

# VISION ZERO

ARLINGTON COUNTY

## Peer Agency Vision Zero Action Plan Review

Department of Environmental  
Services Transportation  
Engineering & Operations

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# I. Introduction

Vision Zero is a traffic safety strategy that works towards achieving safety for all users, with the goal of reducing traffic fatalities and serious injuries to zero. Vision Zero considers the built environment, policy, and technologies that influence behavior on the transportation system. Vision Zero is not a set list of actions, but rather an approach and mindset where actions are customizable to the identified safety needs and goals. In July 2019, the Arlington County Board adopted a resolution committing to Vision Zero. Through this comprehensive and holistic approach, the County aims to eliminate traffic fatalities and serious injuries.

This document provides a peer review of established Vision Zero programs in U.S. cities that have similar characteristics or targets as Arlington County. The five Vision Zero cities identified by Arlington County staff for the peer review include:

- Cambridge, MA
- Richmond, VA
- Denver, CO
- San Francisco, CA
- Seattle, WA

This peer review provides a thorough review of the plans, policies, data, analytical processes, websites and multimedia materials, and engagement strategies identified by each peer agencies. This document provides a detailed review of the work each Vision Zero program, specifically highlighting any innovative or exemplary work accomplished by each identified peer agency in the following categories:

- Elements from the Action Plan
- Policies in Play
- Data Sources
- Analysis Methodologies & Tools
- Website and Multimedia Platforms
- Engagement, Outreach, and Branding
- Funding and Implementation
- Roles and Responsibilities

Following the review and documentation of peer agency Action Plans, the project team conducted phone interviews with staff at each agency to gather more information on best practices and lessons learned in their Vision Zero program efforts. Documentation of those conversations is provided in the Appendix.

Section VII Findings and Key Takeaways summarizes both the peer review of plans and the interviews conducted with city staff in the locations of the peer reviewed plans.

## II. Cambridge, MA

### A. Elements from the Action Plan

The 2017 Action Plan for Cambridge, MA, hereafter “Action Plan”, was finalized in December 2017 and includes both long and short-term “action items”. The general structure of the plan is

such that there are 42 actions identified which fall into one of seven "initiative" categories. Those categories are:

1. Design and Operate Safe Streets: The City will design and operate our streets to ensure that people of all ages and abilities can walk, bike, use transit and drive safely.
2. Improve Large Vehicle, Taxi/For-Hire Vehicles, and Transportation Network Companies (TNCs), such as Uber and Lyft, Safety.
3. Ensure equity in Vision Zero: The City will ensure all Vision Zero efforts promote equity and inclusiveness and protect people of all ages and abilities, paying attention to vulnerable and underserved populations.
4. Lead by Example: The City will lead by example in all things related to traffic safety. City policies and actions will reflect our commitment to Vision Zero.
5. Engage the public on Vision Zero: The City will engage the public to gather feedback on traffic safety related concerns and priorities, educate and change behaviors to improve public safety and public health.
6. Create Partnerships: The City will partner with universities, private businesses, and other local and state entities to improve traffic safety.
7. Use Data to Direct Efforts and Measure our Progress: The City will develop metrics to guide decision-making, measure progress on Vision Zero activities and share successes and challenges in a transparent way.

Each of the 42 actions include time constrained targets. The periods for the targets are "Fiscal Year 2018", "Fiscal Year 2019", and "3-year goal". While every action has a target, most do not have targets for all three periods. One item to note regarding the Cambridge, MA Action Plan is that while the identified actions all have targets of three years or less there is no identified target date for achieving the goal of zero traffic related deaths or serious injuries. Instead the Action Plan focuses on working towards the goal.

The city of Cambridge has committed to updating their plan every two years. This update cycle was part of the initial city council resolution (Appendix C of the 2017 Action Plan). In between updates Cambridge is publishing a progress report on an annual basis. The first progress report for the Cambridge, MA Action Plan was published in August of 2019.

A key takeaway from the August 2019 Progress Report pertains to the timeframe of the actions identified in the Action Plan. On page 7 of the August 2019 Progress Report it is noted that "[t]he Action Plan was ambitious by design, and . . . included targets that were aspirational in that they might not be achievable in the designated time frame. However, this was not made clear to the community through a system of prioritization or by providing details about feasibility." Much of the August 2019 Progress Report is devoted to updating the goals and timelines.

The following bullets summarize unique action items identified under Cambridge's seven safety initiatives:

- Cambridge, MA implemented two measures related to speeds as part of their Action Plan. The first was reducing the default speed to 25 MPH for all streets. The second was the development of new 20 MPH Safety Zones in specific densely-populated, high-use multimodal business districts. These Safety Zones were identified in the year after the initial Action Plan was adopted. They are centered on Central Square, Harvard Square, Iman Square, Kendall Square, and Porter

Square. Several of the Safety Zones are also being targeted for engineering actions. These actions include intersection redesign to improve safety, simplified signal operations, improved left-turn movements for cyclists, improved pedestrian crossings, and reduction in conflict points.

- Another unique element that stands out is the “Vision Zero Rapid Response Protocol” that Cambridge established for fatalities and serious injuries. The Rapid Response Protocol uses an incident response team made up of representatives of City departments and the Vision Zero Advisory Committee to evaluate and analyze the crash site, conditions, and known details of each crash to identify short-term and long-term changes that can potentially mitigate crashes in the future. The Protocol established a timeline that is faster than the police investigation or other review processes.
- Cambridge has an extensive bicycle network. Implementing separated bicycle facilities, bicycle signals, and bicycle boxes has been a heavy focus for the City. Cambridge is also exploring Pedestrian Hybrid Beacons and several types of pedestrian activated flashing beacons to enhance crossing visibility.
- Cambridge plans to redesign roadways and curbspace to prevent vehicles stopping and parking in bike lanes, crosswalks, and pedestrian ramps.
- The Action Plan acknowledges that available delivery loading area is limited, especially when considering new bicycle and/or pedestrian accommodations. To help understand the impacts of large vehicle deliveries in Cambridge, the Action Plan called for a “Delivery Solutions Study.” This study would evaluate issues related to truck deliveries and their interaction with the most vulnerable users including cyclists and pedestrians. In addition, educating people who bike and walk about blind spots for larger vehicles has aided in helping the community members protect themselves in their interactions with those vehicles. The Action Plan’s Year One Progress Report notes an increase in truck safety through programs including the development of an urban freight forum with a focus on truck safety; the compilation of a draft truck side guard ordinance which aims to require side guards on delivery trucks which help prevent people struck by delivery vehicles from being swept under the vehicle; and installation of side guards on most eligible City-owned vehicles.

