

SILICON VALLEY
BICYCLE
COALITION



VISIONZERO

TOOLKIT



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II. INTRODUCTION & EXECUTIVE SUMMARY

Vision Zero seeks the elimination of deaths and serious injuries from our roadways. Sweden was the first country to introduce such a policy, when in 1997 its parliament approved a policy to halve deaths and severe injuries by 2020 and bring them to zero by 2050. Since 1997, Sweden and other European countries practicing Vision Zero have been able to reduce their traffic fatalities by almost 50%.

At its core, Vision Zero is the straightforward goal of zero traffic-related deaths and severe injuries. However, achieving Vision Zero requires a fundamental paradigm shift in how our culture views traffic collisions—we must affirm the fact that every roadway death and life-altering injury is preventable. By focusing on preventing severe collisions by examining the main causes and locations in a data-driven and systematic manner, communities can achieve real results and save lives. With vehicle collisions remaining among the leading causes of death worldwide,¹ Vision Zero applies to all roadway users, traffic collision injuries, and traffic-related deaths. That said, it is especially important to protect our vulnerable users, including people walking, people with disabilities, people using skateboards, scooters, electric assist vehicles, people riding bicycles, and those using other mobility devices.

The Office of Traffic Safety and the American Community Survey show the following rates of transportation mode, traffic injury, and fatality: ^{2,3}

	Population (2010)	Walking trips (2012)	Pedestrians Injured and Killed (2012)	Biking trips (2012)	Bicyclists Injured and Killed (2012)	Total Fatal or Injury Collisions
San Mateo County	718,451	2.6%	256	1.3%	244	3,428
Santa Clara County	1,781,642	2.1%	577	1.7%	746	8,829

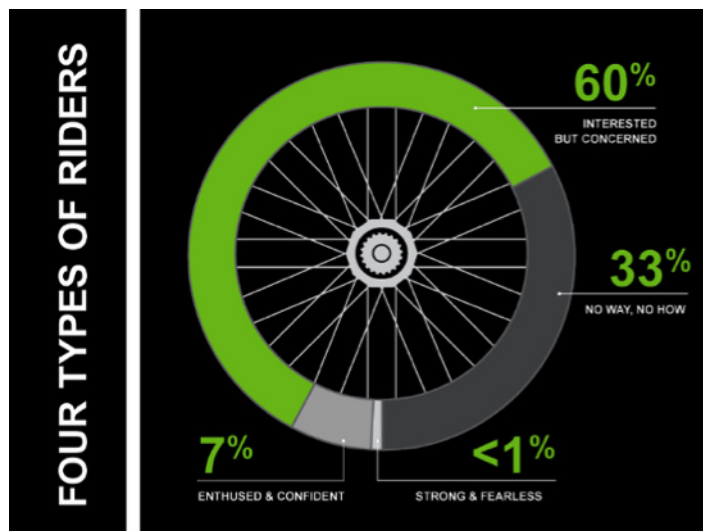
¹ Jacobsen, P., 2003, "Safety in numbers: more walkers and bicyclists, safer walking and bicycling," *Injury Prevention*, 9(3), 205-209

² California Office of Traffic Safety, "2012 OTS Rankings," *California Office of Traffic Safety*, 2012, http://www.ots.ca.gov/Media_and_Research/Rankings/default.asp

³ United States Census, "Community Facts," "2010 Demographic Profile Data," "Commuting Characteristics by Sex, 2008-12 American Community Survey 5-year estimates" *American FactFinder*, <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>

In recent years, Vision Zero has gained momentum around the United States, with New York City and San Francisco adopting Vision Zero policies and action plans in 2014. In 2015, the United States Department of Transportation issued the *Mayor's Challenge for Safer People, Safer Streets*, which entreats cities to address safety concerns on their roadways.⁴ In an effort to address traffic safety, the cities of Cupertino, Menlo Park, Palo Alto, and San José have all accepted the *Mayor's Challenge for Safer People, Safer Streets*. Shortly after, the Vision Zero Act of 2015 was introduced in Congress; the Act would provide a dedicated funding stream to cities that have adopted a Vision Zero plan. Locally, both the City of San Mateo and the City of San José adopted Vision Zero policies in 2015.

Silicon Valley Bicycle Coalition (SVBC) and California Walks (Cal Walks) have always advocated for safe streets that work for everyone—when streets are safe for people walking and biking, they are safe for drivers and transit riders as well. We are not alone in this belief, and this Toolkit is meant to serve as a resource for those who want to pursue Vision Zero policies in an effort to improve traffic safety in their communities.



Research shows that the public can be categorized into four categories regarding their views on bicycling: strong and fearless, enthused and confident, interested but concerned, and no way, no how.⁵ It is typically the “interested but concerned” group that is the largest, and it is those people we must target when thinking of building infrastructure that will attract them to try riding a bike or creating new policies to support bicycling. A study in the Pacific Northwest found that “Those who rate bicycling safety in their community a 10 (out of 10) ride their bike more than twice as often in an average week

Image source: People for Bikes.

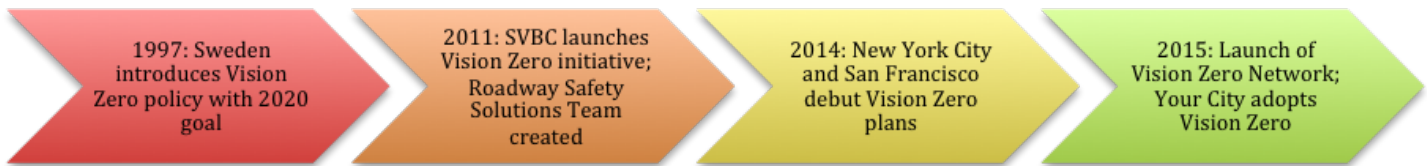
⁴ <http://www.transportation.gov/mayors-challenge>

⁵ Roger Gellar, “Four Types of Cyclists,” *Portland Office of Transportation*, Accessed July 2015, <http://www.portlandoregon.gov/transportation/article/158497>

compared to those who rate safety a 0 or 1.”⁶ Similarly, walkable communities provide quantifiable health, environmental and economic benefits.⁷ There is no doubt that many people will walk more both for their daily activities and for recreation if their environment feels—and truly is—safe and inviting.

In 2011, SVBC co-hosted a safety summit with Stanford Health Care, which was concerned about the high rate of bicyclists being transported to its trauma center with fatal or life-threatening injuries. Out of this meeting, the Roadway Safety Solutions Team (RSST) was born as a coalition of diverse stakeholders with the purpose of overcoming the challenges of the multijurisdictional nature of Silicon Valley, helping to coordinate efforts between cities, and minimizing roadway user confusion. Since then, the RSST has been working on projects focused on infrastructure, education and behavior, and enforcement to help further these goals.

Timeline: History of Vision Zero



The time is now to eliminate traffic deaths in your city. This Toolkit outlines key steps that city staff and policymakers can take to adopt and implement a Vision Zero policy and plan. It is based on our work with the RSST, as well as current practices from New York City, San Francisco, Portland, and San Diego, alongside the United States Department of Transportation’s recommendations and other resources on street safety. We have designed this Toolkit to be used with the Santa Clara County Public Health Department’s “Traffic Safety and Active Transportation in Santa Clara County” brief and

⁶ Inavero Institute for Service Research, “Bicycling Perceptions and Experiences in Oregon and Southwest Washington,” *Inavero Institute for Service Research*, 2009, <http://bikeportland.org/wp-content/uploads/2009/10/btasurveyreportfull2.pdf>

⁷ http://switchboard.nrdc.org/blogs/kbenfield/data_summaries_show_walkable_c.html

their “Bicycle Transportation and Safety in Santa Clara County” report released in August 2015, as well as the “Get Healthy San Mateo County Bicycle and Pedestrian Collision Report”, released in fall of 2015.

