashland's commitment and long-term strategy for eliminating deaths and serious injuries from the transportation system with a focus on equity.

Section 1.2 Vision Zero Resolution

RESOLUTION NO. 2024 - 06

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ASHLAND, OREGON SETTING AS OFFICIAL POLICY THE VISION ZERO GOAL THAT NO LOSS OF LIFE OR SERIOUS INJURY ON OUR TRANSPORTATION SYSTEM IS ACCEPTABLE.

RECITALS:

A. The life and health of the City of Ashland's residents are our utmost priority.

B. No one should die or be seriously injured on our transportation system.

C. Communities of Concern face a disproportionate risk of traffic injuries and fatalities.

D. Vision Zero is an approach to transportation safety that accepts no loss of life or serious injuries on the transportation system.

THE CITY OF ASHLAND RESOLVES AS FOLLOWS:

SECTION 1. The Ashland City Council sets as official policy Vision Zero's goal of zero fatalities or serious injuries on our transportation system.

SECTION 2. The Ashland City Council supports efforts by the City of Ashland and our regional partners to eliminate deaths and serious injuries on our transportation system, with an emphasis on the most vulnerable users.

SECTION 3. The Ashland City Council supports efforts by the City of Ashland's Transportation, to develop a Vision Zero Action Plan that develops and prioritizes safety improvements for people walking, bicycling, using mobility devices and driving motorized vehicles.

SECTION 4. This Resolution takes effect upon signing by the Mayor. This resolution was duly PASSED and ADOPTED this 5th day of March 2024.

Section 2: Guiding Principles

Section 2.1: Equity

The City's Vision Zero Action Plan shall be equitable and acknowledge the disproportionate burden of traffic crashes on people of color, low-income households, people with limited English proficiency, persons with disabilities or other mobility impairments, and other vulnerable groups. It will prioritize safety improvements for these populations.

The action plan will focus on filling gaps in transportation infrastructure where injuries and fatalities occur and where missing links limit transportation options, particularly for the underserved communities.

It will employ enforcement strategies that focus primarily on the most dangerous behaviors like speeding, impairment, and distraction. It will not result in racial profiling.

Section 2.2: Data Driven Decision Making

Crash, speed and volume data will be regularly gathered and uipdated to identify the locations, behaviors, and other conditions related to deaths and serious injuries on our streets.

Demographic data will be used to prioritize underserved communities.

The impacts and effectiveness of actions taken will be evaluated and publicly reported.

Section 2.3: Coordination and Accountability

Actions will have clearly defined roles, responsibilities and expectations among the departments working on implementation.

The City will work local and regional partners to maximize the impact of the Vision Zero Action Plan.

3.0 Transportation in Ashland

3.1 High Crash Network

3.2 Communities of Concern

VISION4FRONETWORK

MOVING FROM VISION TO ACTION:

Fundamental Principles, Policies & Practices to Advance Vision Zero in the U.S.

February 2017

In sharing this document, we honor the tens of thousands of lives lost and millions more impacted by traffic crashes each year in this nation.

We aim to ensure that Vision Zero efforts entail not only bold proclamations and marketing campaigns but, more importantly, lasting changes that save lives and ensure safe mobility for all.

CONTENTS

BUILDING SUCCESSFUL VISION ZERO INITIATIVES

EXECUTIVE SUMMARY

Vision Zero was a phrase that most people working on traffic safety or related public policy issues had never even heard of. That's not the case anymore

Mayors, police chiefs, transportation professionals and community leaders in more than 20 U.S. cities have set Vision Zero goals of eliminating traffic fatalities and severe injuries within their communities.

Under the mantle of Vision Zero, they are bringing together a wide range of local leaders — including policymakers, community members and professionals in the realms of transportation, public health and law enforcement — to set and shape a shared goal to keep all people safe as they move about their communities.

Today, these leaders acknowledge that the high number of tragedies on our roadways is largely predictable and preventable. And they are stepping up to declare that "enough is enough" and to devise plans and policies for a safe future on our roadways, sidewalks and bikeways. **Just as we expect the right to safe water to drink and clean air to breathe in today's civilized society, so too should we expect the right to move about safely.**

At the state and federal levels, too, we are seeing an acknowledgement that the time has come to change our thinking and approach to traffic safety. In late 2016, we saw the U.S. federal government's bold pledge to change business as usual in its launch of the Road to Zero campaign, setting the goal of eliminating traffic fatalities nationwide within the next 30 years. And more than 40 U.S. states incorporate a Toward Zero Deaths approach into their safety work and are increasingly interested in supporting local Vision Zero efforts.

Even the media is recognizing the changing cultural norms. The Associated Press recently updated its recommended language from traffic "accidents" to "crashes," acknowledging that these are not random calamities, but rather something we have collective and individual control over.

It is at the local level that we are seeing the boldest and most innovative approach to shifting the traffic safety paradigm in the U.S. And this leadership could not come soon enough, as 35,092 people were killed in 2015 on the roadways, ending a 5-decade trend of declining fatalities with a 7.2% increase in traffic deaths from 2014.

With an average of 90 people dying each day in traffic in the U.S. – more than via gun violence -- we are in the midst of a public health crisis that demands greater attention from policymakers, professionals, and the public at all levels.

TRANSLATING VISION TO ACTION

The dramatic growth in Vision Zero commitments in communities across the nation, as well as stepped up interest at the state and federal levels, is encouraging. But now we need to ensure that the fast-growing, shared vision translates to action and results.

A true Vision Zero commitment is not a sign-on letter nor a slogan.

It is a fundamental shift in philosophy and approach to traffic safety. It is acknowledging that business as usual is not enough and that systemic changes are needed in our traffic safety work to make meaningful progress. This will not be easy, but it will be worthwhile.

At best, Vision Zero has the potential to galvanize a thorough and lasting shift in how we design and use our transportation systems to prioritize the preservation and quality of human life. At worst, Vision Zero runs the risk of becoming a short-lived trend or watered-down slogan that provides only lip service toward real, life-saving change. There is peril in well-meaning leaders adopting symbolic resolutions that fail to acknowledge and incorporate the significant systemic changes necessary to shift the paradigm of traffic safety.

We recognize that it is appealing to support Vision Zero in principle; it is far more difficult to take the bold steps necessary to implement it meaningfully and effectively.

This document was developed to assist policymakers, community members, and professionals, particularly in the realms of transportation, law enforcement, and public health to develop, implement, measure, and communicate clear, meaningful expectations for Vision Zero.

While we can study and draw inspiration from successes in countries such as Sweden in dramatically reducing traffic fatalities, the U.S. cannot simply copy and paste a Vision Zero template from abroad. Instead, we can and are defining a uniquely American version of Vision Zero that fits our cultural, legal, political, and historical contexts. While we adapt this powerful idea to U.S. communities, it is critical that our efforts embrace the fundamental principles of Vision Zero and take the challenge seriously of ensuring safe mobility for all.

WHAT IS VISION ZERO?

Started in Sweden in the late 1990s, Vision Zero is a traffic safety policy that takes an ethical approach toward achieving safety for all road users, setting the goal of zero traffic fatalities or severe injuries.

Vision Zero differs from the traditional roadway safety paradigm in several key ways. First, it holds that traffic deaths and severe injuries are preventable and focuses attention on the shortcomings of the transportation system itself, including the built environment, policies, and technologies that influence behavior.

Second, Vision Zero acknowledges that people *will* make mistakes, so collisions *will* happen. Given this reality, the focus is not on avoiding all crashes, but rather on lowering the likelihood of crashes resulting in severe injuries.

And unlike the traditional approach to traffic safety, where the greatest level of responsibility has been placed on individual road users, Vision Zero sets the highest level of responsibility on the system designers – transportation planners and engineers, policymakers, police, etc. Then, the concept holds that individuals have the responsibility to abide by the systems, laws, and policies set by the system designers. If safety problems persist, then the responsibility comes back to the system designers to take further measures to ensure safety. This is a paradigm shift in approaching roadway safety as a systemic issue.

Through its commitment to Vision Zero, Sweden has halved its traffic deaths nationally and is, today, one of the safest places in the country to move about.

PURPOSE OF THIS DOCUMENT

OUR DESIRED OUTCOME IS A SHARED UNDERSTANDING OF AND A PROMISE TO UPHOLD WHAT CONSTITUTES A STRONG VISION ZERO COMMITMENT IN THE U.S.

The goal of Vision Zero is nothing short of lasting, institutionalized, systems-level change. And it is possible, as communities across the nation and world are showing.

This document is intended to support the efforts of those working to advance Vision Zero, including:

- ☑ Policymakers / Elected Officials
- ☑ Transportation Professionals
- ☑ Law Enforcement Professionals
- ☑ Public Health Professionals
- ☑ Advocates & Community Organizers

Vision Zero will not develop or look the same in every community. Given the diversity of the U.S., there will be variations on approach and on the order of strategies. Each community will need to consider and take advantage of its own opportunities and overcome its own challenges in advancing this life-saving work.

That said, there are core principles that are essential to a traffic safety approach being a Vision Zero commitment. This report aims to define these core principles and the corresponding, high-level policies and practices to implement and sustain a successful Vision Zero program.

A few caveats about this report and the work of Vision Zero in the U.S.:

- **This is not a checklist or a how-to guide.** Rather, this is an overarching set of expectations for a robust Vision Zero commitment that will help communities convert enthusiasm into lasting systems-level changes in their local traffic safety efforts.

- **This document does not attempt to cover the technical aspects of promising Vision Zero strategies.** We are pleased that other partners focus on more technical components of this work and help practitioners better understand the value of various strategies, particularly from a roadway design perspective.