## **B. Policies in Play**

The two key policy-related efforts identified in the Action Plan include:

- Efforts to establish “formal protocols for coordination with state agencies when crashes occur on facilities outside of City jurisdiction.” (This plan has yet to be established.)
- City Council passed an ordinance mandating that “protected bike lanes be installed on any street that is being reconstructed and has been previously identified as part of the separated network in the Cambridge Bicycle Plan.”

Many of the action items from the Action Plans are written as policy goals while the specific actions identified are not policy based. For example, one action item is “Traffic Calming” and the specific actions identified are to “install raised intersection at Healy Street”, “Complete community process for Sixth Street”, and “Continue Traffic Calming program”. The structure of

the Action Plan is geared more toward specific actions to achieve policy goals and less towards policy changes.

### **C. Data Sources**

The City of Cambridge provides a crashes map portal<sup>1</sup>, which uses information from the Boston Police Department, City of Boston Emergency Medical Services, pedestrian crash information collected by WalkBoston and bicyclist crash fatality information collected by the Massachusetts Bike Coalition.

Cambridge also uses an app “Commonwealth Connect” (developed prior to Vision Zero efforts) that allows residents and visitors to report quality of life issues, including potholes, sidewalk and bike lane obstructions, and unplowed sidewalk and bike lanes. An online safety portal specific to Vision Zero is identified as a fiscal year 2019 goal in the Action Plan.

The City of Cambridge also collects data on a project-by-project basis to assist with identifying, prioritizing, and developing the design and environmental considerations. For example, when considering separated bicycle lanes along Cambridge Street, staff collected and analyzed traffic volumes, motor vehicle speeds, parking utilization, bicycle counts, pedestrian counts, and crashes and applied findings to design considerations. This process began prior to the development of the Action Plan. The commitment to this process was strengthened as part of the Action Plan in the action item related to growing the network of separated bike lanes which called for Cambridge to “use-data-driven strategies . . . to identify locations with the greatest need for separation”.

Cambridge acknowledged one data challenge with crash reporting is that not all Police Reports indicate whether Emergency Medical Services (EMS) transports were performed. This is one aspect of data collection that Cambridge is hoping to improve.

### **D. Analysis Methodologies & Tools**

Under the Vision Zero program, Cambridge staff use crash data to evaluate areas of highest need and identify the strategies for optimum safety improvement. The most recent report, “Crash Trends and Locations: 2000-2016” was developed in May of 2017 by the City of Cambridge Police Department in conjunction with the Vision Zero team. Most of the graphics in the Action Plan related to safety come from this report. This analysis included a review of all reported crashes, motor vehicle crashes, non-motor vehicle crashes, and crashes resulting in EMS Transport. The report also included a density map of crashes requiring EMS Transport. The Progress Report notes that the City has developed a data strategy and tracking indicators and should work to share their data strategy with the general public. One item of note is that this process of density reporting is like what other areas have done in the development of a High Injury Network (HIN) but less robust in nature.

Cambridge staff review the cause of crashes to assist in identifying mitigation measures that will reduce the likelihood of recurrence. For example, the Action Plan cited that doorings, crashes that occur when a vehicle occupant opens their car doors and fails to check for oncoming cyclists, are the most common type of crashes involving TNC drivers.

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<sup>1</sup> <https://apps.boston.gov/vision-zero/>

## **E. Website and Multimedia Platforms**

The Cambridge Vision Zero program website contains the following content:

- The Action Plan
- Safety Zone Maps (identifying the new 20 MPH Safety Zones created through Vision Zero)
- A video overview of Vision Zero Initiative
- A crash trend map of data spanning from 2006-2016
- News blurbs from the planning stages of Vision Zero are also provided
- A Vision Zero Toolbox, listing various interventions that Cambridge staff consider for safety improvements
- A page detailing the Vision Zero Advisory Committee mission, goals, members, proposed projects, and meetings details.
- Links to four (4) Vision Zero Projects detailing information related to each project that was initiated under the Vision Zero program.

## **F. Engagement, Outreach, and Branding**

The following outreach and engagement activities were initiated under the Cambridge Vision Zero program:

- Implementing Safe Routes to School programming at elementary and upper schools.
- Conducting an urban freight forum for safe and efficient movement of goods in Cambridge.
- Facilitating of the Vision Zero Advisory Committee, a volunteer-based group of Cambridge residents and representatives of local advocacy groups that meets quarterly.
- Distributing printed materials such as the "Getting Around Cambridge" magazine, which includes information on Vision Zero, as well as overall safety information for active transportation modes.
  - Per the 2017 Advisory Committee presentation available online, additional promotional materials used early in the Vision Zero program included printed brochures promoting safe pedestrian, public transit, and bicycle practices and describing the negative impacts of driving alone.
- Conducting in-person advocacy efforts for of walking, bicycle and transit modes of transportation.
- Hosting various promotional activities and outreach events during May which is the City of Cambridge's Bike Month.
- Using social media outlets including Facebook, Instagram, and Twitter.
- Collecting public feedback via an online map (goal targeted for Fiscal Year 2019).

## **G. Funding and Implementation**

Specific funding for implementation activities noted in the Action Plan include:

- Local outreach to communities, schools, and the general public using a \$15,000 Community Compact grant from the Commonwealth. The Cambridge Police Department received a \$50,000 grant to support and supplement speed enforcement and pedestrian safety following the implementation of 25MPH posted speed limits on city-owned streets.