The “Five E’s” are a common framework used in street safety to categorize the types of projects and improvements that will lead to systemic change. These are Evaluation, Engineering, Enforcement, Education, and Encouragement. The Safe Routes to School National Partnership and the League of American Bicyclists are two well-known organizations using this framework. We encourage municipalities to incorporate two more E’s—Engagement and Equity—as they work toward a Vision Zero program that is inclusive, impactful, and transparent. Keep in mind that all the categories of recommendations are interrelated and interdependent. Vision Zero cannot be achieved with a focus on only one of the E’s alone.

The recommendations are grouped into short-, mid-, and long-term steps to help your jurisdiction use a phased approach to implementation. The short-term recommendations are actions that can be implemented almost immediately, with little planning or funding (1-2 years). The mid-term suggestions will take a little bit longer to develop (2-5 years). The long-term recommendations will require a more concerted effort to achieve (5+ years).

The authors consider this publication of the Vision Zero Toolkit a “first edition.” We expect to revise and reprint the Toolkit regularly as new research and case studies become available.

III. THE ESSENTIALS

The first step is to **adopt a Vision Zero policy at a city council or county board of supervisors level (see Appendix A for some examples)**. Additionally, partners such as public works, transportation, law enforcement, and/or your public health department should endorse the policy and participate in its implementation. The basic policy is a goal to have zero deaths or life-altering injuries on a jurisdiction's roadways by a certain date and to accept that all deaths are preventable. In essence, new road projects and improvements can and should be designed to achieve zero deaths and serious injuries. In 2014, over 300 participants at the first Vision Zero for Cities Symposium developed the following Vision Zero Statement of Principles:⁸

- Recognize the Vast Scale of Traffic Fatalities and Serious Injuries
 - Recognize the power of crash survivors and the families of people killed and seriously injured in traffic, and the widespread scale of traffic violence.
- Focus Messaging to Promote a Culture of Traffic Safety
 - Communicate with singular focus on the behaviors that kill and injure the most people.
- Ensure Accountability
 - Ensure the justice system holds individuals accountable for killing and injuring others in traffic.
- Institutionalize Collaboration
 - Institutionalize collaboration across various levels of government and between government officials and the public. Incorporate communities into traffic safety decision-making.
- Protect the Most Vulnerable
 - Prioritize the most vulnerable street users with the goal of creating a culture where everyone knows to think twice and exercise due care.

⁸ <https://www.transalt.org/news/wrap-up-vision-zero-for-cities-symposium/11-19-2014>

- Employ Data-Driven Enforcement
 - Employ data-driven and automated enforcement at every opportunity.
- Design Forgiving Streets
 - Design streets in such a way that mistakes made by street users are less likely to result in serious injuries or fatalities.
- Fund Safety
 - Prioritize safety in funding decisions.
- Track Progress
 - Create time-bound goals to track progress toward Vision Zero and regularly re-evaluate strategy.
- Empower Professional Drivers
 - Empower professional drivers to lead by example and imbue them with the understanding that their livelihood depends on safe driving.

Secondly, it is essential to **develop a Vision Zero implementation plan and strategies** to execute this high-level goal. Each strategy should include sub-goals, measurable objectives, and timelines for accomplishment. This Toolkit aims to assist with establishing these short-, mid-, and long-term strategies and goals.

“[R]esidents of low-income and minority neighborhoods are disproportionately represented in bike and pedestrian injuries and fatalities, and low-income neighborhoods often have fewer sidewalks and other safe infrastructure. Safe non-motorized travel, and safe access to transit stops, is essential for disadvantaged Americans seeking to reach jobs, schools, and other opportunities...”

– US Department of Transportation report, “Safer People, Safer Streets”

Engagement and Equity are often referred to as the sixth and seventh “E’s,” crucial to the success of your Evaluation, Engineering, Enforcement, Education, and Encouragement efforts. Throughout your Vision Zero implementation process, you should place an emphasis on engaging diverse constituencies within your community, particularly those most affected by traffic violence. Vulnerable populations frequently rely on walking, bicycling, and transit use to meet their daily needs, and income is a considerable indicator in the

likelihood to be involved in a serious traffic collision. Often, these people are underrepresented and disempowered in community planning, governance, and other political processes that affect their daily lives. However, without their input and involvement, any Vision Zero effort will not be successful. Vision Zero implementation should focus on incorporating these groups in decision-making and collaborative, community-focused efforts that allow real grassroots leadership.

The following components will help ensure that Engagement and Equity are woven into your Vision Zero implementation:

- 1. Form a permanent Vision Zero task force** or advisory committee composed of city staff, advocates, law enforcement, first responders, public health, and elected leaders. Ensure coordination between law enforcement and transportation staff.
- 2. Engage underrepresented groups**, including seniors, youth, women, multicultural groups, disability groups, and other members to ensure they are part of the conversation about what improvements work for them.
- 3. Complement the Vision Zero task force with a coalition.** Advocates on the task force are representative of the diverse body of the coalition, and the coalition allows for open, grassroots discussions from all members of the community.

Engagement: Advocates are here to help!

Groups like SVBC and Cal Walks are here to help—whether it’s just by spreading the word and driving attendance to your outreach events, or acting as a consultant to implement new programs.

- Lead rides
- Lead walks and walk assessments
- Implement and manage Safe Routes to School (SR2S) programs
- Review designs and grant applications
- Provide letters of support
- Assist with community outreach

IV. EVALUATION AND PLANNING

We must know where we have started to understand how far we have come. To that end, when implementing any of the policies and strategies outlined in this document, it is necessary to track data before and after any interventions. There is currently a particular lack of reliable data on how many people bike or walk, and there is incomplete data on collisions involving people walking or biking.

The collision reports recently completed by the San Mateo County Health System and Santa Clara County Public Health Department are great first steps in quantifying these indicators. These can help jurisdictions to understand where the most essential engineering, enforcement, and education investments are needed. Appropriate plans and evaluation methods can help determine what has been accomplished and help guide future decisions.



Silicon Valley Bicycle Coalition President Shiloh Ballard conducting a bicycle count.