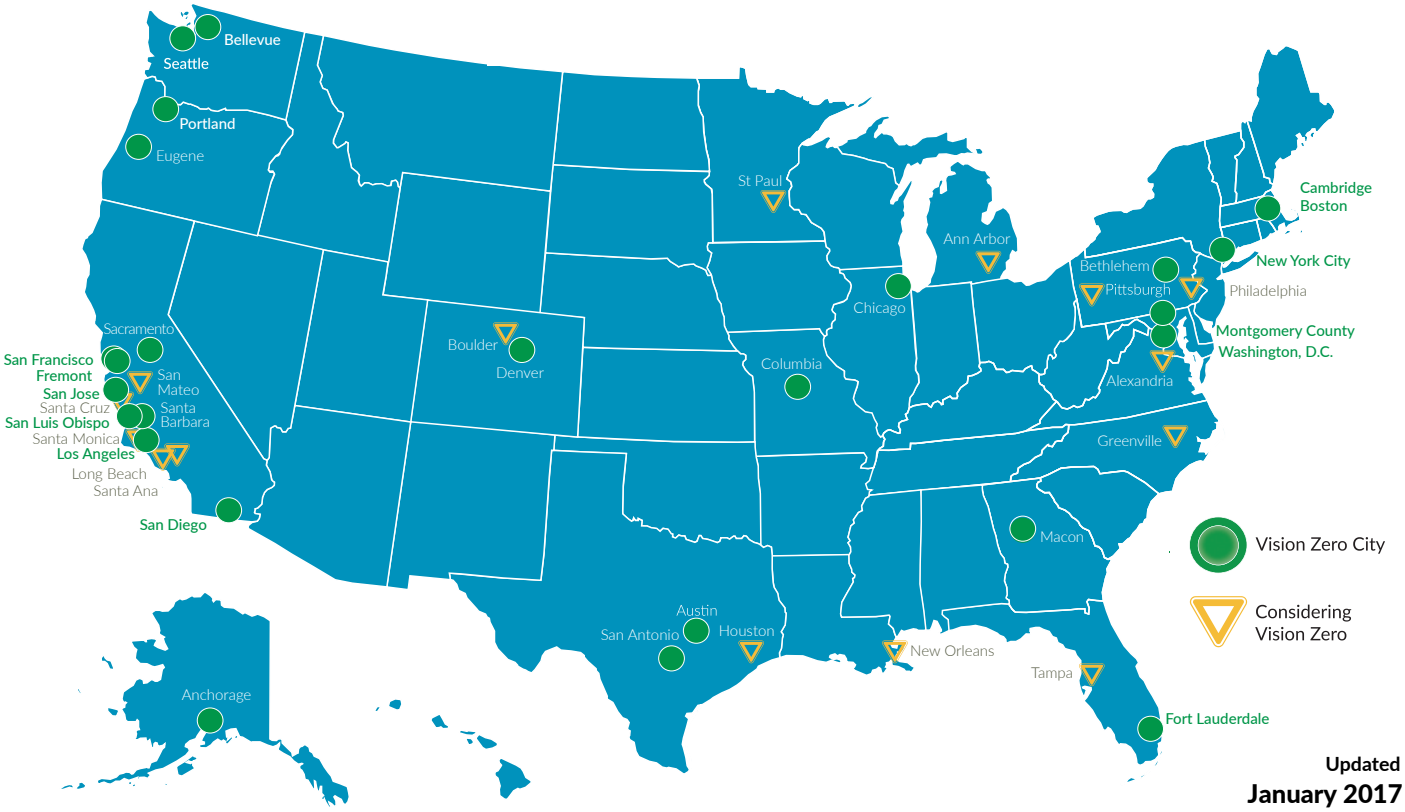
- **Progress will take time.** Some of these efforts may not yield visible results immediately; in fact, in some cases, they may take years to produce quantifiable improvements. This does not nullify their importance but rather speaks to the need for Vision Zero leaders to recognize, commit to, and communicate these deeper-level systems changes throughout their Vision Zero work. Stakeholders need to bring both a strong sense of urgency to their efforts, as well as a focus on sharing and measuring both face-forward and behind-the-scenes efforts as they develop longer-term investments in safety.

- **Finally, this is not intended to be a static resource.** As our understanding evolves of how best to advance Vision Zero, the practices and policies considered most promising will also evolve. We look forward to feedback and participation in this ongoing process of learning more and developing even better guidance for the growing number of U.S. communities embracing Vision Zero.

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.



Updated
January 2017

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 EXPECTATIONS:
Fundamental Principles

FUNDAMENTAL PRINCIPLES OF A MEANINGFUL VISION ZERO COMMITMENT

These principles can and should be applied anywhere, regardless of a community's size or political structure. While certain strategies and timing will differ from place to place, these principles are core to successful Vision Zero efforts.

1. **Traffic deaths and severe injuries are acknowledged to be preventable.**

2. **Human life and health are prioritized within all aspects of transportation systems.**

3. **Acknowledgement that human error is inevitable, and transportation systems should be forgiving.**

4. **Safety work should focus on systems-level changes above influencing individual behavior.**

5. **Speed is recognized and prioritized as the fundamental factor in crash severity.**

1. TRAFFIC DEATHS AND SEVERE INJURIES ARE ACKNOWLEDGED TO BE PREVENTABLE

Setting the goal of zero traffic deaths and serious, life-altering injuries recognizes that we have agency to influence safe conditions, systems, and behavior. As exhibited in the growing movement to replace the term traffic “accident” with “crash,” Vision Zero acknowledges that these tragedies are preventable, and the choices we make -- particularly at the policy level and related to the built environment -- have far greater impacts than we have traditionally accepted. What we have long called “accidents” are most related to policies, systems and environments that can be improved upon with collective action and political will.

Setting the shared goal of zero is bold, aspirational and reinforces that we need major shifts in thinking, planning, prioritizing and taking action. It shakes up the status quo. It also compels greater cooperation and shared responsibility among diverse stakeholders (including transportation planners, engineers, policymakers, law enforcement, emergency response teams, public health professionals, and community leaders.)

2. HUMAN LIFE AND HEALTH ARE PRIORITIZED WITHIN ALL ASPECTS OF TRANSPORTATION SYSTEMS

Vision Zero holds that traffic deaths and severe injuries are ethically unacceptable. All people deserve to be safe as they move about their communities, whether walking, bicycling, driving or taking transit, and regardless of age, race, ability, or background.

Just as a civilized society prioritizes clean air and safe drinking water for community members, Vision Zero holds that people fundamentally deserve safe transportation, and that it is government's responsibility to ensure conditions for such safety. Benefits (or perceived benefits) of speed and mobility are secondary to the primary goal of safety and health.

3. ACKNOWLEDGEMENT THAT HUMAN ERROR IS INEVITABLE, AND TRANSPORTATION SYSTEMS SHOULD BE FORGIVING

Vision Zero accepts that humans are fallible and will, at times, make poor choices that result in crashes. No amount of education, enforcement, or technological advancement will entirely eliminate that.

Therefore, Vision Zero builds upon the known threshold at which the human body can withstand a certain level of external violence without being severely injured or killed. Rather than trying to reverse the inevitability of human failure through education, Vision Zero holds that we should design the transportation system based on it. The responsibility for traffic safety is shared by system designers and road users. This responsibility begins with the system designers – see box.

The focus of Vision Zero is eliminating crashes that result in fatalities or severe injuries, not necessarily eliminating *every* crash occurrence. This focus will help prioritize strategies and resources.

VISION ZERO LAYS OUT THE FOLLOWING TIERED LEVELS OF RESPONSIBILITY:

FIRST, THE DESIGNERS OF THE SYSTEM ARE RESPONSIBLE for the design, operation and use of the transportation system.

SECOND, ROAD USERS ARE RESPONSIBLE for following the rules of the transportation system.

FINALLY, when some road users inevitably fail to follow the rules due to lack of knowledge, discipline, ability, or understanding of the system, **DESIGNERS MUST TAKE NECESSARY STEPS** to ensure that the resulting crashes do not result in people being killed or seriously injured.

4. SAFETY WORK SHOULD FOCUS ON SYSTEMS-LEVEL CHANGES ABOVE INFLUENCING INDIVIDUAL BEHAVIOR

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 behavioral choices.

This does not mean that individuals are not responsible for their own behavior, nor 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.

Policies and designs should encourage the desired behaviors by making them intuitive, rational, and easy to follow.

This more holistic, integrated approach, adapted from public health frameworks, differentiates Vision Zero from the traditional transportation safety approach.

THE SPECTRUM OF PREVENTION

Content: The Prevention Institute

The Spectrum of Prevention is a framework that promotes a multifaceted range of activities for effective prevention. It was originally developed by Larry Cohen, a leading advocate of public health, social justice and prevention and founder of the Prevention Institute. This framework has been used nationally in prevention initiatives. The Spectrum identifies multiple levels of intervention and helps people move beyond the perception that prevention is merely education.

5. SPEED IS RECOGNIZED AND PRIORITIZED AS THE FUNDAMENTAL FACTOR IN CRASH SEVERITY

THE TRANSPORTATION SYSTEM SHOULD BE DESIGNED FOR SPEEDS THAT PROTECT HUMAN LIFE.

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.

Insisting on travel speeds that are appropriate to the context and designed to be safe, first and foremost, is not only an effective strategy, but a critical foundation of Vision Zero.

A Vision Zero approach holds that speeds must be limited by a combination of policy, technology, culture and design to a level commensurate with the inherent safety of the road system.

THIS RESTS PRIMARILY ON THREE THINGS:

1. **How a roadway is designed to encourage (or discourage) certain levels of speed**
2. **What speed limit is legally set**
3. **How that speed limit is communicated and enforced**

VISION ZERO EXPECTATIONS:
Fundamental Policies & Practices

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 measureable 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 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.

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 implemention of the Austin Vision Zero Action Plan.
Photo credit: City of Austin

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.

RELEVANT EXAMPLES

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

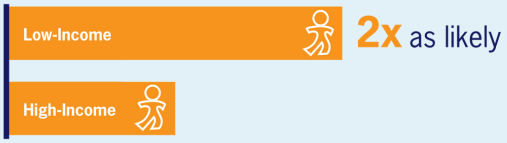
Ensuring that Vision efforts result in equitable outcomes is one of the most important challenges communities face. While equity is a complex topic that is affected by nearly every aspect of governance, applying serious thought to equity in the early stages of Vision Zero planning and implementation 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.* "

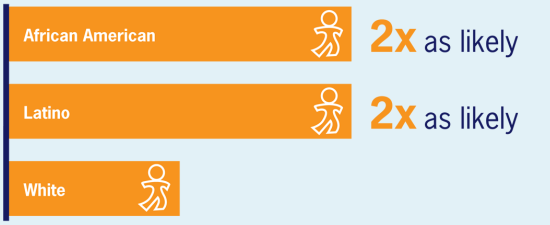
Equitable Vision Zero outcomes depend on more than serious acknowledgement in planning documents, of course. Follow-through is critical. Cities are finding that building trust through robust community engagement around Vision Zero is a vital strategy, particularly for communities who are not normally 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



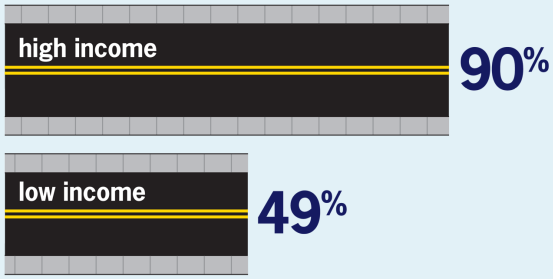
Governing, August 2014

People Killed While Walking



Governing, August 2014

Communities with Sidewalks



Bridging the Gap, *Income Disparities in Street Features that Encourage Walking*, 2012