- Cambridge residents vote on how to spend a portion of the City's budget, where the 2015 vote resulted in the allowance of \$50,000 to install separated bicycle lanes.

## H. Roles and Responsibilities

The Cambridge County Board and the Vision Zero Advisory Committee work together towards Vision Zero goals. The goal of the Vision Zero Advisory Committee as stated in the Action Plan is “[t]o ensure Vision Zero is a truly collaborative initiative, [to] include representation from the most appropriate stakeholders and [to reserve] a number of seats on this committee for a number of specific stakeholders”. The Vision Zero Advisory Committee includes:

- Cambridge residents
- City staff
- Local universities
- The Cambridge Chamber of Commerce
- Representatives of local advocacy groups (Livable Streets, WalkBoston, Boston Cyclists’ Union, Massachusetts Bicycle Coalition, Cambridge Bicycle Safety, etc.)
- The City’s Bicycle Committee, Pedestrian Committee and Transit Advisory Committees,
- The Commission for Persons with Disabilities

The goals in the Action Plan related to the Advisory Committee are to establish and start meeting quarterly, establish committee goals in fiscal year 2018, and to incorporate guidance from the committee in to revisions of the Action Plan in fiscal year 2019.

In addition, Cambridge aims to foster partnerships with agencies and groups who will aid in advancing the Vision Zero priorities. Cambridge aims for partnerships with neighboring cities and state agencies to share best practices and improve statewide regulations and policies. Partnerships with universities, business and non-profits enable connections to research into safer technologies, as well as connections to large groups of student-residents and employees for distribution of safety information.

## III. Richmond, VA

### A. Elements from the Action Plan

Richmond, VA embarked on their Vision Zero efforts in October of 2017 when Mayor Levar M. Stoney pledged the City to the Vision Zero global strategy. That pledge has the stated goal of striving to eliminate serious injuries and death by 2030. The development of an Action Plan followed the signing of the pledge and is described in the plan itself as “the first step in a much larger, multi-year effort toward the zero goal.”

The Richmond Action Plan, hereafter “Action Plan”, is a comprehensive list of actions that Richmond and its partners will pursue in the years ahead. The Action Plan identifies the Safe and Healthy Streets Commission (SHSC) as the advisory board guiding the development and implementation of Vision Zero in Richmond. The SHSC is comprised of representatives from agencies, organizations, and citizens across Richmond. It includes members from engineering, enforcement, education, public health and transportation partners. They meet quarterly to monitor safety and develop recommendations. This group will be responsible for implementation of the Action Plan going forward.

The Action Plan notes that in a cost-constrained environment not all actions will occur concurrently. As such, safety partners will annually identify actions from the comprehensive list for prioritization. There is no indication within the Action Plan of a timeframe for formal updates to the Action Plan.

Richmond has categorized their Action Plan into three focus areas listed below, and the plan's action items are classified by each focus area.

- Executive—which applies safety initiatives to be carried out by the Mayor's office.
- Legislative and Budget—which develops laws, policies, and budget resources.
- Culture—which communicates and educates users of the transportation network.

At the Executive level, Richmond's Vision Zero Plan identifies the following objectives:

- Institutionalize Vision Zero as Richmond's approach to its transportation system, including stakeholder and partner collaboration and sharing of responsibilities.
- Coordinate with leaders of different groups to align strategy and approach, including working with Richmond (and other) Police Departments to target enforcement such as seat belt use, yield to pedestrians, speeding; engage with governor, City transportation planning, regional leaders for regional planning and safety programs.
- Promote a culture of safety through policies, conferences, enforcement, and forums.
- Develop a speed management program with data collection, review of existing design speeds and potential geometric changes in high injury street network.
- Promote transportation safety and mobility and the support of equitable healthy communities, incorporating Complete Streets approach to allow safe trip via multiple modes.
- Evaluate Vision Zero efforts through performance measures and annual reporting.

Details on the objectives related to the Legislative and Budget category are described in Sections B. Policies in Play and G. Funding and Implementation. Culture actions are described further in Section F. Engagement, Outreach and Branding.

Based on the objectives identified for each focus area, Richmond's plan identifies 12 Vision Zero prioritized actions for Vision Zero Year 1 (the 2019 fiscal year). For each action, the plan lists the rationale, lead organization, and the metric that will be used to measure progress. In this sense, Richmond is taking a year-by-year approach to realizing the Vision Zero safety program.

## **B. Policies in Play**

The Action Plan Legislative and Budget focus area includes actions to modify or introduce laws and policies and budget resources towards the goals of Vision Zero.

Richmond's Vision Zero Action Plan identifies the following objectives for the Legislative and Budget focus area:

- Establish policies, regulations, or laws that support a safe systems approach and safety culture.

- Identify opportunities to improve safety during land use and development activities.
- Identify fiscal opportunities and establish budgetary support for a sustainable Vision Zero program.
- Identify partnership opportunities and establish budgetary support for Vision Zero to design infrastructure that is safe for all users.
- Implement safety treatments on the high-injury street network.

Notable action items targeted to achieve these Legislative and Budget focus areas include:

- Review and evaluate impacts of existing legislation and agency operating procedures for safety.
- Review and evaluate policies affecting intersection sight-distance (on-street parking, etc.).
- Encourage passage of a primary seat belt law for all vehicle occupants.
- Encourage passage of a distracted driving/handheld device ban targeting collaboration with mobile phone companies to address road user distraction.
- Explore Automated speed enforcement or other advanced tools and reinvest revenue generated from automated enforcement into Vision Zero projects.