Short-term

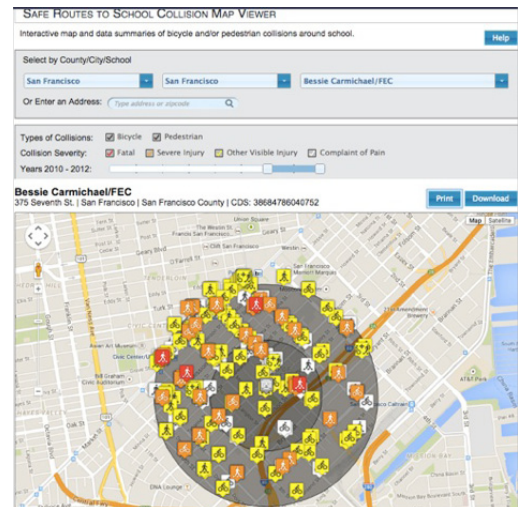
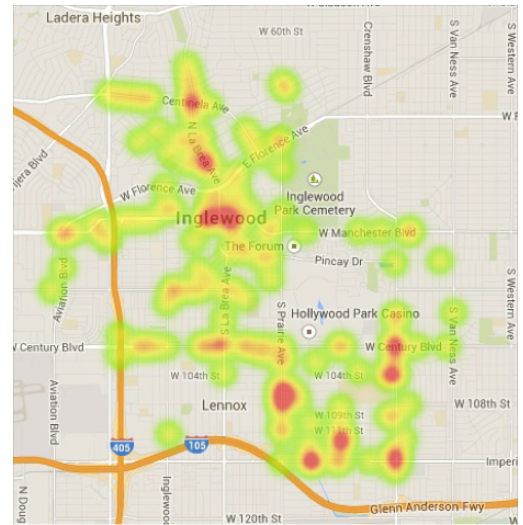
1. **Track and publish walking and biking volume data** on both city streets and off-street paths. Conducting regular counts (manual or electronic) on different roads is one way to track this. If your municipality does not yet have the capacity to perform these counts on a regular basis, recruit and train interested volunteer community members and create walking and biking events around these activities.

Engagement idea: Reach out to established community groups, churches, and neighborhood associations for volunteers to help conduct walking and biking counts.

2. **Create short-term (2-3 years) and long-term time-bound goals** to track progress toward Vision Zero and regularly reevaluate your strategy. Enable your Vision Zero Task Force or Advisory Committee to lead this.⁹
3. **Create and utilize a Bicycle and Pedestrian Advisory Committee** or similar body that regularly gives input on development and transportation projects and helps staff and elected officials set priorities to improve safety and accessibility. This committee should include representation from seniors, people with disabilities, members of disproportionately impacted communities, and other user groups.
4. As a city, **work with health care providers** (trauma centers, emergency rooms, and other healthcare facilities) to start tracking injuries resulting from collisions. Get Healthy San Mateo County and Santa Clara County Public Health Department have started this effort with their respective collision reports. This can become the basis for a more concerted and consistent data collection effort.

Mid-term

1. **Conduct outreach to high-risk communities.**
Engage residents so that engineering, education, and encouragement efforts are understood and supported broadly. Make sure to include people who already bike, walk, and take transit, and those who may choose these transportation options if they are made safer.



Transportation Injury Mapping System (TIMS) is available to the public, and enables users to access the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) database to create maps and download collision statistics: www.tims.berkeley.edu

⁹ See <http://visionzerosf.org/about/two-year-action-strategy/> and <http://www.nyc.gov/html/visionzero/pages/initiatives/initiatives.shtml> for examples

- 2. Create biking and walking transportation plans.** Utilize your Bicycle and Pedestrian Advisory Committee (BPAC), Bicycle Advisory Commission (BAC), Pedestrian Advisory Commission (PAC), or similar advisory body to work with staff and create a strategy and project list that will boost safety and accessibility for people on foot and on bike in your municipality.
- 3. Collect local crash and safety data and publish it online.** Include maps of high-injury corridors for people biking, walking, and driving. Review data annually and integrate analysis into Vision Zero strategy. Be sure to combine this effort with Enforcement strategies, and to partner with your local enforcement agencies in order to gather, access, and share accurate data. Accurate, timely collision data can help municipalities prioritize the use of limited resources.
- 4. Install digital automated counters** at key locations to publicize daily walking and biking counts and collect on-going data.

Long-term

- 1. Index funding to mode share goals.** Create a transportation budget that reflects your municipality's goals for walking, biking, and transit use.

Case study: In San Luis Obispo, CA, the city council voted in 2015 to amend the circulation element of the general plan to feature a target mode share of 50% motor vehicles, 12% transit, 20% bicycles, and 18% walking, car pools, and other forms. At the same time, the city created a policy that allocates general fund transportation spending by mode to match the target mode share percentages.

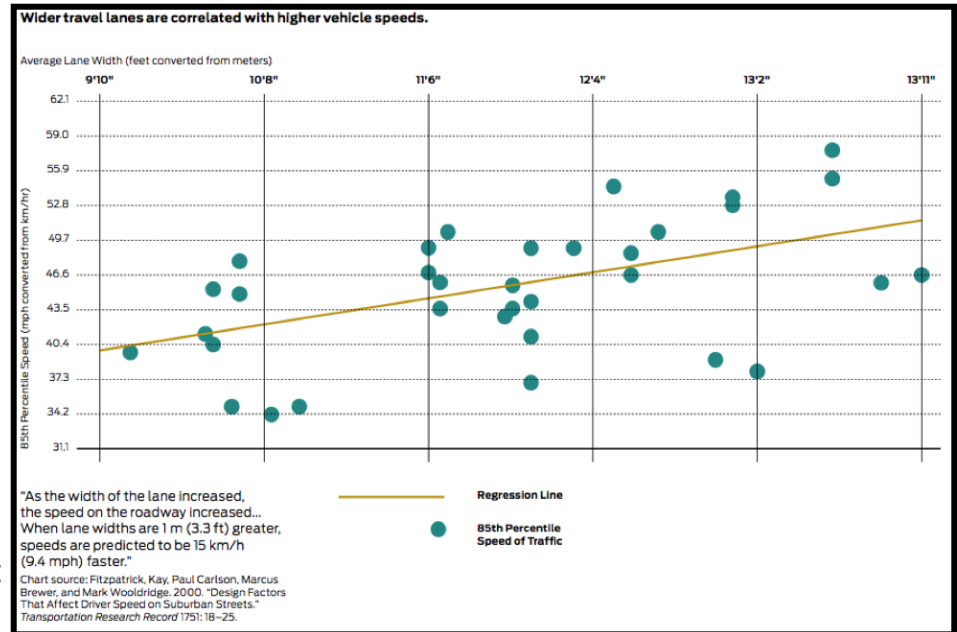
- 2. Prepare project proposals** from your Biking and Walking Transportation plans' priority lists ahead of time to expedite grant applications.
- 3. In Santa Clara County, apply to include bicycle projects** in Santa Clara County Valley Transportation Authority (VTA)'s Bicycle Expenditure Program (BEP).¹⁰
- 4. Establish outreach opportunities** to support long-term community engagement for Regional Transportation Infrastructure Projects (TIP) list and Plan Bay Area.¹¹

¹⁰ <http://www.vta.org/projects-and-programs/planning/bikes-bicycle-expenditure-program-bep>

¹¹ <http://www.mtc.ca.gov/funding/tip/> and http://www.mtc.ca.gov/planning/plan_bay_area/

V. ENGINEERING

The engineering category focuses on physical changes to streetscapes that calm traffic, reduce speeds, minimize conflicts with motor vehicles, and create a safe and attractive environment for people who walk, bike, take transit, drive, or use other methods of transportation. Vision Zero policies acknowledge that humans make mistakes, and our streetscapes should be designed and built to account for this. For example, recent studies show that higher speeds are correlated with wider lanes widths on municipal streets; by reducing lane widths, we can increase safety for all users and continue to efficiently move vehicular traffic.¹²



Reducing lane widths in accordance with NACTO guidelines can help slow traffic speeds. Source: <http://nacto.org/usdg/street-design-elements/lane-width/>

Short-term:

- 1. Adopt a Complete Streets Resolution.**¹³ *Complete Streets* is the concept that streets are for everyone and should be designed in a way to make them equally accessible and safe for all users and transportation options. A resolution ensures that a city or county is accountable for creating and maintaining complete streets, in particular when redesigning or creating new roadways.