Source: Safe Routes to School National Partnership

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

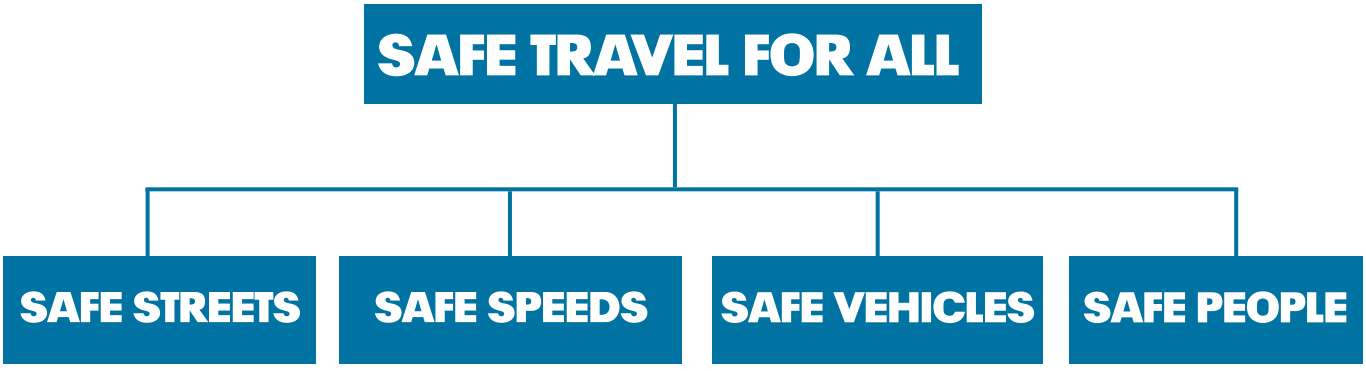
4. LEAD WITH ROADWAY DESIGN THAT PRIORITIZES SAFETY

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)*

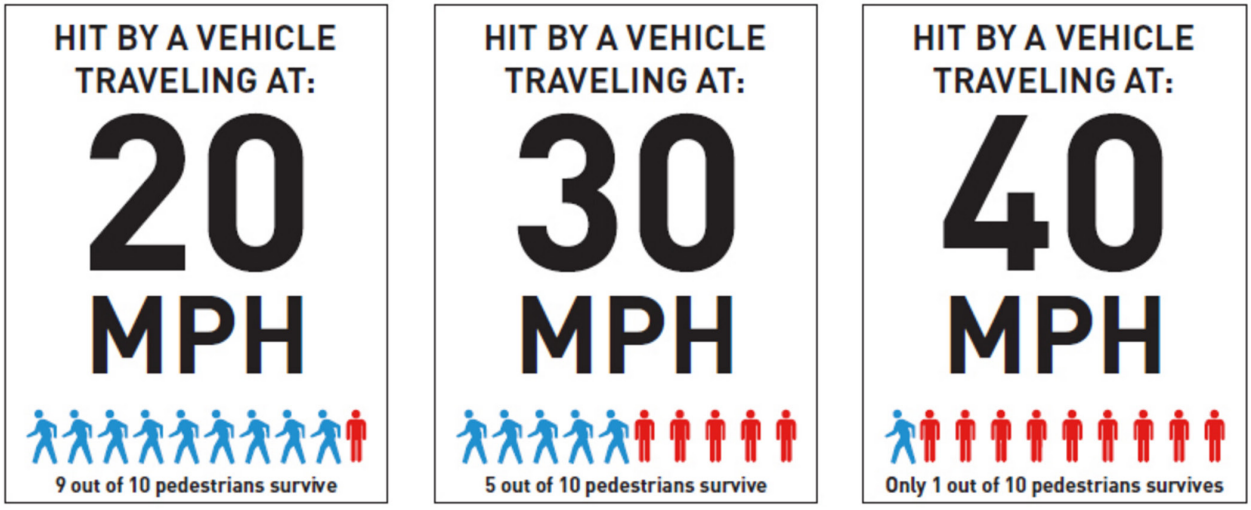


Image: Seattle Department of Transportation

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

CONCLUSION & ACKNOWLEDGEMENTS

Vision Zero work will be neither simple nor quick.

It will require new levels of political will, community engagement, cross-sectoral collaboration, data analysis and (sometimes painfully honest) assessments of what works and what does not, as well as an openness to change.

But ask whether this work will be worthwhile to any of the loved ones of the estimated 35,000 people lost to traffic violence last year in the U.S. The answer is undeniable. We can and must do better to protect those on our roadways, sidewalks and bikeways.

This will take far more than a commitment, verbally or symbolically, to Vision Zero. We must acknowledge the risk of this powerful, life-saving concept being minimized to a catchy slogan or political promise without a clear pledge to appropriate action.

We hope this document serves as a resource to understand, share, and move forth the principles, policies and practices of a meaningful Vision Zero goal.

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And we thank all of the pioneers in all of the Vision Zero communities around the world who are leading the way and sharing their work to ensure safe mobility for all.

ABOUT THE VISION ZERO NETWORK

The Vision Zero Network is a nonprofit project committed to advancing Vision Zero in the U.S. We are proud to support the life-saving efforts of the dedicated policymakers, implementers, and community leaders on the ground who are working toward safe mobility for all.

In addition to providing resources such as this, we also research and share case studies elevating promising strategies toward Vision Zero; facilitate peer exchange of ideas and efforts between communities; and work to a deeper understanding of and full commitment to Vision Zero across the nation.

This report's primary authors are Leah Shahum and Zach Vanderkooy, of the Vision Zero Network. Its designer is Rachel Krause of Banjo Creative.

Find out more about our work, as well as access to Vision Zero resources, at visionzeronetwork.org.

A PUBLICATION OF THE

VISION ZERO NETWORK

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VISION4FRONETWORK

Vision, Strategies, Action:

Guidelines for an Effective Vision Zero Action Plan

December 2017

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Primary authors include Kathleen Ferrier and Leah Shahum of Vision Zero Network and Louisa Gag and Stacy Thompson of LivableStreets Alliance.

Graphic design by Rachel Krause of Banjo Creative.

LivableStreets

Rethinking urban transportation

MASSACHUSETTS VISION ZERO COALITION

VISION ZERO NETWORK

INTRODUCTION

Across the country, U.S. towns and cities are committing to Vision Zero, which, in addition to setting the goal of zero traffic deaths or severe injuries, also commits communities to a fundamental shift in how they approach traffic safety.

Once a community has committed to Vision Zero, it should create an Action Plan to clearly lay out action steps, timelines, and priorities and include broader community and stakeholder input.

At its best, Vision Zero has the potential to galvanize a thorough and lasting shift in how we design and use our transportation systems to prioritize the preservation and quality of human life. At its worst, Vision Zero runs the risk of becoming a watered-down slogan that provides only a vague attempt toward real, life-saving change.

The guidelines presented here are meant for communities that have already committed to Vision Zero, to outline key principles of the initiative, and just as importantly, to help committed communities effectively move from planning to on-the-ground implementation and institutionalization of safety priorities.

WHAT DISTINGUISHES VISION ZERO

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all. In creating a Vision Zero Action Plan, stakeholders should understand, acknowledge, and discuss how Vision Zero differs from the traditional approach to traffic safety:

Any Vision Zero Action Plan must be rooted in the understanding that traffic deaths are preventable through:

- **The prioritization of proven safety strategies**
- **Multi-departmental collaboration toward the shared goal of zero**
- **A focus on data-driven decision-making**
- **A systems-based approach**

Vision Zero is not just "business as usual" with a new name; its core principles must be acknowledged and built into everyday efforts. (Read our publication *Moving from Vision to Action* to learn more on Fundamental Principles, Policies and Practices of Vision Zero.)

TRADITIONAL APPROACH		VISION ZERO
Traffic deaths are **INEVITABLE**		Traffic deaths are **PREVENTABLE**
PERFECT human behavior		Integrate **HUMAN FAILING** in approach
Prevent **COLLISIONS**	VS	Prevent **FATAL AND SEVERE CRASHES**
INDIVIDUAL responsibility		**SYSTEMS** approach
Saving lives is **EXPENSIVE**		Saving lives is **NOT EXPENSIVE**

HOW TO USE THIS GUIDE

A Vision Zero Action Plan should be a living document. This guide is designed to help cities who have committed to Vision Zero build an implementation plan that is concrete and action driven, while being responsive to the context and needs of the community you are serving.

This guide lays out two key components of a strong Action Plan: **Foundational Elements** and **Actionable Strategies.** These key components are underpinned by a process of continued **Community Engagement** and attention to **Equity.** Below we have defined each of these components in more detail.

All together this creates a guide that is a road map for action, as well as a tool for measuring and assessing progress towards the bottom line goal of eliminating severe injury crashes and fatalities.

FOUNDATIONAL ELEMENTS

Foundational elements are just that - foundational to the success of Vision Zero implementation. These are baseline best practices for creating any strong plan of action.

ACTIONABLE STRATEGIES

While every city and town is unique, there are certain strategies that are fundamental to achieving Vision Zero. This is especially important to ensure local actions follow the Vision Zero strategy of prioritizing safe roadway design and managing speed, amongst other strategies.

ROBUST COMMUNITY ENGAGEMENT

The process of building an Action Plan is just as important as the final product. Vision Zero is based on the concept of shared responsibility for safety, and outreach and engagement to communities – especially those who are most vulnerable on the roadways – is absolutely essential for success.

★ Recommendations to underpin the success of your Vision Zero Action Plan:

1. Create a multi-stakeholder Vision Zero Task Force that includes perspectives from representatives in public health, transportation, policy makers, police, community, and advocates, among others.

2. Conduct meaningful community outreach prior to releasing the Action Plan, in order to inform its priorities.

3. Gather input from residents, **particularly those in Communities of Concern**—specifically low-income communities, communities of color, seniors, children, people with disabilities, and people who rely on walking, biking, and transit as their primary means of transportation—about what they see and experience on the streets. Learn about their unique context and adapt the language and approach you are using.

EQUITY PRIORITY

Equity is not only a desired outcome of Vision Zero, it is integral to every component of Vision Zero planning and implementation. Equitable strategies such as prioritizing safety improvements in areas that have historically been underserved, and building robust engagement strategies to reach those who are most vulnerable on the roadways and who have not typically been included in traditional city planning processes are fundamental to achieving Vision Zero.