Specific legislative items identified in the prioritized actions for Vision Zero Year 1 include permitting automated speed enforcement, installation of the maximum number of red-light enforcement cameras, and initiating a primary seat belt law. The Virginia General Assembly currently does not have a law permitting automated speed enforcement or a primary seat belt law; however, SHSC and City staff are monitoring and actively promoting discussion and participating in legislative efforts around new bills for those laws. With the support and involvement of partners, the Richmond Police Department and the SHSC will lead an effort to review and progress speed enforcement tools and participate in legislative discussions. City Council will be informed of all findings for consideration in the Virginia General Assembly.

### C. Data Sources

The City of Richmond uses the following data sources in its Vision Zero program:

- Traffic data provided by the City of Richmond through the Virginia Department of Transportation (VDOT) including crash and volume data.
- Crash data from Richmond Police Department FR-300 standardized report
- Public health department data from emergency room visits to supplement and update data from the FR-300 standardized report. This could include identifying crashes that were not reported or identifying and adjusting injury information from crashes that were reported.
- Additional data from Emergency Medical Services (EMS) transports for all modes was also used to assess level of severity of injuries.

A dashboard, sometimes referred to as a crash portal, is available on Richmond’s Vision Zero website, which shares crash and traffic citation statistics. The crash portal utilizes the City’s Open Data Portal<sup>2</sup>, which, among many other data sets, contains Richmond Police Department

<sup>2</sup><https://cor.maps.arcgis.com/apps/opsdashboard/index.html#/e6097a6342f148ceg12ba98e04551e70>

reports for motorized vehicular crashes. Richmond also publishes an annual report detailing the status of action items, statistics, performance metrics, and summaries on the effects of safety countermeasures.

Richmond acknowledged the following challenges with their Vision Zero data program:

- Non-motorist crashes are likely underreported, especially if there is no damage to motor vehicle.
- The State’s crash form for police officers was designed for motor vehicle collisions, so there is limited information provided regarding circumstances of pedestrian/bicyclist involved crashes.
- The various crash data sources employed for analysis contain different data fields, not all consistent or relevant.

## **D. Analysis Methodologies & Tools**

The Virginia Department of Health uses an Assessment of Health Opportunity Index (HOI) to measure factors that relate to a community’s well-being. The HOI, as well as the complete methodology for calculation, is available on the Virginia Department of Health website.<sup>3</sup> The HOI examines 13 indicators selected after a review of literature on the Social Determinants of Health. Areas with “very low” HOI experience higher fatality and injury rates and are therefore identified as areas with the greatest need. The Action Plan notes that “investments in transportation safety in these communities may contribute to the overall health outcomes of residents in areas with the greatest need.” This helps Richmond, VA meet the equity component of their Action Plan. This information is also used to help achieve the goal to provide safe access to transit stops in high priority areas as determined by the Greater Richmond Transit Company (GRTC).

One of the prioritized actions for Vision Zero Year 1 is to perform an evaluation of current design speeds on the high injury street network—considering context—and explore ways to make physical engineering changes. The Department of Public Works is the lead on conducting the evaluation, which will focus on streets with the highest level of speed-related injuries and identify redesign strategies to promote lower travel speeds.

## **E. Website and Multimedia Platforms**

The main Vision Zero page is within the City’s Department of Public Works website and includes:

- The Action Plan
- A video of the October 27, 2017 inaugural Vision Zero event
- Information about the Safe and Healthy Streets Commission
- An ongoing list of news releases and media coverage for Vision Zero
- A link for members of the public to send an email pledge for safe streets.
- A Vision Zero Dashboard with crash map and statistics from 2013 to June 2019 (Link provided in Section D above)

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<sup>3</sup> <http://www.vdh.virginia.gov/health-equity/virginia-health-opportunity-index-hoi/>

## F. Engagement, Outreach, and Branding

The City of Richmond has taken the following steps toward Vision Zero engagement, outreach, and branding:

- Developing standardizing language and talking points for City and community leaders.
- Providing training and outreach materials for professional drivers at locations for use by school bus programs, transit or other fleet managers, and driving instructors.
- Providing training programs for partners and City organizations on safety priorities and equity considerations.
- Establishing outreach materials for various parties including City staff to use when interacting with the media and the public.
- Developing public outreach materials intended to deter unsafe behavior for both motorized and non-motorized users.
- Implementing an online Vision Zero “safety portal” map to collect public comments and feedback.
- Publishing press releases and media coverage to publicize trends in crash data and safety campaigns.
- Working with law enforcement officers to provide warnings and conduct high-visibility enforcement efforts.
- Communicating with the public and stakeholder groups using both social and traditional media (target outreach groups include faith institutions, schools, businesses, bicyclist, and pedestrian advocacy groups).
- Expanding partnerships with bike share companies, taxi companies, transportation companies, car share companies, and GRTC (Richmond Transit System) to encourage alternatives to driving.
- Partnering with bars and restaurants to increase awareness and promote safe alternatives to impaired driving.
- Publicizing an enforcement campaign to address identified dangerous behaviors in coordination with the Richmond Police Department, non-profit organizations, and the SHSC.
- Coordinating with delivery services to address the needs of trucks and the safety of vulnerable users.

## G. Funding and Implementation

The identified objectives in the Action Plan for the Legislative and Budget focus area are listed above in Section B. Policies in Play. Notable action items within the Legislative and Budget focus area include:

- Establishing a permanent, dedicated funding source for Vision Zero implementation and coordination.
- Dedicated funding for automated enforcement to address red-light violations.
- Reinvesting revenue from automated enforcement into Vision Zero projects.

Specific budgetary items identified in the prioritized actions for Vision Zero Year 1 include establishing a permanent dedicated funding source for the program and identifying the City

Council as the lead organization tasked with the responsibility of identifying annual funding for Vision Zero.

## H. Roles and Responsibilities

The following are the main roles and responsibilities associated with Richmond’s Vision Zero Program:

- The prioritized actions for Vision Zero Year 1 establishes a Vision Zero Program Coordinator to manage communication and collaboration across the many involved agencies and organizations.
- The Department of Public Works is responsible for designing, constructing, and maintaining the City’s transportation system assets. They will take the lead in evaluating and prioritizing improvements on the high-injury network, as well as the lead on promoting complete streets and bicycle network connections.
- The Safe and Healthy Streets Commission (SHSC) is the advisory board guiding the development and implementation of Vision Zero in Richmond with representatives from engineering, enforcement, education, public health, and transportation safety partners. The SHSC meets quarterly to monitor safety and develop recommendations to address safety issues.