¹² <http://www.citylab.com/cityfixer/2015/07/10-foot-traffic-lanes-are-saferand-still-move-plenty-of-cars/399761/>

¹³ The San Francisco Bay Area Metropolitan Transportation Commission (MTC) requires that jurisdictions adopt Complete Streets resolutions in order to be eligible for One Bay Area Grant (OBAG) funding. A sample resolution can be found here: http://changelabsolutions.org/publications/MTC-complete_streets

- 2. Incorporate Complete Streets improvements into the city's Capital Improvement Program or repaving and maintenance schedule.** Every city has a regular maintenance schedule to repair and otherwise improve existing roads. Take advantage of this process to improve bicycle and pedestrian networks; repaving roads is an ongoing opportunity to add striped bike lanes, widen existing bike lanes, add buffers and painted curb extensions, install high-visibility crosswalks, implement a road diet, or otherwise change the street design at little to no extra cost.

Equity Check-in: Pay attention to which neighborhoods your municipality is investing in. Are biking and walking facilities being improved in the communities that need them most? Are residents in those communities being consulted so that any new infrastructure meets the needs, desires, and character of the community?

- 3. Adopt NACTO guidelines and provide training for public works or transportation staff.**

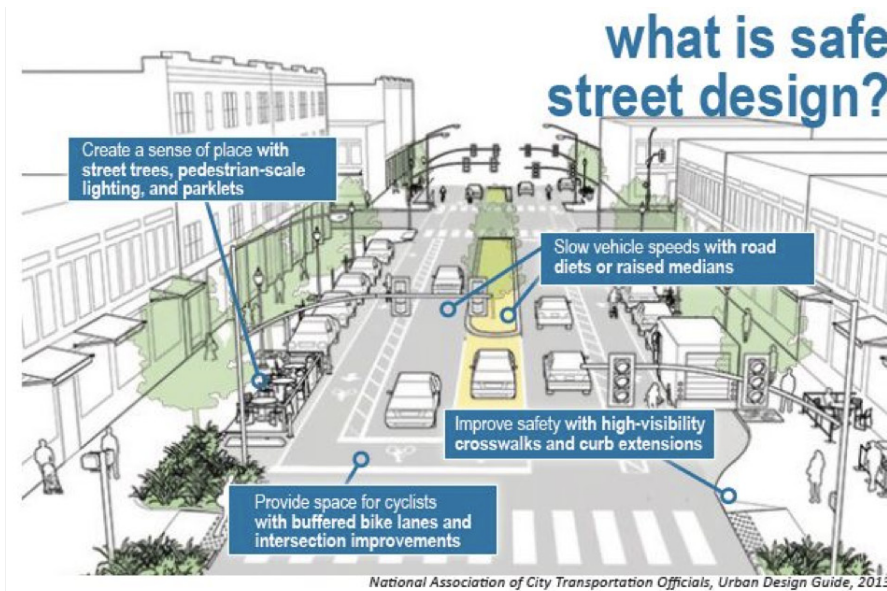


Image source: NACTO.

In 2014, Caltrans endorsed the National Association of City Transportation Officials' (NACTO) guidelines,¹⁴ which have innovative bikeway and street design solutions. Since the passage of AB 1193,¹⁵ California cities have the option of adopting the NACTO *Urban Street Design Guide* and *Urban Bikeway Design Guide*. Doing so allows for greater flexibility in designing streets that are

¹⁴ <http://www.dot.ca.gov/hq/paffairs/news/pressrel/14pr036.htm>

¹⁵ http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB1193

inviting and safe for all users. Many NACTO design elements enhance safety for vulnerable users, including shortened crossing distances for pedestrians, traffic calming solutions, and protected facilities for bicyclists.

4. **Implement a pilot road diet or temporary “pop-up” cycletrack.** These short-term, low-cost changes to a roadway give the community the chance to try out new facilities while public agencies collect data in preparation for more permanent solutions.

Mid-term

1. **Incorporate Complete Streets into the Circulation Element of your city’s General Plan** so that the consideration of all transportation choices becomes business as usual when redesigning streets in your jurisdiction.¹⁶
2. **Create and adopt (or revise) your municipality’s Pedestrian Master Plan, Bicycle Master Plan, and ADA Compliance and Accessibility Plan** using the framework of Vision Zero.
3. **Revise how your municipality analyzes transportation impacts** to focus on Vehicle Miles Traveled (VMT) rather than vehicular Level of Service (LOS) as outlined by the Governor’s Office of Planning & Research (OPR) in response to SB 743. Locally, in 2005, the City of San José adopted an alternative to LOS downtown and at specific protected intersections citywide to allow for the funding of neighborhood improvements that are safe, efficient, and environmentally friendly.¹⁷
4. Using data on collisions and areas of high usage (see Evaluation section), **identify and analyze high-risk locations** where people who walk, bike, and drive are injured or killed and determine appropriate solutions to address the problems. Engage local advocacy groups and partner with other jurisdictions in this task when appropriate.
5. Use available resources to **implement relatively low-cost safety strategies to calm traffic and address problem locations.** The NACTO *Urban Street Design Guide* and *Urban*

¹⁶ Passed in 2011, the California Complete Streets Act requires that cities and counties updating their general plans must include complete streets guidelines in the circulation element.

¹⁷ <http://circulatesd.nationbuilder.com/visionzerosd>

Bikeway Design Guide have helpful information on how to implement these treatments in different settings, including on an interim or pilot basis. This can be accomplished through, for example:

- Pavement markings,
- Crossing beacons, and
- Physical elements to protect vulnerable road users,
- Shorten street crossing distances and calm intersection traffic, such as the use of planters and/or flexible posts.



Cycletracks in Vancouver, Canada, utilize landscaping to provide protection from traffic for people on bikes. Image source: pricetags.wordpress.com.

- Consider reversing the location of bike lanes relative to on-street parking to create more protected bike lanes.
- Focus on signal timing adjustments to allow safe crossing for people of all ages and abilities, and
- Consider a Leading Pedestrian Interval (LPI), which allows pedestrians a few seconds to enter the intersection to cross before motorists get the green light.

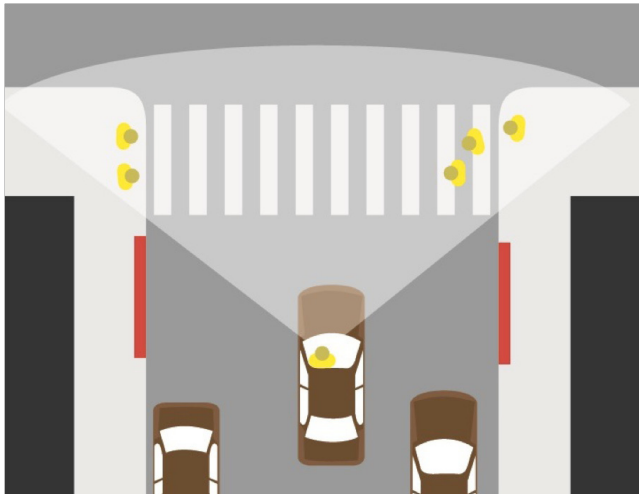
6. If needed, **streamline the processes in place** to implement smaller-scale projects like those highlighted above.
7. Establish development guidelines that **include strong bike parking minimums and increase the number of bike parking options in your city**, including short-term (bike racks and bike corrals)¹⁸ and long-term solutions (e-lockers, bike stations).