★ Recommendations to underpin the success of your Vision Zero Action Plan:

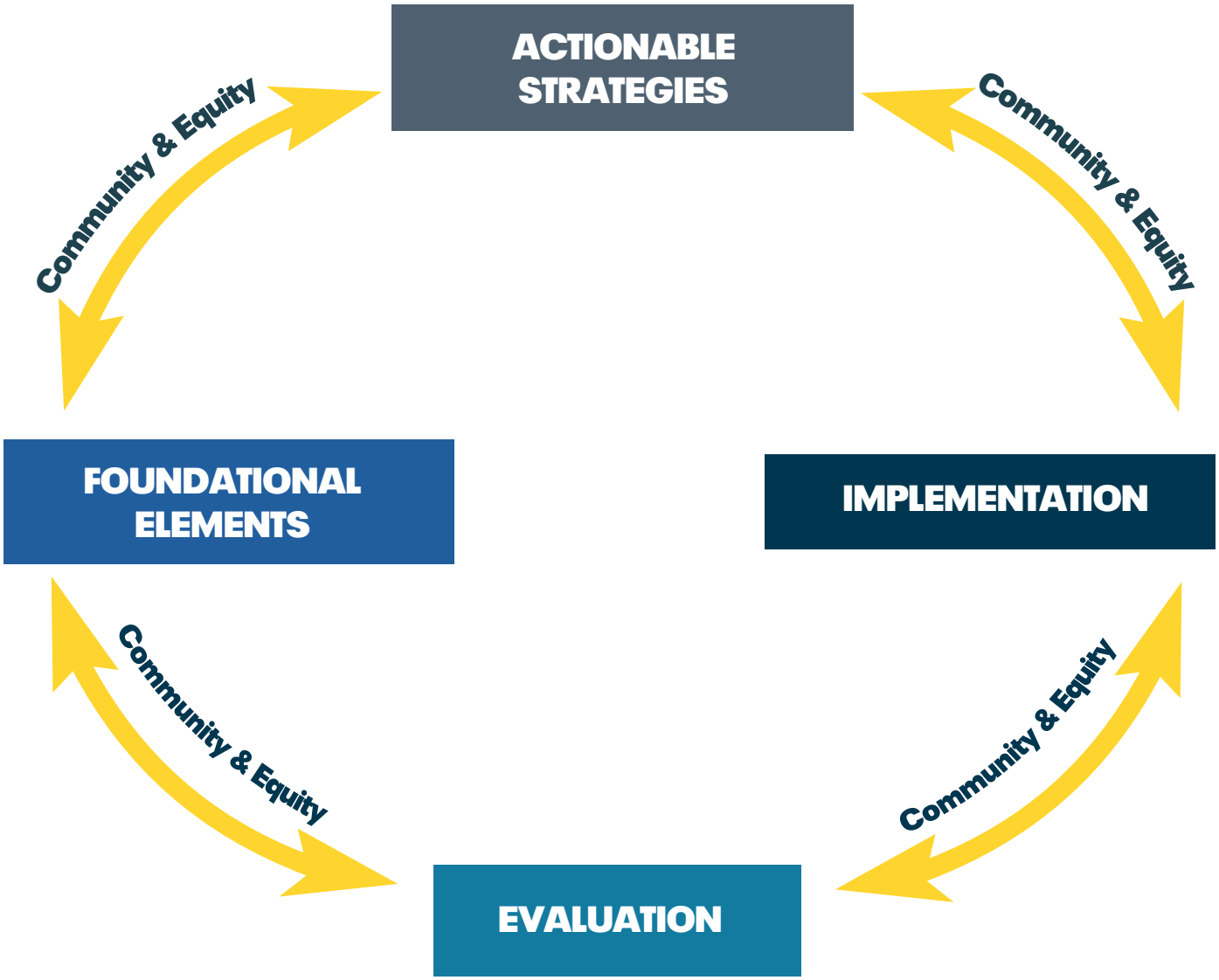
1. Prioritize outreach and street design safety efforts in Communities of Concern, which have been traditionally underserved.

2. Utilize data to determine if people of color are disproportionately being targeted by law enforcement in your community. Make a public commitment that Vision Zero efforts will not result in racial profiling and commit to report publicly on this issue to build trust with the community.

3. Provide anti-racism and cultural competency training for all staff and departments involved in Vision Zero.

Throughout this document, we have provided examples of what equitable approaches might look like as you build out the Foundational Elements and Actionable Strategies for your Action Plan. These examples should not be considered all inclusive, as we acknowledge this is an area with great room for expansion and improvement.

THE VISION ZERO APPROACH



A good action plan is a living document and includes a dynamic, iterative process to establish and implement strategies, evaluate progress, and make corrective actions as needed, all the while engaging community and prioritizing equity.

FOUNDATIONAL ELEMENTS

1. BUILD A ROBUST DATA FRAMEWORK

Vision Zero is a data-driven approach, and gathering, analyzing, utilizing, and sharing both formal data on injury crashes and community input to understand traffic safety priorities is fundamental to Vision Zero success.

We recommend that injury crash data be collected before the Action Plan is created, focusing on fatal and serious injuries, specifically.

The data should answer questions like:

» Are injury crashes more likely to occur in certain locations? At certain times of day?

» Are some demographics and road users over-represented in injury crashes? If so, who? Where?

» What crash factors are prominent? (Examples include behaviors such as high speeds, left turns, or the lack of Complete Streets facilities for people walking/bicycling.)

It is also important to consider who is involved in collecting and putting forward the data. A burgeoning best practice includes supplementing traditional injury crash data collected by police, with hospital data. This has been shown to better represent certain populations, such as low-income and communities of color, and those walking and bicycling. Including public health department professionals, policy makers, and other stakeholders in the data collection and assessment process, along with those in the transportation and police departments, can help ensure a more complete and comprehensive understanding of the data.

Ultimately, analysis of Vision Zero data should lead to the development of a High Injury Network that geographically identifies locations where investments in safety are most urgent, which in turn will drive your implementation strategy. Given that all communities have limited resources, this data-driven approach will help allocate resources to those locations that need them most.

EQUITY LENS

While data is important, it also needs context and usually does not tell the full story on its own. For example, communities that have been systematically marginalized may be less likely to report traffic crashes. Additionally, some locations feel so dangerous and unwelcoming that people avoid walking or biking there, which means they are not elevated as problem spots with high injuries, but still may deserve attention. Depending on data alone will leave gaps in your strategy and may compound inequities in already underserved communities. To gather an accurate picture, a successful and equitable data-driven approach will require both collecting data as well as a robust community engagement process that prioritizes outreach in Communities of Concern.

RELEVANT EXAMPLE

PORTLAND'S VISION ZERO PROGRAM overlays the city's High Injury Network with its Communities of Concern as shown in the image below. Cities including Denver, Los Angeles, Chicago, and San Francisco use a similar methodology.

2. SET MEASURABLE GOALS WITH A CLEAR TIMELINE FOR IMPLEMENTATION

Clear, measurable short-term and mid-term goals, combined with timelines and ownership from responsible government agencies, will create a framework that is easier to evaluate and fund, and will build buy-in, accountability, and transparency throughout the implementation process.

We recommend identifying your "reach zero year" as a baseline. Many cities are using a 10 year time frame as their baseline. Your Action Plan should then include near term (2-3 year) goals along with interim goals and measures of progress (5-8 year time horizon). This will ensure that your Action Plan is more than just a 1-2 year list of priorities, but truly a long-term strategy.

Each goal identified in your Action Plan should be measurable and provide answers to the following questions:

» What does success look like? What are the measures of success?

» Who is primarily responsible for achieving this goal and in what timeframe?

» What are the conditions and limitations for success? (For example, are more staff and/or funding needed in certain areas to succeed? If so, be clear about that need.)

EQUITY LENS

There is overwhelming evidence that communities of color are disproportionately impacted by traffic crashes. When setting goals for Vision Zero, it is important to both acknowledge these disparities, as well as set specific goals designed to close this gap, in addition to reducing the overall number of serious crashes.

RELEVANT EXAMPLE

EACH OF THE STRATEGIES LISTED IN PHILADELPHIA'S VISION ZERO ACTION PLAN includes the Lead Agency and a timeline for implementation. The timeline distinguishes between short-term (1 to 3 years) and long-term goals.

2) Establish plans and processes to internalize Vision Zero principles within department operations

ACTION ITEM	DESCRIPTION	LEAD AGENCY	VISION ZERO YEAR
2.1	Integrate Vision Zero into the City of Philadelphia's Development Services Program Checklist to ensure that streets are being designed for the most vulnerable roadway users	P&D	1
2.2	Continue the routine Philadelphia Streets resurfacing program and include pedestrian/bicycle infrastructure and loading zones as part of resurfacing projects, as informed by a multimodal improvement prioritization program	Streets	1+
2.3	Continue to expand the ongoing sidewalk inventory efforts to identify and prioritize improvements for City-owned and private sidewalks	oTIS/ P&D/ Streets	1+
2.4	Integrate Vision Zero into the City of Philadelphia's Development Services Program Checklist to ensure that streets are being designed for the most vulnerable roadway users. Update the Philadelphia Pedestrian and Bicycle Master Plan and include the following elements: · Address line of sight issues; · Define protected bike lanes and protected intersections; · Standardized speed limit reduction by roadway type; · Other innovative roadway treatments in conjunctions as they are developed and evaluated	oTIS/ P&D/ Streets	1-2
2.5	Conduct a study to identify best practices in peer cities for sidewalk repair and enforcement programs in construction zones, as well as recommendations for Philadelphia	oTIS	2
2.6	Update the Philadelphia Pedestrian and Bicycle Master Plan and include the following elements: · A pedestrian and bicycle safety action plan; · Gaps analysis and prioritization study for sidewalk and bikeway network gaps	oTIS/ P&D	2-3
2.7	Develop comprehensive Access Management Policy and Right-Of-Way Standards that take into account driveway placement (among other potential safety hazards)	Streets	2-3
2.8	Develop pick-up and drop-off safety training for School District schools	oTIS/ Streets	3
2.9	Create database of streets and intersections with line of sight issues	Streets	L/T

3. BE ACCOUNTABLE

Vision Zero is rooted in the shared responsibility among system designers and policymakers to design and operate safe systems for transportation. Clear ownership of Action Plan strategies is important to achieving success and long-term institutionalization of Vision Zero principles and outcomes.

Each Action Plan strategy should identify the lead agency responsible, along with supporting/partner agencies, and budget needs.

Being clear about the budget implications for each strategy will help ensure the sustainability of your Vision Zero work and identify the need for additional resources early on. This will also help to foster more cross-departmental collaboration and community partnerships to help fill those resource gaps.

Questions you should answer for each strategy:

» Is the strategy currently funded? If not, what is the need?

» Will you need to invest in training for planners, engineers, public works staff, police, or others to ensure everyone is working with the same understanding of Vision Zero implementation?

» Are there other key influencers outside of the city family that will be key to this goal's success, such as the county or state? If so, lay out an action to address this need.

» Have you considered the seasonality of your Action Plan? Do annual weather patterns impact your construction schedules? Will you need to buy new equipment to ensure year-round maintenance of new facilities?

EQUITY LENS

When you are planning annual Vision Zero funding priorities, make sure to include support for training and resources for city staff on the role structural racism has played in creating inequitable street and safety conditions in your community. It is important to ensure that municipal staff have the training, resources, and tools necessary to achieve the goals they've been assigned in an equitable manner.