The Richmond Police Department is responsible for targeted, high-visibility enforcement, as well as collaboration with the Office of the Press Secretary to develop the publicly available Vision Zero Dashboard (link above in section E). The Police Department also takes the lead on analyzing crash and traffic data to identify areas for improvement on the transportation system. As noted above, the Police Department, partners, and SHSC will continue to monitor and propose legislative changes that can assist with enforcement.

## IV. Denver, CO

### A. Elements from the Action Plan

Denver’s Vision Zero Action Plan, hereafter “Action Plan” was adopted in October 2017. The five-year Action Plan identifies 2030 as the target year for achieving zero traffic-related deaths and serious injuries. The Action Plan also calls for a biannual progress report on the status of implementation. Progress reporting to date appears to be on an annual basis based on a review of the website.

The Plan established five themes that express short- and long-term safety needs for Denver. The following bullets list noteworthy action items that fall under each theme that Arlington could consider for its Vision Zero Action Plan:

- Enhance City Processes and Collaboration
  - Develop a new rapid response strategy following pedestrian, motorcyclist, and bicyclist fatalities beyond 2017.
  - Systematically identify locations for street modifications where crash trends, rapid response information, and other data identify a need for street modification—targeting two locations per year in 2018-2019 and four per year from 2020-2023.

- Establish an internal process to ensure that Vision Zero mitigations are evaluated and implemented where feasible on projects that fall within Denver’s high-injury network.
- Build Safe Streets for Everyone
  - Update Denver’s “Transportation & Mobility Policies and Procedures” to include treatments with proven safety benefits, prioritizing the reduction of serious crashes.
  - Create holistic “Street Design Guidelines” that identify proven safety and speed-control treatments that can be implemented on Denver’s system.
  - Develop “Multimodal Safety Toolbox” as part of Denver’s Neighborhood Traffic Management Program (NTMP).
  - Develop a policy to prioritize pedestrian, bicyclists and transit riders in temporary work zone detour conditions.
  - Implement safety treatments (speed intersection, crossing, lighting, signal, and technological safety treatments) on the high-injury network and in Communities of Concern using targets like the number of corridors, intersections, or locations per year for each treatment.
- Create Safe Speeds
  - Create speed management program in collaboration with the Police Department that implements a methodology for speed data collection, street engineering design changes, and automated or manual enforcement.
  - Establish criteria for different types of “slow zones” and identify specific engineering/ enforcement treatments for the zone types. Denver targeted the establishment of one “slow zone” in the first two years and two “slow zones” per year by 2020. “Slow zones” should focus primarily on Communities of Concern.
- Promote Culture of Safety
  - Increase the convenience of alternatives to driving by working with bike share, taxis, Transportation Network Companies (TNCs) such as Uber and Lyft, and the Regional Transportation District, which handles buses, fixed guideway and airport service—especially during high volume or high-risk driving times (ex. holidays, rush hours, and near drinking establishments).
  - Associate infrastructure changes and enforcement activities with messaging and Vision Zero branding to increase awareness of why traffic safety is important.
  - Train police with respect to new safety-driven policies and practices. In addition, police will prioritize enforcement of dangerous moving violations and impairment enforcement on the high injury network.
  - Create and deliver a training course to the City’s organizations about Vision Zero goals, actions, and language—designed so that attendees can train others within their organizations.
  - Work with media to more accurately report traffic crashes and avoid victim-blaming.



- Coordinate with Safe Route to School efforts to develop travel plans that reduce congestion, encourage the use of alternative and active transportation modes, and increase safety during pick-up and drop-off times.
- Improve Data and Be Transparent
  - Provide a biannual report that the public can access to summarize crash statistics and monitor Vision Zero actions and progress.
  - Provide official traffic crash data particularly for traffic fatalities and serious collisions and summary information, available to the public.
  - Improve the City’s crash data management process including the submission process, creation of consistent data fields for various city agencies, improvement of accuracy of geocoded crash locations, and sharing of crash summary files both for City staff and the public (potentially through the website or Denver’s Open Data Catalog).

In addition, Denver’s Vision Zero planning includes an equity element, which specifies an approach to define the high injury network and Communities of Concern. Both the High Injury Network (HIN) and Communities of Concern (CoC) comprise nearly 40% of all traffic deaths and typically include areas with low incomes, low vehicle ownership, and high number of seniors, people with disabilities, schools, and community centers. Specific approaches to equity include:

- Focusing on street design changes instead of increasing in-person traffic enforcement.
- Increasing automated (unbiased) speed enforcement along the HIN and along school routes, while also providing warning signs to promote driver compliance.
- Pilot a “diversion” program for traffic violations, which would offer education and positive reinforcement instead of increased fines.
- Engage with community members of the CoC to have educational discussions about traffic safety.
- Incorporating equity and demographic considerations into police officer training courses.

Denver has identified several Vision Zero Best Practices in their action plan, including creating and using multimodal street design guidelines, applying parking restrictions/daylighting near intersections, adding leading pedestrian intervals, implementing slow zones, and providing median refuge islands for long pedestrian crossings.

## **B. Policies in Play**

Denver’s Action Plan includes the following action items targeted toward changes in policy or legislation to promote traffic safety:

- Pursuing a city-level primary seatbelt law.
- Modifying City code to reinvest revenue generated from automated enforcement into Safe Routes to School and Vision Zero project and programs.
- Expanding Denver’s Nuisance Abatement Law to include stricter penalties related to car ownership and operations for repeat offenders.
- Building a coalition to review and revise Colorado state traffic safety related laws and policies including automated speed enforcement and distracted driving.