¹⁸ A bike corral is a bike parking facility with multiple bike racks that can accommodate 10-15 bicycles. They are often located in an on-street parking space and are especially useful in business districts.

Long-term

1. **Fix high-risk locations** where people are being injured and killed on streets. Having Complete Streets Guidelines can help your city staff and engineers in this process:

- Redesign major barriers, such as freeway crossings, and large, arterial roads;
- Reduce pedestrian and bicyclist risk by implementing hardscape treatments like curb extensions and crossing islands or medians to reduce crossing distances, increase vehicle turning radii, and provide protected facilities;
- Institute corner parking restrictions—also known as “daylighting”—to increase the visibility of pedestrians crossing at signalized, marked, and unmarked crossings;
- Consider turning restrictions—like no right turns on red or left turn restrictions—to limit the chance of collisions at intersections;
- Install pedestrian actuated signals—Rectangular Rapid Flashing Beacons (RRFBs) or Pedestrian Hybrid Beacons (PHBs)—at high-pedestrian activity mid-block and/or uncontrolled crossings;
- Install raised crosswalks to both elevate the visibility of pedestrians and to slow traffic at crossings, particularly at channelized turn lanes and highway on/off-ramps; and
- Implement road diets or “rightsizing” on corridors to calm traffic, provide room for marked bike lanes, and allow for safer crossing.



Corner parking restrictions—or “daylighting”—improves visibility between drivers and people crossing the street, as well as for drivers making turns at intersections.

Image source: SFMTA

VI. ENFORCEMENT

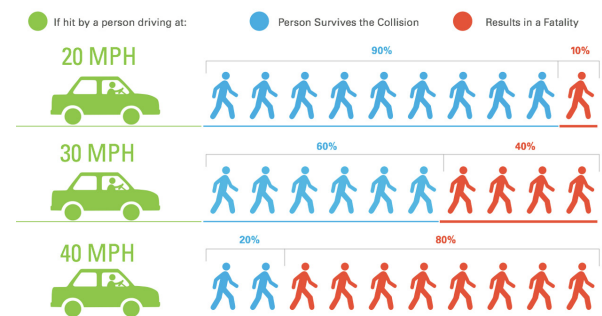
In addition to physical improvements to streets, strong rules and regulations governing roadway behavior for all users are needed, and law enforcement is a crucial component to enforcing these laws. Enforcement is critical to long-term behavior change, and drivers who receive a traffic citation for a violation are less likely to kill or seriously injure someone in a future collision.¹⁹ Jurisdictions should work with their corresponding law enforcement agency (local police, sheriff, or California Highway Patrol) when implementing strategies in all the E categories, and in particular when executing tactics that require police enforcement.

Unsafe speed is the primary cause of many collisions (see images below). In 2012, speeding contributed to 30% of all fatal collisions in the United States.²⁰ Increased speeds also increase the severity of collisions, and high speeds (over 20 mph) exponentially correlate to the severity of injuries and likelihood of death. To achieve Vision Zero, managing traffic speeds to favor safety over convenience is crucial, and requires a combination of Enforcement, Engineering, Education, and Evaluation tactics.

Short-term

1. Lowering traffic speeds: In addition to the engineering solutions described earlier in this toolkit, your city can take several steps to legally lower speed limits:

- Advocate for a change to California State law to enable cities to lower speed limits where or when needed from 25 mph to 20 mph.
- Create neighborhood, school, and senior slow zones at 20 mph.

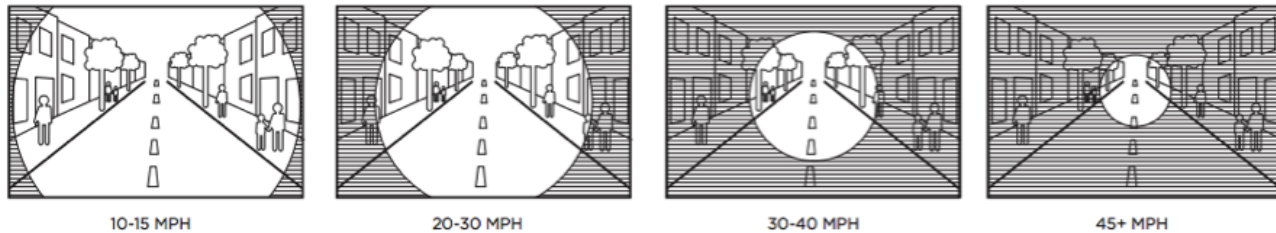


Vision Zero San Francisco : Two-Year Action Plan, February 2015

¹⁹ Donald Redelmeier, et al, "Traffic-Law Enforcement and Risk of Death from Motor-Vehicle Crashes: Case-Crossover Study," Science Direct, (June, 2003), <http://www.sciencedirect.com/science/article/pii/S0140673603137701>.

²⁰ <http://www-nrd.nhtsa.dot.gov/Pubs/812021.pdf>

Tunnel Vision: as speed increases, peripheral vision decreases.



Speed Concepts

Higher speeds result in reduced peripheral vision for drivers. Source: Complete Streets Chicago Design Guidelines <http://www.cityofchicago.org/content/dam/city/depts/cdot/Complete%20Streets/CompleteStreetsGuidelines.pdf>, pg. 118

- Lower speed limits to 15 mph at all schools (where allowed by AB 321).²¹
- 2. Your city can also begin to **advocate for the State of California to allow municipalities to gain legislative authority for automated speed cameras** to aid in enforcement. In the interim, your city can install portable speed feedback signs and implement a speed radar-lending program.
- 3. Police departments, sheriff's departments and California Highway Patrol (CHP) are key partners in traffic enforcement. These entities should recognize, along with your jurisdiction, that all crashes are preventable and **replace "accident" with "collision" in all official documents and reporting**. This helps to change the perception of law enforcement and public members that collisions are not simply an act of destiny but have real causes that can be prevented through engineering, enforcement, and education.
- 4. **Law enforcement should make reports on all collisions involving people biking or walking**. Many collisions involving people biking or walking are not reported by law enforcement. In 2009, San Francisco Police Department began to require that collisions involving people biking or walking, whether or not a vehicle is involved, should be reported, with several stipulations.²² This aids in data collection and tracking, and can help your jurisdiction to identify and address the most dangerous locations and behaviors that cause

²¹ <http://saferoutescalifornia.org/2011/02/01/ab-321-california-existing-law-that-helps-local-communities-reduce-speed-limits/>

²² San Francisco Police Department, "Department Bulletin 9.02 B Traffic accidents/incidents involving bicycles," San Francisco Police Department, 2009, http://www.sfbike.org/download/resources/SFPD_Bulletin_Bicycle_Accidents.pdf

collisions. (See Evaluation section for more on data collection and tracking).