RELEVANT EXAMPLE

Action	0-2 Years	3-5 Years	Partners*
Establish a Vision Zero program within the City			
Establish a permanent, dedicated funding source for Vision Zero implementation and coordination. Continue to create a Vision Zero program with dedicated staff.	$2M/year; 1.5 FTE/year	$3M/year; 2 FTE/year	DPW, *Mayor's Office, DPD, DEH, CDOT*
Coordinate existing funding already going to Vision Zero projects or that could be applied to such projects.	Complete action		DPW, BMO, *CDOT*
Institutionalize Vision Zero as the City's approach to its transportation system			
Convene regular meetings of safety stakeholders to review traffic safety performance and determine strategies for improvement.	6 meetings/ year	6 meetings/ year	DPW or Mayor's Office, *DPD, DEH, others*
Convene regular meetings of executive-level departmental representatives to coordinate Vision Zero efforts.	4 meetings/ year	4 meetings/ year	Mayor's Office, Xcel Energy, *DPW, DPD, DEH, others*
Ensure that Denver Vision Zero staff are represented at CDOT Region 1/City and County of Denver coordination meetings.	Ongoing action	Ongoing action	DPW, *CDOT*
Make the City and County of Denver a model Vision Zero adopter, including possible fleet modifications, operational changes, and training.	Ongoing action	Ongoing action	DPW

DENVER'S ACTION PLAN includes time-bound measurable goals with the responsible city departments identified.

4. ENSURE TRANSPARENCY

The process of establishing baseline data, creating the Action Plan, and assessing progress towards the goal of zero must be transparent to key stakeholders and the broader community.

Provide regular opportunities to measure progress, celebrate success, identify unforeseen challenges, prevent against problematic actions, and create an opportunity for course-corrections when needed.

At a minimum, cities should prioritize the following actions to promote transparency:

» Maintain a comprehensive, public website to share crash data and progress on Action Plan strategies, and solicit feedback on safety concerns, projects, and strategies;

» Meet routinely with your Vision Zero Task Force to solicit input, review data, and provide ongoing feedback on progress and challenges;

» Meet with and solicit input from residents in an ongoing dialogue about Vision Zero projects, priorities and safety concerns; and

» Seek opportunities for 3rd party assessment of your progress, and report regularly (annually at a minimum) to key stakeholders, decision making bodies, and the public.

EQUITY LENS

As part of San Francisco's Vision Zero commitment, the city's Traffic Commander reports quarterly to the SF Police Commission, in a public forum, on their traffic enforcement activities, providing opportunities for transparency and ensuring against problematic activities, such as racial bias in traffic stops.

RELEVANT EXAMPLE

SEATTLE routinely posts Vision Zero updates on its website. For example, each of the projects listed below opens to a new page with more project details and information for "What's happening now?" The city also provides progress reports and additional project analyses to update the public.

Rainier Ave S Corridor Improvements

SDOT is designing options to help reduce crashes and improve bus reliability on Rainier Ave South

35th Ave SW Road Safety Corridor Project

SDOT has begun a collaborative process to review roadway conditions along 35th Avenue SW

Banner Way NE

Construction is nearly complete along Banner Way NE. We will be collecting data and monitoring this project, and we will be releasing a 1-year evaluation report

NE 65th St Vision Zero Project

SDOT has begun a collaborative process to review street conditions along NE 65th St

23rd Ave E Vision Zero Project

Enhancing safety & mobility on 23rd/24th Ave E between E John St and E Roanoke St

Protected Bike Lanes

A bikeable city is one where people ride bicycles because it is a convenient, fun, safe, and healthy choice

ACTIONABLE STRATEGIES

PRIORITIZE ROADWAY DESIGN

Roadway design is the most important factor that influences speed and safety. Cities should consider and plan transportation systems that make slower, safe speeds the norm to protect the most vulnerable road users, especially in areas with historic patterns of fatalities and serious injuries, which will, in turn, mean that all road users are safer.

Recommended Actionable Strategies:

1. Invest in capital safety treatments in high injury areas, prioritizing improvements in Communities of Concern. Along with large capital improvements, consider low-cost, near-term safety treatments, such as painted corner sidewalk extensions and paint-and-post-protected bike lanes.

2. Identify intersections, corridors, and areas through predictive analysis where severe crashes are likely to occur, based on characteristics of the built environment, to proactively target interventions and prevent future serious crashes.

3. Create a rapid response protocol and delivery timelines for safety improvements when serious crashes do occur. This includes a rapid, on-the-ground assessment of the crash scene and immediate implementation for short-term or pilot interventions.

4. Employ policies including Complete Streets and Transit First in all projects in order to increase safety for all modes, and to boost the number of trips by walking, bicycling, and transit. Overall, more people moving by these modes and fewer by private autos will boost safety.

Public transportation investment is among the most cost effective ways to enhance traffic safety for a community. Public transit passengers have less than 1/10 the per-mile crash rates as automobile occupants, and transit-oriented communities have less than 1/5 the total per capita traffic fatality rates as in automobile-dependent communities.

Source: American Public Transportation Association

FOCUS ON SPEED MANAGEMENT

In addition to roadway design, cities should employ specific strategies to reduce speed for the sake of safety. Most important is designing (or redesigning) roadways for safe, intended speeds. Proven countermeasures include lowering speed limits and the smart use of automated speed enforcement. A 2017 study by the National Transportation Safety Board recommends both greater usage of automated speed enforcement and flexibility for cities to lower speeds for the sake of safety.

Recommended Actionable Strategies:

1. Prioritize designing streets to reduce vehicle speed in the High Injury Network first. Most Vision Zero cities have found that a relatively small percentage of the local road network contributes to the majority of severe crashes. Reducing speed on these roads through proven design measures will bring some of the biggest benefits.

2. Lower speed limits to fit context. In communities where there is a mix of people walking, biking, driving, and taking transit, speeds are generally more appropriate in the 20-25 mph range, and particularly in areas with schools, senior centers, parks, and transit centers.

3. Institute an automated speed enforcement program, a strategy which is proving effective in encouraging safe behavior and saving lives in communities in the U.S. and around the world. This should be carefully planned to ensure that safety and equity are the priorities of the program, avoiding the pitfalls of troubling perceptions about an over focus on revenue generation.

4. Create a neighborhood traffic calming program to reduce the number and severity of crashes on residential streets. These programs can be designed to allow communities to identify their own problems and nominate themselves for projects as in Boston's Neighborhood Slow Streets program.

UTILIZE IMPACTFUL EDUCATION STRATEGIES

While roadway design and speed management are core to Vision Zero, education can bolster the success of Vision Zero implementation. While this includes educating people about safe road behaviors, it also includes educating policy makers, decision makers, and other influencers about the importance of Vision Zero and the strategies that are proven to be most effective in order to make real change.

Recommended Actionable Strategies:

1. Use data and research to prioritize the most effective education/outreach strategies. This includes focusing on dangerous driving behaviors such as speeding, distracted driving, and driving under the influence, while avoiding overemphasizing attention on "distracted" pedestrians. Using this data-driven approach to proactively educate key stakeholders, including government partners and community members, about the leading causes and locations of injury crashes helps align efforts appropriately.

2. Implement or expand Safe Routes educational programming, such as Safe Routes to School, Safe Routes for Seniors, Safe Routes for People with Disabilities. These efforts should prioritize vulnerable populations and high crash areas, as well as areas targeted for increasing walking and bicycling trips.

3. Develop a Vision Zero training manual to share with key stakeholders. Training can include high-level principles, communications strategies, leading causes of injury crashes, the definition and meaning of the High Injury Network, etc. We also recommend requiring all municipal employees and contractors who drive a vehicle as part of their job to participate in Vision Zero safety trainings.

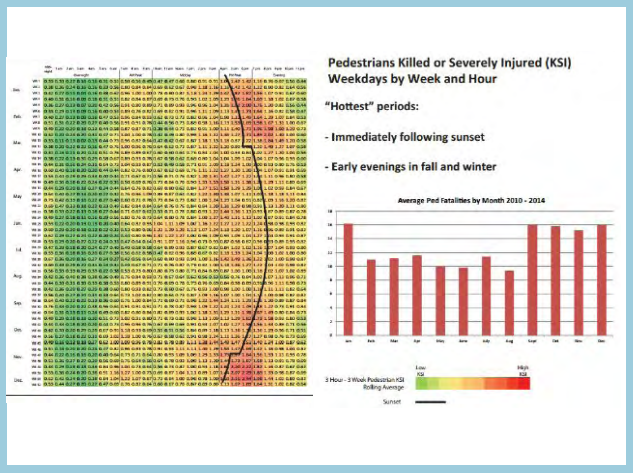
4. Require Vision Zero training for frequent drivers, such as fleet operators, taxi drivers, and large vehicle operators to meet certain safety practices. Cities can model good behavior by ensuring their own fleets, and those they contract with, require Vision Zero safety training.

EQUITY LENS

Develop educational materials and communicate in languages that are appropriate for diverse communities. This may include multilingual flyers, pop-up information tents within the community, having information available on the city website, and working with community-based organizations who have developed relationships and trust in that community. Read our report *Elevating Equity in Vision Zero Communications* for more information.

RELEVANT EXAMPLE

NEW YORK CITY: Injury crash data showed a concentration of serious crashes during late afternoon and evening hours, so the Task Force developed and implemented a multi-pronged education and enforcement seasonal campaign aimed at night safety. The city measured a 30% decrease in traffic fatalities for the time period that year compared to the same time frame during the three previous years. (Read here for more details on NYC's research and campaign.)



ENSURE ENFORCEMENT IS EQUITABLE

As we emphasize Vision Zero's safe systems approach on the front-end – particularly through street design and speed management strategies proven to encourage safe behavior – we can reduce the need to correct for individual problems on the back-end via traffic stops, ticketing, and fines. Admittedly, this requires long-term investment to shift our environment and our culture. In the meantime, we must acknowledge and address today's pressing problems related to racial bias in traffic enforcement and, by extension, to Vision Zero enforcement activities.

It is important that promoters of Vision Zero in U.S. communities recognize that officer-initiated traffic stops allow for higher-than-average levels of individual discretion and can be a slippery slope for racial bias and aggressive police action. The broader Vision Zero community has a role and responsibility in improving – not exacerbating – these problems.

The most appropriate enforcement strategies will focus on providing education on the most dangerous driving behaviors and will be community supported, as well as ensure transparency into police activity. While enforcement has a role to play in traffic safety efforts, it should not be a primary strategy and should be approached thoughtfully.

Recommended Actionable Strategies:

1. Vision Zero Action Plans should commit to employing enforcement strategies that will not result in racial profiling. (See Portland's example in sidebar.) Of course, a commitment is not all that is needed, but it is an important first step.

2. Focus enforcement on the most dangerous behaviors based on reliable data to ensure that this is communicated effectively to ensure public understanding. Activities such as speeding and violating pedestrian right of way are more dangerous than minor infractions such as broken taillights or overly tinted windows, so police activity should focus on the former.

3. Provide regular updates on law enforcement's traffic stop activities. This is essential to building trust amongst the community for a productive role for enforcement. Understanding who is being stopped by police, where, and when, as well as who is ticketed, etc. will be important information to ensure accountability.