- Updating the Transportation & Mobility Policies and Procedures to include treatments with proven safety benefits with targeted speed control treatments by street type.
- Developing a policy to prioritize pedestrian, bicyclists and transit riders in temporary work zone detour conditions.
- Applying the “Denver Moves: Trails and Pedestrians Plan” when installing or upgrading pedestrian crossings and building the pedestrian network.

### C. Data Sources

Primary data sources used in Denver’s Vision Zero program include:

- Crash data from Denver Public Works.
- Fatality data and speed data from the Denver Police Department to supplement missing data from Denver Public Works report (e.g., fatalities that occurred after the fact, such as when victims arrived at hospital).
- Ancillary crash data from other police jurisdictions (for crashes along boundary roadways to which police departments outside of Denver responded) from Colorado Department of Transportation (CDOT).
- CDOT fatal crash data from Colorado’s Problem Identification Report.
- Fatal crash investigations as submitted to the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System.
- NHTSA fatal crash rates.
- Denver Public Works street centerline roadway information, including roadway type and characteristics (used to visualize how crashes were distributed throughout the street network).
- Mode share data from the US Census Bureau’s American Community Survey.

### D. Analysis Methodologies & Tools

To target improvements to the corridors and communities most in need, Denver used data to develop both a high injury network and Communities of Concern to which safety improvements could be focused.

- Denver developed the High Injury Network (HIN) by plotting crash data and identifying corridors with the highest number of fatal and injury crashes. The process for developing the HIN began by firsts assigning all crashes to the nearest intersection. This intersection data was then tabulated by severity and crash type where possible. Street segments were combined along corridors and a series of sliding windows across each corridor were developed. The HIN was finalized by filtering and manual intervention. A complete process for development is detailed in the Technical Supplement to the Denver Vision Zero Action Plan.
- Denver developed Communities of Concern (CoCs) by using a weighted overlay process to create an average score for each HIN segment. Socio-economic data from the American Community Survey was cross-referenced with the intersection data created in the development of the HIN to identify communities with low education attainment, higher poverty rates, and areas of high non-motorized crashes. This process was used to identify the most vulnerable neighborhoods within Denver. Of note is that while the CoCs comprise only 30% of the area they accounted for 39% of all traffic deaths and 47% of all pedestrian deaths.

A more detailed description of the sources and methodologies applied for the development of the HIN and CoC is provided in the Technical Supplement to the Denver Vision Zero Action Plan.

## **E. Website and Multimedia Platforms**

Denver’s Vision Zero website includes the following content:

- Graphic banners illustrating the latest available statistical summaries of transportation safety data (including annual traffic deaths through the most current month).
- A link to “What is Vision Zero?”—a page explaining what Vision Zero means for Denver.
- News releases showing headlines, summaries, and images
- A link to a “Map Data & Trends” page including summary statistics, static maps, and descriptions of safety trends in Denver.
- A link to the Data Dashboard (from Denver’s Open Data Catalog) providing interactive crash charts and an interactive GIS map showing fatal and serious injury crashes, the high injury network, and “hot spots.”
- A link to Vision Zero Projects page, providing details on projects specific to the Vision Zero program.

## **F. Engagement, Outreach, and Branding**

Outreach for development of the Action Plan included online and in-person surveys held in the spring of 2017. Online outreach included use of an interactive map that received almost 2,700 responses. In-person engagement included intercept surveys, which resulted in almost 200 in-person intercepts including the Spanish speaking community. The in-person surveys were held at four locations either within or adjacent to Communities of Concern, the high injury network, or adjacent to transit to target the most vulnerable communities for traffic safety.

Denver’s Action Plan outlined engagement, outreach, and branding goals for the Vision Zero program including:

- Standardized Vision Zero language.
- Training programs for partners and City organizations.
- Outreach materials to use when interacting with the media and the public.
- Installation of Vision Zero signage during construction of Vision Zero infrastructure projects.
- Engagement with schools and communities through events and projects.
- Messaging major infrastructure changes and enforcement activities to promote awareness of the importance of traffic safety.
- Facilitation of the Vision Zero Community Program, which offers technical and financial assistance to selected projects from teams of community members (facilitated six projects between May to August 2019 including art installations and pop-up demonstrations of traffic calming measures in targeted areas).
- Engagement with local universities including working with students at Colorado University in Denver.

- Work with agencies or programs to disseminate traffic safety information to specific groups including children, immigrants and homeless populations who otherwise may not have exposure to the City's website.

As per the 2018 Annual Report, there were 12 outreach events led by the Denver Vision Zero Coalition and 26 city-led Vision Zero-related community outreach events, including 25 bicycle education events at 12 different schools and 1 Vision Zero Community Forum. Community engagement included the Engagement with schools included working with students at University of Colorado Denver to create four videos released in August 2019 which promote safe travel behavior.

## **G. Funding and Implementation**

The Action Plan includes action items to establish a “permanent, dedicated funding source for Vision Zero implementation and coordination...by dedicating \$2 million per year initially and later, \$3 million per year to Vision Zero projects and programs.” The Action Plan identifies the Department of Public Works at the lead with partners including the Mayor’s Office, the Denver Police Department, the Department of Environmental Health, and CDOT. The Action Plan also called for the addition of nine full time staff to assist in the Vision Zero program over the next five years. The 2018 Annual Report identified that four full-time staff members were hired specifically dedicated to Vision Zero.

Implementation of the Action Plan has been proactive in Denver. Denver announced its commitment to Vision Zero in 2016 and then began to develop their Action Plan. By the publication of the Action Plan in 2017, the City was able to report progress on several safety projects including signal timing changes, traffic calming measures, Rectangular Rapid Flash Beacons, speed limit reductions, curb extensions, raised medians, and protected left-turn phasing at specific locations in Denver.