5. Advocate for California state legislation to **have all law enforcement agencies use the same electronic collision reporting system.**

Mid-term

1. Using data (discussed more in the Evaluation section), **focus enforcement on the most dangerous behaviors** and high-risk locations to yield the greatest reduction in collisions and set an enforcement target on the most dangerous behaviors (see San Francisco Police Department's "Focus on the Five" program, where the Department has set a minimum target of 50% of all citations focused on the five most dangerous behaviors). The target areas will result from the analysis of existing data.
2. **Standardize a collision investigation process** so that all involved parties are appropriately interviewed to determine the cause of collisions.
3. **Make sure that law enforcement is trained regularly** on laws related to the rights of people biking and walking to ensure fair ticketing.

Long-term

1. Looking in-depth at the data results, **install red-light running cameras** at appropriate intersections.

VII. EDUCATION

Education of all roadway users is key. This means forming lifelong habits and practices by educating people of all ages on how to safely use the streets and different transportation options. Incorporating age-appropriate lessons at all levels of schooling starts the process young and can teach children how to use streets safely, whether biking, walking, taking transit, or using another device. People who drive must also be made aware of the laws governing people walking and biking, and how to behave safely and responsibly around these users and on the streets.



An image from an outdoor advertisement, part of Washington D.C.'s "Street Smart" campaign.

Image source: Region Forward.

Short-term

1. **Implement a public safety messaging campaign** that utilizes multiple outreach methods (online, social media, fliers, billboards, bus ads, radio, TV) to communicate important and

often-overlooked tips about staying safe on the road. Topics can include, but are not limited to:

- Avoiding common causes of collisions (all modes of transportation);
 - The dangers of speeding;
 - The dangers of distracted driving;
 - Looking for bicyclists before opening your car door;
 - Stopping for pedestrians in crossings (both marked and unmarked); and
 - Staying visible at night.
2. Work with school district partners to **provide bicycle and pedestrian safety education classes for youth** (Safe Routes to School program). Connect with your local Walk n' Roll or Safe Routes to School provider to help establish these programs.
 3. **Provide bicycle and pedestrian safety education classes for adults.** These can be implemented at the workplace, churches, community centers, libraries, or retail locations.
 4. Implement a policy that requires or incentivizes private companies operating in the city to **institute professional driver training programs** to engage drivers of buses, taxis, delivery trucks, and garbage trucks as partners in roadway safety and ensure proper training for driving safely around people walking and biking. Local transit agencies (Samtrans, VTA, Caltrain, and others) typically already have safety trainings in place.
 5. **Require driver training programs** for operators of city and county vehicles.
 6. **Leverage the media** to expand the reach of your educational message through tactics such as: op-eds, letters to the editor, crosswalk safety demonstrations, and traffic safety rides, walks, and vigils.

Commercial Vehicle Driver Training, offered by Silicon Valley Bicycle Coalition to companies that utilize professional drivers for employee alternative transportation, provides information on best practices for driving large commercial vehicles when sharing the road with bicycles and pedestrians. The training covers bicycling rules of the road, common causes of bicycle/vehicle/pedestrian conflict, anticipated bicyclist behavior in various situations, Bay Area-specific cases, and maneuvering skills for optimum predictability and collision prevention. The goal of this training is to improve safety and comfort for all users of the road.

Mid-term

1. Leverage an existing adult bicycle safety education class to **begin a bicycling ticket diversion program**. Such programs use enforcement of bicycle violations as a tool for better educating bicyclists about the rules of the road and the consequences of unsafe behavior on a bicycle. Current California State Assembly Bill 902 will allow a person of any age who is cited for an infraction while on a bicycle to participate in a bicycle education class to reduce the citation fee.
2. Work with your school district(s) to **get walking and bicycling safety education integrated into safety, health, and physical education curricula**. This would be done so that the school has internal capacity to provide education. This is different from special workshops or after-school programs.
3. Collaborate with local advocacy groups to **create short educational videos on proper roadway behavior for all types of users**. This should be included in outreach of all different types of events so that the message reaches a broad audience (not just people already biking or walking). For example, a short video could be played at the beginning of movie in the park nights, at the beginning of council sessions recorded and featured online, or at the beginning of an unrelated community group meeting.

IT'S **UP** TO
ALL of US



It's Up to All of Us / Walk Smart CA, created by the California Department of Public Health, provides free and ready-to-use campaign materials: <http://www.cdph.ca.gov/programs/SACB/Pages/ItsUp2Us.aspx>

Long-term

1. **Advocate at the state level for bicycle safety education** to be integrated into statewide teaching curriculum. In Germany, where bicycling rates are much higher, all school children are required to complete comprehensive bicycling education courses and are tested (similar to U.S. driving license tests) by traffic police.²³
2. **Incorporate long-term reliable funding for adult bicycle education classes** into local sales tax or general fund budgeting. Alameda County currently dedicates a portion of its sales tax revenue to bicycle safety education programs.

²³ John Pucher and Ralph Buehler, “Making Cycling Irresistible: Lessons from The Netherlands, Denmark, and Germany,” *Transport Reviews*, Vol. 28, No. 4, 495–528, July 2008, <https://ralphbu.files.wordpress.com/2015/03/mci.pdf>

VIII. ENCOURAGEMENT

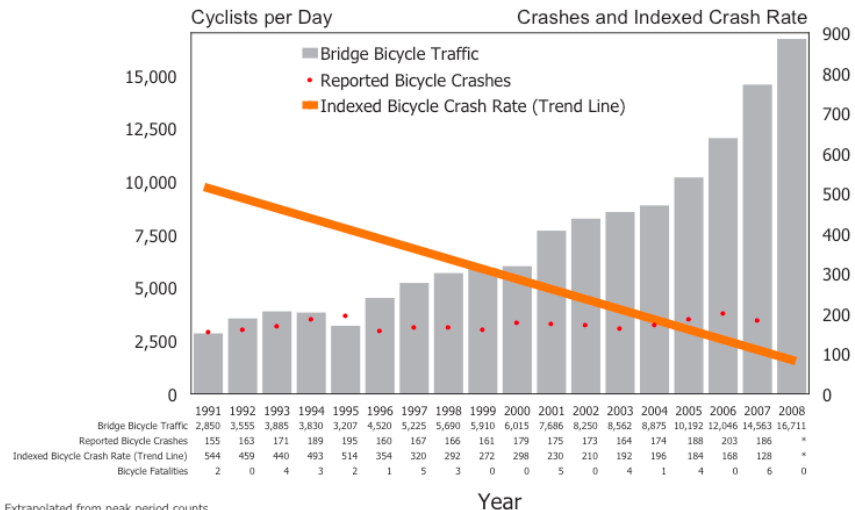
Encouragement activities promote a cultural shift to increase walking, bicycling, and transit trips, which in turn increases safety. Safety in numbers is not just a perception but a proven effect: Research shows that increased rates of walking and bicycling actually causes a dramatic reduction in collisions involving people who walk and bike.²⁴

Once people understand how to take these trips and are given the opportunities to do so, they become more likely to take part.

Short-term

1. **Implement a Bikepool program** that brings people together to ride bikes to and from work and home or other popular destinations together.²⁵
2. **Participate in Bike to Work Day and Walk to Work Day** events and activities in May:
 - Have your municipality or agency host an energizer station.
 - Encourage your own employees to participate.
 - Work with local business and community leaders to organize events.