4. Support a Community Policing approach as part of Vision Zero work. The U.S. Department of Justice presents 10 Principles of Community Policing, including two that police and the community share ownership, responsibility, and accountability for the prevention of crime, and that mutual trust between the police and the community is essential for effective policing.

5. Create a diversion program to provide alternatives to traffic fines. Recognizing the disproportionate impact of traffic fines on low-income communities, we recommend developing diversion programs that offer education and positive reinforcement of safe behavior in place of overly burdensome fees.

EQUITY LENS

When utilized properly, automated speed enforcement can reduce the number of crashes as well as severity of injuries. Though far under-used, this approach is cited as one of the most effective in influencing behavior and lowering dangerous speeds, while also de-emphasizing officer-initiated traffic stops that cause concern about racial profiling. If used inappropriately, these technologies can reinforce structural inequities. It is important to recognize that no piece of technology exists in a vacuum. Any automated speed enforcement program must be developed with input and buy-in from the most marginalized and vulnerable people in your community.

RELEVANT EXAMPLE

Portland's Vision Zero Action Plan includes an explicit statement that the plan will be equitable and "it will not result in racial profiling." The diversity of participants drafting Portland's Action Plan brought equity to the forefront throughout its development. As a result, Portland explicitly commits to develop and implement a set of actions that would not lead to disproportionately negative outcomes for communities of color and low-income communities.

For more about Portland's approach and other recommendations regarding centering equity in Vision Zero, see visonzeronetwork.org/resources/equity.

EVALUATION & RESOURCES

While elements of evaluation are included throughout this guide, we want to highlight the importance of creating a transparent and regular evaluation process for your Action Plan. Evaluation can be one of the best ways to ensure your Action Plan is a living document. How updates will be developed should be included in the Plan, as well as when progress updates will be provided to the public.

Lead agencies working toward Vision Zero should regularly update policymakers, other agencies, and the public. This reporting and evaluation process should include regular updates in a variety of forums such as community conversations, events, report cards, or other creative engagement strategies.

Recommended Actionable Strategies:

1. Highlight and celebrate accomplishments, but be real about challenges. Be transparent when you don't achieve a goal, assess what happened, and recommend changes to the strategy to correct course.

2. Revisit the Foundational Elements every time you modify a goal or strategy. A good Action Plan is a living document that is utilized often and evolves over time. However, it is important to maintain your foundation throughout the process.

3. Utilize the Community Engagement and Equity Strategies outlined in this document to get feedback on progress from the people in your community most impacted by traffic crashes.

CONCLUSION

Ultimately, there are no shortcuts or compromises in achieving the goals of Vision Zero. The metrics of success are simple: one fatality or serious injury in traffic is one too many. A strong Action Plan will be a road map for success in your Vision Zero efforts.

RESOURCES

Numerous resources available at www.visionzeronetwork.org/resources

VISION ZERO PRINCIPLES

Why Vision Zero Differs from the Traditional Approach to Traffic Safety

Nine Components of a Strong Vision Zero Commitment

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

COMMUNITY ENGAGEMENT

Incorporating and budgeting for community group engagement

Philadelphia, Pennsylvania, p. 18

Denver, Colorado, p. 8

EQUITY

Vision Zero Equity Strategies for Practitioners

Elevating Equity in Vision Zero Communications

Health Equity Road Map for Getting to Zero

Untokening 1.0 - Principles for Mobility Justice

COMMUNITIES OF CONCERN DEFINITIONS

Denver, Colorado, p. 6

Los Angeles, California

Portland, Oregon

San Francisco, California

HIGH INJURY NETWORK EXAMPLES

Denver, Colorado, p. 8

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San Francisco, California, p. 6

PROGRESS REPORTS

New York City, New York

Seattle, Washington

Washington, D.C.

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GRANT ALERT

U.S. DEPARTMENT OF TRANSPORTATION:

SAFE STREETS AND ROADS FOR ALL (SS4A) GRANT PROGRAM

This grant aims to enhance roadway safety nationwide, with objectives including supporting comprehensive safety action plans, funding innovative safety solutions, and assisting in project and strategy implementation.

GENERAL INFORMATION

Total Funding Available: $1,256,687,000

Minimum/Maximum Request: $100,000 to $10 million (planning and demonstration); $2.5 million to $25 million (implementation)

Match Requirement: The Federal share of an SS4A grant may not exceed 80 percent of total eligible project costs. Recipients are required to contribute a local matching share of no less than 20 percent of total eligible project costs. This match can be met through in-kind contributions or other non-Federal sources

SCHEDULE

MILESTONES	SCHEDULE
Application period opens	February 21, 2024
Planning and demonstration applications due	**April 4, 2024 May 16, 2024 August 29, 2024**
Implementation pre-applications due	April 17, 2024
Implementation applications due	**May 16, 2024**
Awarded projects announced	First round: May 2024 Second round: Not specified Final round: November 17, 2024
Agreements executed	12 months after award
Projects can begin	12 months after award

TYPES OF PROJECTS FUNDED

This grant funds two types of projects, as outlined below:

Planning and Demonstration Grants are for applicants without Action Plans. They fund the development or refinement of comprehensive safety action plans, defined as a strategic document that outlines effective measures to reduce road accidents and injuries. These grants also support further safety analysis and pilot projects to test new safety improvements. Example projects include:

- Comprehensive safety analysis to identify high-risk areas.
- Community engagement activities to gather input on safety concerns.
- Development of goals and strategies for reducing roadway fatalities and serious injuries.
- Planning and design for quick-build safety improvements as demonstration projects.
- Quick-build strategies to test roadway design changes, such as temporary bike lanes or pedestrian zones.
- MUTCD Engineering Studies for new traffic control devices or markings.
- Pilot programs for new safety technologies or approaches, such as adaptive signal control technology or pedestrian safety interventions.

Implementation Grants are for applicants who have an Action Plan or a similar document that meets several criteria. This type of grant helps execute specific safety-enhancing strategies and projects outlined in the plan, along with additional planning and demonstration efforts to update and improve the plan based on the latest insights. Example projects include:

- Infrastructure projects focused on improving pedestrian and bicyclist safety, such as crosswalk enhancements, traffic calming measures, and protected bike lanes.
- Carrying out demonstration projects identified in an Action Plan, such as behavioral campaigns targeting specific safety issues like impaired driving, speeding, or pedestrian visibility.
- Operational improvements, including dynamic speed limit signage, improved street lighting, and intersection safety upgrades.
- Detailed design and engineering of safety improvements identified in an action plan.
- Environmental review and permitting processes for large-scale infrastructure projects.
- Development and testing of innovative technologies or approaches to be implemented as part of an Action Plan.

Applicants are encouraged to approach the application process with a holistic view, considering the interconnectedness of various safety strategies and the potential for integrated solutions to address complex safety issues. By focusing on comprehensive planning and engagement, entities can craft robust proposals that demonstrate a clear vision for significantly improving roadway safety in their communities.

evan brooks associates

Interested in applying? Please notify Daniel Bartelson, Principal, at daniel@ebaplanning.com or (626) 799-8011.

Evaluating Transportation Equity:

Guidance for Incorporating Distributional Impacts in Transport Planning

By Todd Litman (M)

WWW.SHUTTERSTOCK/MELITAS

Social equity refers to the distribution of benefits and costs, and the degree that distribution is considered appropriate. Transportation planning decisions can have significant equity impacts: they affect the allocation of public resources, economic opportunities, and quality of life. Most people care about these impacts and want their transportation system to be equitable. As a result, practitioners have a responsibility to consider equity impacts in transportation planning.

This is a timely issue.[1-3] In the past, transportation system performance was evaluated based primarily on travel speeds, which favored faster but more costly modes, such as driving, over slower but more affordable modes with lower external costs, such as walking, bicycling and public transit.[4] Equity received little consideration.

For example, during the last century, highway projects displaced many high-access urban neighborhoods.[5] The planning process recognized the benefits that those highways provided to motorists but gave little consideration to the reduced accessibility and environmental degradation they imposed on urban communities. Those projects are now widely criticized and some are likely to be removed, but the damage they caused is irreversible.[6]

These practices persist. Many transportation agencies continue to allocate funds using performance indicators and funding formulas that give little consideration to equity-related goals such as affordability, non-drivers' accessibility, public health, or local environmental quality. This favors roadway expansions over other transportation improvements, and so favors motorists over people who rely on other modes.

Consider another example. Most jurisdictions have off-street parking minimums. Where they are imposed on residential buildings they add hundreds of dollars to annual housing costs, and where imposed on commercial buildings they add a few dollars to a typical household's weekly grocery bills.[7] This is unfair—it forces car-free households to subsidize the parking costs of their car-owning neighbors—but the equity impacts are usually overlooked; when evaluating parking minimums, practitioners seldom analyze who ultimately bears the costs and how they affect affordability.

These examples illustrate the need for more comprehensive equity analysis in transportation planning. However, equity analysis can be challenging. A particular policy or planning decision may seem equitable if evaluated using one set of definitions and metrics, but not if evaluated using others. This article provides an overview of key transportation equity concepts and describes practical ways to incorporate equity analysis into planning.

Perspectives and Impacts

There are various types of equity. *Horizontal equity* assumes that people with similar needs and abilities should be treated similarly. *Vertical equity* assumes that disadvantaged people should receive favorable treatment. Table 1 describes five types of transportation equity.

Table 1. Types of Transportation Equity

Horizontal	***A fair share of resources*** (also called ***fairness*** or ***equality***). It implies that people should "get what they pay for and pay for what they get," unless subsidies are specifically justified.
	External costs. Costs that travel activities impose on other people, such as the delay, risk and pollution, are unfair. Fairness requires minimizing or compensating for such impacts.
Vertical	***Inclusivity - vertical equity with regard to need and ability.*** This considers how transportation systems serve people with disabilities, youths and seniors, and other special mobility needs. This justifies multimodal planning and universal design requirements.
	Affordability - vertical equity with regard to income. This considers how transportation systems affect lower-income people. Policies that favor lower-income people are called *progressive* and those that favor higher-income people are called *regressive*. This justifies policies that improve affordable modes and subsidize low-income travellers.
	Social justice. This considers how transportation systems serve disadvantaged and underserved groups, and address structural injustices such as racism and sexism.

It is generally infeasible to consider all possible factors in a planning process. A more practical approach is to define measurable equity objectives, such as those in Table 2. Planning decisions can be evaluated based on their effects on these objectives, and the planning process can identify policies to help achieve them.

Table 2. Typical Transportation Equity Objectives

Horizontal Equity		Vertical Equity		
Fair Share	***External Costs***	***Inclusivity***	***Affordability***	***Social Justice***
• Everybody contributes to and receives comparable shares of public resources. • Planning serves non-drivers as well as drivers. • Affected people are involved in planning.	• Minimize external costs. • Favor resource-efficient modes that impose less congestion, risk, and pollution on other people. • Compensate for external costs.	• Accommodate people with disabilities and other special needs. • Basic access (ensure that everybody can reach essential services and activities).	• Favor affordable modes. • Provide discounts and exemptions for lower-income users. • Provide affordable housing in high-accessibility neighborhoods.	• Protect and support disadvantaged groups (women, youths, minorities, low-income, etc.). • Affirmative action policies and programs. • Correct for past injustices.