## **H. Roles and Responsibilities**

Denver has identified various partners for each of the action items provided in the 2017 Action Plan. The Department of Public Works is the lead coordinator on all actions. The Mayor’s Office is also responsible for major action items, which include establishing dedicated funding and staff for Vision Zero projects, convening regular meetings with the Technical Advisory Committee (TAC), taking the lead on policy and/or legislative actions, increasing convenience of alternatives to driving, and implementing the communications campaign. The TAC is a group of safety stakeholders and is not to be confused with the policy board of the Denver Metropolitan Planning Organization (MPO). The TAC includes representatives from the Mayor’s Office, City of Denver departments, Mayor’s Pedestrian Advisory Committee, Mayor’s Bicycle Advisory Committee, the local MPO, and Colorado DOT to name a few. The committee charter for the group is included in the Action Plan.

The Denver Police Department is another key partner in the Vision Zero Program. The Police Department has dedicated staff for the Vision Zero program and contributes to regular Vision Zero coordination meetings and rapid response meetings. The Police Department works with the Department of Public Works and CDOT to provide enforcement per the direction of the Vision Zero plan and will be involved in supporting policy or legislative changes such as pursuing the primary seatbelt law.

## V. Seattle, WA

### A. Elements from the Action Plan

The Seattle Department of Transportation (SDOT) is one of the US pioneers in safety visioning, having launched a “Target Zero” program in 2000, which resulted in a reduction in fatal and serious crashes. Seattle then adopted Vision Zero in their first Vision Zero Plan, hereafter “Action Plan”, in February of 2015. The Vision Zero plan continues the City’s commitment to safety with the goal to end traffic deaths and serious injuries by 2030.

Seattle’s Action Plan includes a comprehensive approach to safety, including near-term actions, through 2030. Seattle reports on progress on a biennial basis. Continuous updates are provided on the program website ([www.seattle.gov/visionzero](http://www.seattle.gov/visionzero)). Since 2015, there have been two update reports, the 2017 Vision Zero Progress Report and the 2019 Vision Zero Update Report.

Near-term actions identified in Seattle’s Vision Zero 2015 Action Plan are grouped into three categories:

- Street Design, Policies, and Regulation
  - 20 MPH Speed Zone Program - A program for residential streets, local streets with high collision history, and near schools, and/or parks. Both signage and pavement markings will be provided to clearly delineate the 20 MPH zone, as well as removal of obstructions to ensure visibility of pedestrians in crosswalks.
  - Reduce Arterial Speed Limits – A program to reduce speeds to 30 mph or lower using tools such as radar speed signs and street design changes.
  - Downtown Safety – A strategy targeting and prioritizing specific downtown locations for safety improvements including reduced speed limits to 25 MPH, signal timing, phasing and operational changes such as leading or lagging pedestrian intervals (LPIs), protected turn phases, removal of dual turn lanes, and right turn on red restrictions.
  - Urban Center Safety - Improvements at targeted locations, which may include signal timing phasing changes, protected turn phases, LPIs and traffic calming elements.
  - Master Plan Development and Implementation – Implementation of safety-related actions identified in the Pedestrian and Bicycle Master Plan and development of a Freight Master Plan that identifies safe and reliable urban delivery strategies.
  - Transit Safety Improvements – Proposed spot improvements near transit facilities, including signal timing and lane allocation improvements to increase pedestrian safety and access to transit.
  - Road Safety Corridors – A program targeting five corridors for low cost engineering, enforcement and education measures.
  - Complete Corridors – Plan to develop long-term multimodal improvements on various identified corridors.
  - Capital Projects – Implementation of major projects on four identified corridors.
  - Safe Routes to School (SRTS) – Development and implementation of a School Road Safety Action Plan, as well as SRTS services including infrastructure improvements at over 20 schools.

- Crosswalk Policy – Update of Seattle Department of Transportation’s (SDOT) crosswalk policies to emphasize to presence of transit stops, elderly, and students.
  - High Reflectivity Pavement Markings – Development of new standards for all more durable and visible pavement markings.
  - Right-of-Way Improvement Manual (ROWIM)<sup>4</sup> – Update of guidance for private developers working in Seattle’s right-of-way including new street types prioritizing safety and quality for all users, pedestrian and bicycle design standards, and a new section providing low-cost, interim design treatments to improve safety while funding is being secured.
  - Construction Coordination – Maintenance of safe conditions for all modes during construction by promoting creative and low-cost safety strategies.
- Education and Public Engagement
    - Vision Zero Campaign – An overarching outreach effort to disseminate information to drivers, pedestrians, and bicyclists about new roadway features and increase awareness of all users on the road.
    - Targeted Outreach – Outreach focused on targeted demographic, geographic, and modal-specific groups—specifically, school children, seniors, and underserved populations.
    - Transportation System User Guides – Guides that provide traffic rules of the road and provide transportation options.
    - Stop for Pedestrian Signs – Signs to reinforce existing pedestrian safety laws by providing prominent signage at crosswalks and along shoulders.
    - Public Engagement - Actions such as hosting events and contests, adding safety education activities to existing events, and partnering with advocacy agencies to provide educational kits for use by community groups, schools, etc.
    - “Re-enforcement” Patrols – Program to reward and reinforce good behavior on the transportation system.
- Enforcement
    - School Zone Photo Enforcement – Installation of at least twelve additional cameras in six school zones to promote reduced speeds and improve safety.
    - High Visibility Enforcement – Approach to enforcement in high crash locations targeting distracted drivers, driver impairment, and speeding.
    - Corridor Safety Patrols – Targeted enforcement of corridor-specific safety issues on major arterial streets.
    - Pedestrian Safety Emphasis Patrols – Targeted enforcement for failure to yield to pedestrians and blocking the box.
    - Bicycle Safety Emphasis Patrols – Targeted enforcement of traffic laws in areas with bicycle crash histories.
    - Commercial Vehicle Enforcement – Collaboration with Washington State Patrol to ensure safe and efficient freight operations.