Combined Bicycle Traffic over Four Main Portland Bicycle Bridges Juxtaposed with Bicycle Crashes



Extrapolated from peak period counts
 Crash Rate represents an indexing of annual reported crashes to daily bicycle trips across the four main bicycle bridges.
 *2008 Reported Bicycle Crashes data not yet available

Portland Bicycle Count Report 2009 <https://grist.files.wordpress.com/2010/10/bikecount2009reportfinal.pdf> pg. 11

²⁴ Jacobsen, P., 2003, "Safety in numbers: more walkers and bicyclists, safer walking and bicycling," Injury Prevention, 9(3), 205-209

²⁵ <http://bikesiliconvalley.org/bikepool/>



CicLAvia, an Open Streets program in Los Angeles, during which several miles of streets are closed to motor vehicle traffic.

Image source:
CicLAvia.

- Have your elected leaders lead a PEDal pool for biking or walking to work.
 - Issue a formal city proclamation supporting Bike/Walk to Work Day.
3. **Work with your school district(s)** to promote and participate in Walk and Bike to School Day events and activities:
 - International Walk to School Day in October.
 - National Bike to School Day in May.
 - Have your school board and elected leaders lead a walking school bus.
 - Launch a Golden Sneaker competition between classes to reward students for participating in Walk to School Day.
 4. **Launch a weekly/monthly community walk/bike day** at schools or workplaces, such as Walking Wednesdays.
 5. **Participate in and promote Bike to Shop Day** events and activities in May.

6. **Provide valet bike parking** at events in your municipality.
7. **Participate in PARK(ing) Day** to create temporary parklets in curbside parking spaces.²⁶
8. **Establish a parklet program** to allow for permanent parklets along retail corridors in partnership with local business owners to create expanded sidewalk space and bike parking. A parklet is a way to create more community and public space on the street by offering various amenities in a car parking space, extending the sidewalk. This may be temporary or permanent.

Mid-term

1. Establish development guidelines that include strong bike parking minimums. **Install bike parking (bike racks or bike corrals) at high-traffic/high-demand locations.** Studies have found that people are more likely to bike if there are secure bike parking options at their destination.^{27, 28}
2. **Institute bicycle and pedestrian wayfinding systems** that incorporate distance, direction, destinations including community assets, and area maps to encourage biking and walking, direct people to appropriate routes, and help them accurately navigate the biking and walking networks.
3. **Invest in a public bike sharing system** that provides an additional transportation option for your community. A key component of an effective bike share system is effective marketing and outreach to potential users. This also reaches new audiences that may be unable or unwilling to purchase a bike.
4. **Start Open Streets and Play Streets programs in your community.** Open Streets events are when streets are temporarily closed to cars, making them available for walking, biking, and other activities and fun uses. These programs not only encourage more biking and walking, but

²⁶ <http://parkingday.org/>

²⁷ Ipek N. Sener, Naveen Eluru, and Chandra R. Bhat, “*An Analysis of Bicyclists and Bicycling Characteristics: Who, Why, and How Much are they Bicycling?*,” The University of Texas at Austin, 2008.

²⁸ Ralph Buehler with Andrea Hamre, Dan Sonenklar, and Paul Goger, “*Trends and Determinants of Cycling in the Washington, DC Region*,” Virginia Tech, Urban Affairs and Planning, 2009.

also are great opportunities to share educational materials and provide safety training.²⁹ San José will hold its first Open Streets event, VivaCallesSJ, ³⁰ on October 11, 2015.

- 5. Create a series of themed, community walks that promote walkability and highlight community assets.** California Walks, in partnership with City Fabrick, is currently working on a new series of walking loops based on City Fabrick's work with Walk Long Beach.³¹ Other communities have launched annual walks; for example, Walk Bike Glendale hosts an Annual Pastry Walk, which tours the community's many wonderful Armenian bakeries.
- 6. Conduct a marketing campaign that normalizes biking and walking** and changes the image to be more inclusive of all demographics and ability levels, not just, for example, recreational cyclists. There are many types of people walking and biking and when people see others like themselves doing an activity, it helps to encourage them to try it out.

Long-term

- 1. Establish a comprehensive, community-wide Transportation Demand Management (TDM) program**, like Portland's "Smart Trips," and ensure long-term, secure funding for its continued success.

²⁹ For more information and a map of cities in the U.S. with Open Streets initiatives about Open Streets: <http://openstreetsproject.org/> and Play Streets: <http://ahealthieramerica.org/play-streets/play-streets-full/>.

³⁰ <http://vivacallesj.org/>

³¹ <http://www.cityfabrick.org/project/walk-long-beach/>; <http://californiawalks.org/projects/walksj/>

IX. REFERENCES & ADDITIONAL RESOURCES

References

California Active Transportation Program

<http://www.dot.ca.gov/hq/LocalPrograms/atp/>

California Office of Traffic Safety

<http://www.ots.ca.gov/>

City of San Mateo Sustainable Streets Plan

<http://sustainablestreetssanmateo.com/>

League of American Bicyclists, Bicycle Friendly Community Program

http://www.bikeleague.org/sites/default/files/Attributes_of_BFC.pdf

National Association of City Transportation Officials-(NACTO) “Urban Street Design Guide” and “Urban Bikeway Design Guide”

<http://nacto.org/>

New York City Vision Zero Action Plan

<http://www.nyc.gov/html/visionzero/pdf/nyc-vision-zero-action-plan.pdf>

Santa Clara County Public Health Department, “Traffic Safety and Active Transportation in Santa Clara County”

<https://www.sccgov.org/sites/sccphd/en-us/Partners/Data/Documents/Traffic%20safety%20and%20active%20transportation%202014/>

[Traffic%20safety%20and%20active%20transportation_Final.pdf](#)

Transportation Injury Mapping System (TIMS)

www.tims.berkeley.edu

U.S. Department of Transportation Mayors’ Challenge

<http://www.dot.gov/mayors-challenge>

Vision Zero for Cities Symposium

<http://transalt.org/news/wrap-up-vision-zero-for-cities-symposium/11-19-2014>

Vision Zero Portland

<http://www.portlandoregon.gov/transportation/40390>

Vision Zero San Diego

<http://circulatesd.nationbuilder.com/visionzerosd>

Vision Zero San Francisco

<http://visionzerosf.org/>

Vision Zero San José

<http://www.sanjoseca.gov/DocumentCenter/View/42849>

Additional Resources

- Vision Zero Network:

<http://visionzeronetwork.org/>

- Vision Zero Cities Symposium 2016 in NYC:

<http://www.transalt.org/getinvolved/vision-zero-now/visionzero2016>

X. APPENDIX A

Vision Zero policy goal

City of San Mateo

Sustainable Streets Plan 2015

To ensure that human life and health are paramount and take priority over mobility and other road traffic system objectives, improve safety through the design and maintenance of sidewalks, streets, intersections, and other roadway improvements such as signage, lighting, and landscaping, as well as best practice programs to enhance and improve the overall safety.

Objective 1.A Eliminate pedestrian- and bicycle-related fatalities and reduce the number of non-fatal pedestrian- and bicycle-related collisions by 50% from 2010 levels by 2020.

Policy 1.A.1 Annually review collision data, including causes, to implement ongoing improvements at intersections and throughout the transportation network.