This table identifies typical measurable equity objectives.[8] A planning process can evaluate specific policies and decisions based on whether they support or contradict these objectives. (WRT = With Respect To.)

Analysis Methods

This section describes ways to evaluate various types of transportation equity.

Horizontal Equity: A Fair Share of Public Resources

Many long-running transportation equity debates concern public resource allocation. Such analysis tends to reflect a particular perspective and often overlooks other impacts and goals. For example:

- State officials complain if they receive less federal highway funding than their motorists pay in fuel taxes.[9] However, most experts recommend that public funds be allocated based on cost efficiency or user needs; allocation based on tax payments can result in inefficient and regressive funding allocation.
- Highway advocates complain when fuel taxes are spent on non-highway projects, which they call *diversions*.[10] However, those critics ignore the fact that fuel taxes only fund about half of total roadway costs; their argument that motorists should "get what they pay for" ignores the corollary that motorists should also "pay for what they get."
- Highway cost allocation studies examined whether the road user fees paid by various vehicle types reflect their share of roadway costs.[11] But the U.S. federal government has not commissioned such a study since 1997 because their conclusions—that fairness requires higher taxes on heavy vehicles plus new fees to reflect congestion, crash risk, and pollution costs—face political opposition.

More comprehensive equity analysis considers a wider range of factors. For example, equity implies that the public resources spent on a mode or group should reflect its share of travel demands; if a mode generates 10 percent of trips, it is fair for it to receive 10 percent of investments or road space. Let's evaluate current infrastructure spending based on this principle.

North American communities typically spend about $25 USD annually per capita on walking facilities, $40 per capita on bicycling facilities, $200 per capita on public transit services, $1,000 per capita on roads and traffic services, plus more than $2,000 per capita on government-mandated off-street parking facilities, as illustrated in Figure 1.

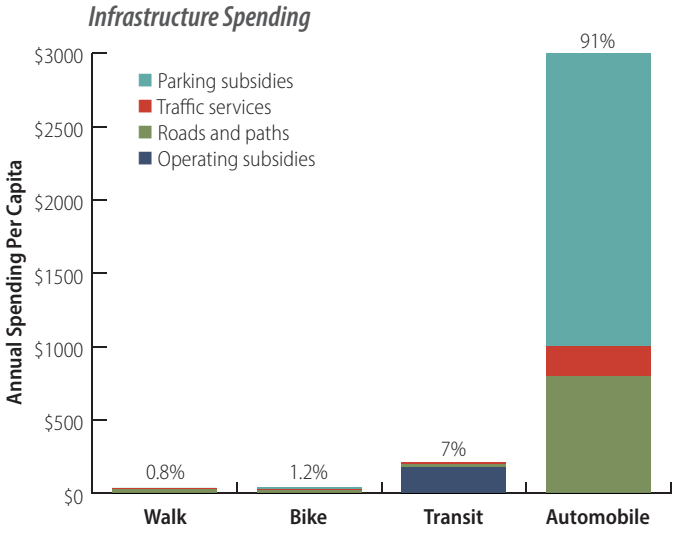

Figure 1. This graph compares infrastructure investments for various modes.[12-15]

Figure 2 compares expenditures on non-auto mode infrastructure with various indicators of their demands, including mode shares, traffic fatalities, the portion of travelers who use those modes at least occasionally, and typical mode share targets intended to help achieve congestion reduction, public health, and emission reduction

goals. As a result, horizontal equity could justify investing 10 percent to 30 percent of infrastructure spending on non-auto modes to ensure that current and potential users receive their fair share. This analysis suggests that people who rely on non-auto modes, or would like to, receive less than their share of investments.

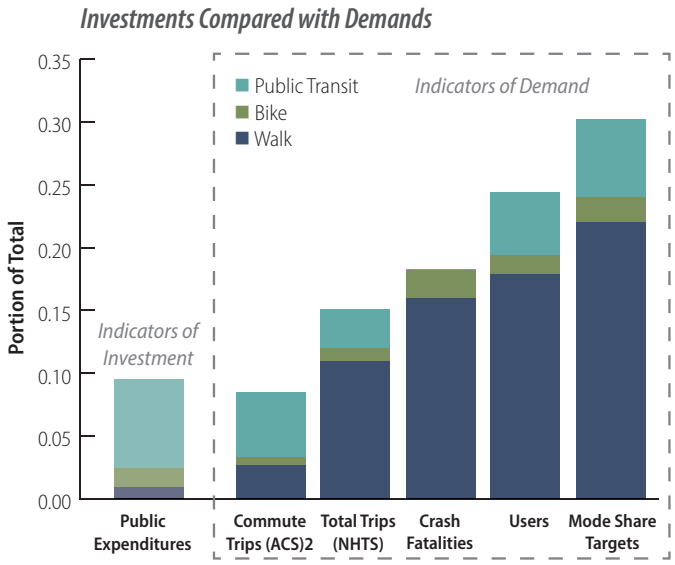

Figure 2. This figure compares spending on walking, bicycling, and public transit with indicators of their demands.[14, 16] This indicates that people who rely on non-auto modes receive less than their fair share of public investments. (ACS = American Community Survey. NHTS = National Household Travel Survey.)

Of course, this analysis can be structured in other ways that provide different results. Some evaluations only consider expenditures by a particular level of government, or measure impacts per passenger-mile, which ignores the greater annual travel-miles, and therefore greater infrastructure costs, by motorists compared with non-drivers. Since horizontal equity is concerned with fairness between people, analysis should generally measure impacts per capita.

Horizontal Equity: External Costs

Equity analysis can be applied to external costs, including the delay, risk, and pollution damages that travelers impose on other people. Horizontal equity requires that those costs be minimized and compensated so one group does not impose excessive costs on others.

Various studies have quantified and monetized (measured in monetary units) external costs.[17-20] Figure 3 illustrates these estimates. Because automobiles are faster, and require more space and energy than other modes, they tend to impose more delay, risk, noise, and air pollution than other forms of transport, particularly under urban-peak conditions.

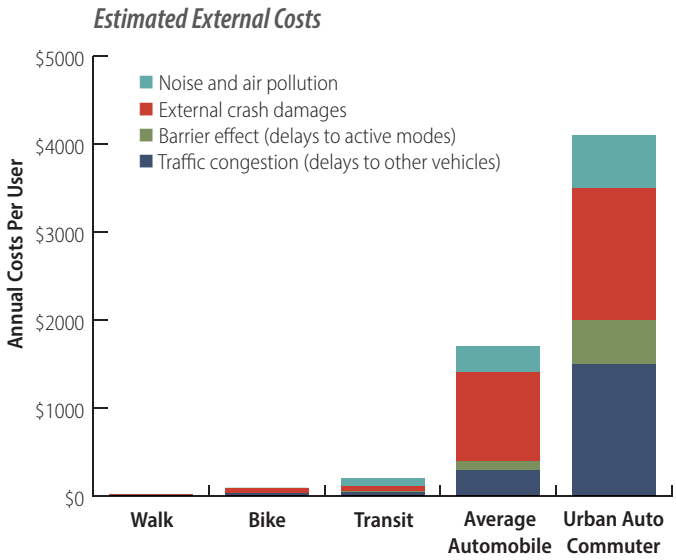

Figure 3. Transportation imposes various external costs on other people.[21] ("Barrier effect" refers to the delay and risk that wide roads and vehicle traffic impose on walking and bicycling.)

These external costs are inequitable:

- It is unfair that travellers using space-efficient modes, such as buses and rideshare vehicles, bear congestion delay caused by space-intensive modes such as automobiles. Fairness can justify bus and HOV lanes, and road pricing to internalize this cost.
- It is unfair that pedestrians and bicyclists bear excessive crash risk imposed by automobile traffic. Fairness can justify safety improvements, such as protected sidewalks, paths, bikeways, and traffic calming, financed with user fees.
- It is unfair that communities bear traffic noise and air pollution. Fairness can justify pollution reduction policies, such as electric vehicle mandates, fossil-fuel traffic restrictions and speed reductions, plus emission fees to internalize these costs.

Inequities also occur within a mode. For example, because automobile travel imposes significant external costs, people who drive more than average impose net external costs on motorists who drive less than average.

Road user fees are sometimes criticized as unfair to lower-income motorists, but that generally reflects incomplete analysis. Lower income residents tend to own fewer vehicles, drive less, and rely more on non-auto modes than higher-income residents.[22] As a result, disadvantaged groups tend to benefit overall if road user revenues are used to improve affordable modes.[23]

Inclusivity: Accommodating People with Disabilities and Other Special Needs

To be equitable, a transportation system must serve diverse users including travellers with impairments, young children, pets, baggage, and other special needs. Serving their demands requires multimodal planning to provide diverse travel options, plus universal design to accommodate travellers with disabilities and other mobility impairments.

Inclusivity can be evaluated by defining multimodal service quality standards and targets. For example, a community could establish targets that all streets will have accessible sidewalks, that 90 percent of households have an elementary school within a safe 20-minute walk, and all transit vehicles accommodate people with disabilities. Inclusivity can also be evaluated by comparing disparities between advantaged and disadvantaged groups, such as differences between non-drivers and drivers in the number of services and jobs that can be reached within 20 minutes. These factors can be analyzed using Walk Score, multimodal level-of-service ratings, universal design standards, and comprehensive accessibility models that measure the services and activities that can be reached within a given time period by various modes.[24-26]

Affordability: Serving Travellers with Low Incomes

Affordability refers to costs relative to incomes, and therefore people's ability to purchase basic goods within their limited budget. Affordability is a *potential*: even car-owning households may benefit from having more affordable options available if needed in the future. Experts define affordability as households spending no more than 45 percent of their budgets on transportation and housing combined; since households typically spend about 30 percent of budgets on housing, affordability requires that households spend no more than 15 percent on transportation—less if they have high housing costs, and more if their housing costs are lower than average.[18, 27]

Conventional transportation planning gives little consideration to affordability. If considered at all, affordability is evaluated based on individual costs such as fuel prices, road tolls, or public transit fares; total transportation costs are seldom considered.