Policy 1.A.2 Identify opportunities to reduce pedestrian and bicyclist risk by reducing crossing distances and providing protected facilities.

Policy 1.A.3 Develop and implement an enforcement program to encourage safe travel behavior and to reduce aggressive and/or negligent behavior among drivers, bicyclists, and pedestrians.

Objective 1.B Work to improve walking and bicycling conditions at intersections with the highest rates of collisions.

Policy 1.B.1 Coordinate with Caltrans to provide median refuge islands on El Camino Real.

DRAFT Vision Zero Resolution

City of San Diego

A RESOLUTION OF THE CITY OF SAN DIEGO TO ADOPT A VISION ZERO PLAN TO REDUCE TRAFFIC FATALITIES TO ZERO IN THE NEXT TEN YEARS

WHEREAS, on average one person each day is seriously injured or killed on the road while walking, biking, or driving the streets of San Diego; and,

WHEREAS, a high percentage of traffic injuries and fatalities involve pedestrians, bicyclists, and other vulnerable users; and,

WHEREAS, traffic fatalities are the leading cause of accidental death among children ages 0 to 13 in the City; and,

WHEREAS, traffic violence for people walking and bicycling is on par with the number of homicides in the City; and,

WHEREAS, the City has adopted numerous studies and plans that outline design concepts to improve safety for people walking and biking on the City's most dangerous corridors including a Pedestrian Master Plan and Bicycle Master Plan; and,

WHEREAS, the City of San Diego's Climate Action Plan proposes to achieve 50 percent of commuter mode share for walking, biking, and transit use in transit priority areas by 2035 and safer conditions for walking and biking can help implement this Plan; and,

WHEREAS, the City will increase in population by approximately 30 percent by 2035 and the majority of growth will result from infill development thereby increasing demand for safe walking and bicycling; and,

WHEREAS, communities in San Diego have prioritized infrastructure projects that improve walking and biking safety among other project types as represented by the Community Planning Committee report to Infrastructure Committee in November 2013; and,

WHEREAS, the City incurs costs to respond to lawsuits on the City's failure to provide safer streets; and,

WHEREAS, restoring infrastructure in the City is a priority of the Council and Mayor; and,

WHEREAS, Vision Zero provides a framework for reducing traffic deaths to zero through a combination of safe engineering measures, education, and enforcement practices; and,

WHEREAS, Vision Zero has been adopted in many cities throughout the country, most notably in New York City which has seen the lowest number of pedestrian fatalities in its first year of implementation since documentation began in 1910; and,

WHEREAS, Circulate San Diego is convening an Advisory Committee to advance Vision Zero goals,

THEREFORE,

BE IT RESOLVED, by the Council of the City of San Diego, that it hereby adopts a vision of reducing traffic deaths to zero by 2025 by prioritizing safety within infrastructure projects already underway, and combining with education, and enforcement practices; and,

BE IT FURTHER RESOLVED, by the Council of the City of San Diego, that it recommends for City staff from the Mayor's office, Transportation and Stormwater Department, San Diego Police Department, San Diego Unified School District and Caltrans to participate in and attend meetings of Circulate San Diego's Vision Zero Advisory Committee for a limited time.

XI. APPENDIX B

Pedestrian and Bicycle Project Funding Sources

Much of this data prepared by San Mateo County Transportation Authority.
Grant programs are subject to change.

Program	Administrator	Geographical Area	Eligible projects	Match	Funding	Status	Notes
SMC Measure A Ped & Bicycle Program	SMC Transportation Authority	San Mateo County	New capital infrastructure projects, including project planning. City/area-wide planning & maintenance not eligible.	None	\$5.8m in FY 2014	Next call: projected late fall 2015 with awards spring 2016	During the funding call held in FY2014, a max of 3 applications, up to a total of \$1m, could be submitted per applicant.
State Active Transportation Program (ATP)	California Transportation Commission (CTC)	California	Infrastructure & non-infrastructure. Also funds bicycle & pedestrian plans for disadvantaged communities only.	None	\$180m in FY 2015	FY 2015 applications were due 6/1/15. CTC adopts program of projects in October 2015	CTC to adopt program of projects every 2 years after release of FY 2016 call. Min. request of \$250k for infrastructure projects. Minimum 25% of all funding awarded to disadvantaged communities.
Regional Active Transportation Program (ATP)	MTC delegated by CTC for the SF Bay Area	SF Bay Area	Infrastructure & non-infrastructure. Also funds bicycle & pedestrian plans .	Minimum 11.47%. Waivers for projects benefiting communities of concern, stand-alone non-infrastructure projects & safe routes to school projects.	\$30m in FY 2015	FY 2015 applications were due 6/1/15. MTC adopts program of projects in October 2015, then CTC in December 2015.	Guidelines similar to CA ATP with additional evaluation criteria.
Transportation Development Act (TDA), Article 3	C/CAG in San Mateo County and VTA in Santa Clara County, delegated by MTC	SF Bay Area	Comprehensive bicycle & pedestrian plans, bicycle safety education, & design & construction of capital infrastructure projects.	None for capital infrastructure. 50% for planning & education.	Varies by cycle		Processes vary by county.

Program	Administrator	Geographical Area	Eligible projects	Match	Funding	Status	Notes
One Bay Area Grant (OBAG) Program				11.47%	\$800 million over the four-year Cycle 2 period (FYs 2012-13 through 2015-16)	Next call pending, likely within 2 years	70% of funds to be used in priority development areas (PDAs) or for projects that connect or provide proximate access to PDAs. Guidelines for next cycle under development.
Cap & Trade Affordable Housing & Sustainable Communities Program (AHSC)	California Strategic Growth Council	California	Capital infrastructure as part of 1) Transit-Oriented Development (TOD) projects linked with affordable housing or housing-related infrastructure or 2) capital infrastructure projects or programs as part of Integrated Connectivity Projects (ICP).	None	Per state legislation, 20% of future Cap & Trade proceeds are to be apportioned to the AHSC	FY 2015 ongoing, CSGC to award projects late June 2015	Funds projects that reduce greenhouse gas emissions & vehicle miles traveled to support infill/compact development & improve low-carbon mobility options. 50% set-aside for affordable housing & 50% set-aside for projects benefiting disadvantaged communities (not cumulative). TOD grants from \$1m to \$15m. ICP grants from \$500k to \$8m.
Bicycle e-Locker and Rack Voucher Programs	Bay Area Air Quality Management District	SF Bay Area	Purchase & installation of bicycle parking e-lockers and/or racks. Options to continue funding for parking projects & expand the program to include bikeways for FY 2016 are under consideration.	Minimum of 10% for e-lockers, none for vouchers.	\$900k total for both programs in FY 2015	FY 2015 call for e-lockers closed 2/9/15, funding for racks open until funding runs out.	e-Lockers: \$10k to \$50k per agency annually (limited to \$2,500 per locker). Awards for bicycle racks (up to \$60 per space) via vouchers redeemable for equipment through Air District-contracted vendors. Up to \$15k per agency annually for bicycle racks.
Bicycle Parking Incentive Program	Commute.org	San Mateo County	Purchase & installation of bicycle lockers & racks for employers in San Mateo County.	None	\$40k in FY 2015	FY 2015 ongoing on a first-come, first served basis until funding runs out.	Up to \$500 per unit, capped at \$10k per employer.



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