Figure 4 compares typical user costs of various modes. Active modes have the lowest costs, public transit has moderate costs, and automobile travel is most expensive. Although lower-income motorists use various strategies to minimize their vehicle expenses, for example, by purchasing older vehicles and minimum insurance coverage, and sometimes performing their own repairs, it is difficult to legally operate a vehicle for less than $4,000 annually, or more for high annual miles.[21] Because automobiles sometimes incur large unexpected costs due to mechanical failures, crashes or traffic violations, lower-income motorists benefit from having affordable options available as an emergency backup.[28]

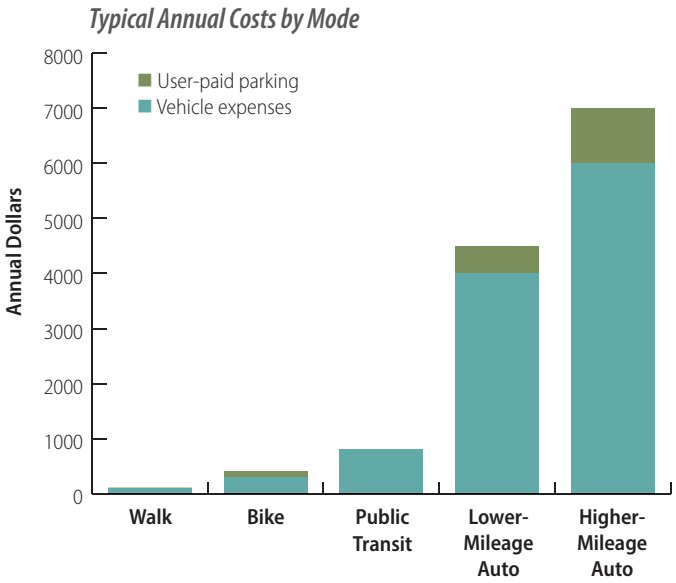

Figure 4. Walking, bicycling, and public transit are the most affordable modes. Automobiles are more expensive and sometimes impose large, unpredictable costs.[21]

To increase affordability, communities can improve lower-cost travel modes and create more affordable housing in compact, multimodal neighborhoods where it is easy to get around without a car. New tools can evaluate affordability.[29] The *Location Affordability Index* and the *Housing and Transportation Affordability Index*, estimate total housing and transportation costs, and therefore the potential savings provided by more affordable modes and more accessible locations.[18, 30]

Social Justice

Social justice considers structural inequities such as racism, sexism, and classism.[1, 31-32] It can be evaluated by identifying and measuring disparities between advantaged and disadvantaged groups in transportation *inputs* such as public investments; *outputs* such as the quality of walking, bicycling, and public transit services in disadvantaged neighborhoods; *outcomes* such as job access and employment rates; and *engagement* such as rates of participation in planning activities. This type of analysis can compare these factors for minority and non-minority, women and men, low- and high income communities, children and adults, and non-drivers and drivers. Social justice objectives can be addressed by establishing affirmative action policies, programs, and targets to eliminate unfair disparities.

Evaluating Equity Strategies

There are two general approaches to achieving equity objectives. *Structural* (or *functional*) strategies reform planning practices to support equity goals. These include multimodal planning

that improves affordable and inclusive transport options, pricing reforms to internalize external costs, and Smart Growth development policies that increase affordable housing options in multimodal neighborhoods. C*ategorical* (or *programmatic*) strategies are special policies or programs for designated groups. These include, for example, universal design standards to ensure that facilities and services accommodate users with impairments, transit fare discounts for seniors and people with disabilities, and special commuter bus services in high poverty areas. Because transportation planning can have many equity impacts, its analysis should be multifaceted. A plan would not become equitable by addressing one inequity while others are ignored.

Conclusions

Transportation planning decisions can have significant equity impacts, and most communities want to become more equitable, so practitioners have a responsibility to consider equity in their analysis. That can be challenging because there is no single way to evaluate transportation equity; there are multiple equity types, impacts, metrics, and groupings to consider. Planning decisions should reflect a community's equity needs and values, so it is important to incorporate public engagement that involves all stakeholders, particularly disadvantaged groups.

Because of this complexity, the most practical way to incorporate equity into planning is to define measurable objectives that reflect various perspectives and impacts, and identify policies to achieve them. These policies should usually include a combination of structural reforms to make the transportation system fairer and more inclusive, plus targeted programs to address specific injustices. New analysis tools can improve transportation equity analysis. They require detailed information on transportation costs and expenditures, plus multimodal levels of service, with particular attention to the travel demands and impacts on disadvantaged groups. **itej**

References

1. ITE (2020), *ITE Statement on Social Justice and Equality*, Institute of Transportation Engineers. https://bit.ly/33SUCKg (Accessed March 2, 2022).
2. Neil Pedersen (2020), *A Message From TRB Executive Director Neil Pedersen Regarding Recent Events*, Transportation Research Board. https://bit.ly/3ualiko (Accessed March 2, 2022).
3. Ersilia Verlinghieri and Tim Schwanen (2020), "Transport and Mobility Justice: Evolving Discussions," *Journal of Transport Geography*, Vol. 87 (doi:10.1016/j.jtrangeo.2020.102798). www.ncbi.nlm.nih.gov/pmc/articles/PMC7359804 (Accessed March 2, 2022).
4. Gregory H. Shill (2020), "Should Law Subsidize Driving?" *New York University Law Review 498*; U Iowa Legal Studies Research Paper No. 2019-03 (dx.doi.org/10.2139/ssrn.3345366).
5. Deborah N. Archer (2020), "White Men's Roads Through Black Men's Homes': Advancing Racial Equity Through Highway Reconstruction," *73 Vanderbilt Law Review 1259*, Public Law Research Paper No. 20-49; at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3539889 (Accessed March 2, 2022).
6. Kathleen McCormick (2020), *Deconstruction Ahead. How Urban Highway Removal Is Changing Our Cities*, Lincoln Institute. https://bit.ly/3Dp1xGU (Accessed March 2, 2022).
7. Eric Scharnhorst (2018), "Quantified Parking: Comprehensive Parking Inventories for Five U.S. Cities," Research Institute for Housing America Special Report, Mortgage Bankers Association. https://bit.ly/2LfNk4o (Accessed March 2, 2022).
8. Todd Litman (2022), *Evaluating Transportation Equity: Guidance for Incorporating Distributional Impacts in Transport Planning*, Victoria Transport Policy Institute. www.vtpi.org/equity.pdf (Accessed March 2, 2022).
9. CRS (2011), *The Donor-Donee State Issue in Highway Finance*, Congressional Research Service; at www.everycrsreport.com/reports/R41869.html (Accessed March 2, 2022).
10. Alison Acosta Winters (2019), "Instead of Raising the Gas Tax, Stop Wasting Money on Frivolous Projects," *The Hill* https://bit.ly/3ak2vrz (Accessed March 2, 2022).
11. Patrick Balducci and Joseph Stowers (2008), *State Highway Cost Allocation Studies: A Synthesis of Highway Practice*, NCHRP Synthesis 378. https://bit.ly/2R2Uu4f (Accessed March 2, 2022).
12. APTA (2020), *Transit Fact Book*, American Public Transportation Association.
13. FHWA (2018), *Highway Statistics*, Federal Highway Administration. www.fhwa.dot.gov/policyinformation/statistics.cfm (Accessed March 2, 2022).
14. LAB (2018), *Benchmarking Report*, League of American Bicyclists. https://bikeleague.org/benchmarking-report (Accessed March 2, 2022).
15. Todd Litman (2019), *Transportation Cost and Benefit Analysis Guidebook: Techniques, Estimates and Implications*, VTPI. www.vtpi.org (Accessed March 2, 2022).
16. APTA (2017), *Who Rides Public Transportation: Passenger Demographics and Travel*, American Public Transportation Association. https://bit.ly/3DbCLen (Accessed March 2, 2022).
17. DfT (2020), *Gear Change: A Bold Vision for Cycling and Walking*, UK Dept. for Transport. https://bit.ly/39ZgZ0t (Accessed March 2, 2022).
18. Todd Litman (2021), *Evaluating Transportation Affordability*, Victoria Transport Policy. www.vtpi.org/affordability.pdf (Accessed March 2, 2022).
19. Ricardo-AEA (2014), *Update of the Handbook on External Costs of Transport Final Report*, European Commission https://bit.ly/34Ci8ZU (Accessed March 2, 2022).
20. TTI (2019), *Urban Mobility Report*, Texas Transportation Institute. https://mobility.tamu.edu/umr/report (Accessed March 2, 2022).
21. Todd Litman (2020), *Transportation Cost and Benefit Analysis Guidebook: Techniques, Estimates and Implications*, VTPI.
22. Lisa Schweitzer and Brian Taylor (2008), "Just Pricing: The Distributional Effects of Congestion Pricing and Sales Taxes," *Transportation*, Vol. 35, No.

6, pp. 797–812 https://link.springer.com/article/10.1007/s11116-008-9165-9 (Accessed March 2, 2022).
23. Michael Manville (2017), *Is Congestion Pricing Fair to the Poor?*, 100 Hours. https://bit.ly/2LyagAX (Accessed March 2, 2022).
24. Richard Dowling, et al. (2008), *Multimodal Level of Service Analysis for Urban Streets*, NCHRP Report 616, Transportation Research Board. https://bit.ly/2YGxIT3 (Accessed March 2, 2022).
25. Manaswi Saha, et al. (2019), "Project Sidewalk: A Web-based Crowdsourcing Tool for Collecting Sidewalk Accessibility Data at Scale," (10.1145/3290605.3300292).
26. David Levinson and David King (2020), *Transport Access Manual: A Guide for Measuring Connection between People and Places*, University of Sydney. https://hdl.handle.net/2123/23733 (Accessed March 2, 2022).
27. CNT (2018), *Housing + Transportation Affordability Index*, Center for Neighborhood Technology. http://htaindex.cnt.org (Accessed March 2, 2022).
28. Asha Weinstein Agrawal, et al. (2011), *Getting Around When You're Just Getting By: The Travel Behavior and Transportation Expenditures of Low-Income Adults*, Report 10-02, Mineta Transportation Institute. https://bit.ly/3iKwayE (Accessed March 2, 2022).
29. Diana Lavery (2019), *Including Transportation Costs in Location Affordability*, Story Maps. https://bit.ly/3ke9kPR (Accessed March 2, 2022).
30. HUD (2019), *Location Affordability Index*, Dept. of Housing and Urban Development. www.hudexchange.info/programs/location-affordability-index. (Accessed March 2, 2022).
31. Karel Martens (2016), *Transport Justice: Designing Fair Transportation Systems*, Routledge. https://bit.ly/3gS1xH3 (Accessed March 2, 2022).
32. Patricia Romero-Lankao and Erin Nobler (2021), *Energy Justice: Key Concepts and Metrics Relevant to EERE Transportation Projects*, National Renewable Energy Laboratory. https://afdc.energy.gov/files/pdfs/energy-justice-key-concepts.pdf (Accessed March 2, 2022).
33. Ryan Martinson (2018), "Equity and Mobility," *Transportation Talk*, Vol. 40/2, Summer, pp. 21-44, Canadian Institute of Transportation Engineers https://bit.ly/36yEaMJ (Accessed March 2, 2022).

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Answer to "Where in the World" on page 11: City of Avalon, Santa Catalina Island, CA, USA. Photo submitted by Stephen Byrd.