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<sup>4</sup> <https://streetsillustrated.seattle.gov/sitemap/>

## B. Policies in Play

SDOT's Vision Zero program has had a large influence on speed limit policies. In 2016, under the direction of Mayor Durkan, SDOT developed a comprehensive speed limit setting policy, which included new sign placement standards to ensure that drivers pass a speed limit sign every quarter mile and at every arterial-to-arterial intersection. Also, in 2016, SDOT reduced the speed limit from 25 to 20 MPH on 2,400 miles of neighborhood streets and from 30 to 25 MPH as the default speed on arterials. In 2020, SDOT will evaluate speed limits on all arterial streets in Seattle and will implement speed limit reductions to 25 MPH on more than 90% of city-owned arterial streets by mid-2021. SDOT will work in partnership with Washington State DOT to lower speeds on shared streets.

SDOT's Vision Zero program has also targeted pedestrian safety through its policies. In 2019, SDOT established a policy to evaluate adding LPs when a new traffic signal is built or during signal maintenance work. An LPI is a leading or lagging pedestrian interval which allows a pedestrian to start or complete a crossing while all vehicular signals are in a red phase. This improves the visibility of pedestrians at signalized crossings. This policy has resulted in LPs being added to over 100 locations in 2019, with an additional 125 planned for 2020. Additionally, the Vision Zero Action Plan identified an action item to update of SDOT's crosswalk policies to prioritize pedestrian access near transit stops, the elderly, and students.

## C. Data Sources

SDOT's Vision Zero Progress Reports and Action Plan include data from the following sources:

- SDOT/Seattle Police Department crash data
- SDOT roadway inventory and characteristics data
- Seattle Fire Department data on crashes to supplement police reports
- Seattle Police Department SeaStat program data (includes crime data and community reports of incidents)

## D. Analysis Methodologies & Tools

The Action Plan and subsequent Progress Reports identify the following analysis terms that have helped to target safety improvements and policies on the SDOT system:

- Identification of specific corridors and locations through data analysis focused on serious injury and fatal crash types. Implementation of a Bicycle and Pedestrian Safety Analysis (BPSA) that reviewed data from 2007-2014. The first phase of the BPSA began in 2015. The study included an analysis of characteristics and patterns of crashes involving pedestrians or bicyclists. A multivariate analysis was conducted using exposure estimates to understand the significance of factors contributing to crashes. The BPSA included development of a model<sup>5</sup> to identify potential locations for bicycle and pedestrian crashes. Input variables included roadway and land use characteristics. Output included number of people estimated to be walking, biking and driving at a given location, and number of crashes. (DataKind developed vehicle volume estimates). For bicyclist crashes, models included all bicyclist crashes, opposite direction, and angle crashes. For pedestrian crashes, models

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<sup>5</sup> <http://www.seattle.gov/visionzero/materials> under *Maps, Data, Research*, view *Bicycle and Pedestrian Safety Analysis*

included crashes involving motorists turning left, turning right, and proceeding straight. Exposure model variables were refined as more information became available. Statistics linked the variables to estimate expected outcomes based on input variables. This improved understanding of the relationship between roadway conditions and crash risk and supported prioritization of improvements. Future steps as part of the BPSA include obtaining additional data to further analyze bicycle and pedestrian crash causes. Seattle plans to publish the BPSA 2.0 in early 2020 to include additional years of data and revised exposure models.

- SDOT conducts before-and-after reviews of safety projects. For example:
  - The 2017 Progress Report included a review of 4-miles of redesigned corridors, detailing before and after statistics of crashes and speeds
  - SDOT reviews crash data at intersections where red light cameras were installed to identify their effectiveness at reducing right angle and pedestrian crashes.
  - SDOT reviews the effectiveness of speed zone safety cameras installed in school zones. This includes review of average number of daily traffic violations, average speeds, total collisions, and pedestrian and bicycle collisions.

The 2019 Progress Report provides safety performance metrics for reduced speed limit areas: there has been a 6% decrease in serious crashes and 9% decrease in total crashes since the speed reduction.

- In the 2019 Progress Report, SDOT identified priority streets for engineering and enforcement efforts based on the density of collisions, frequency of fatal and serious injury crashes, average posted speeds, and equity.

## **E. Website and Multimedia Platforms**

Seattle's website for Vision Zero has an intuitive user interface, visual appeal and an extensive amount of relevant content. It does not contain crash information through a portal or mapping interface as other cities have provided. The website contains the following key pieces of content:

- A "What's new?" summary of recent news announcements and statement to the community for involvement.
- A video of interviews conducted at Vox Populi (a Seattle art gallery named after the Latin phrase "voice of the people") related to crash statistics in Seattle.
- A link for information on how community members can obtain Vision Zero "20 is Plenty" yard signs.
- A pledge to say, "crash not accident."
- A link to the "Ongoing Projects" page which contains detailed project information and notes if the project was as a result of the Vision Zero program.
- The "Resources" link leads to downloadable plans and reports under the Vision Zero program, as well as a bulleted list of links to speed limit maps, traffic reports, and bicycle data.
  - The speed limits map provides extensive information on the significance of city speed limits on safety, the speed limit selection process in Seattle, and the existing speed limits in the city with a corresponding interactive map.

- The page includes many traffic reports and studies from 2004-2019 that are available for download including, relevant Vision Zero plans and progress reports, and reports of “Evaluations (Before and After Reports).”
- Bicycle data counts and a bicycle “Level of Traffic Stress” map.
- “Educational Materials” with links to educational and promotional materials including yard signs and the 2016 “Distraction” campaign materials.
- The “Partnerships” link lists current partnerships with community groups, governmental organizations, private companies, and other partners. The also links to the Seattle DOT Twitter and Facebook pages.

## F. Engagement, Outreach, and Branding

SDOT identified the following as key outreach tools for their Vision Zero effort:

- Social media pages (including Twitter and Facebook), which contain all SDOT content, including Vision Zero related posts and videos.
- In-person community outreach events often focused on underserved communities (including conducting outreach at events celebrating specific ethnic communities, affordable housing communities, and other summer events and cultural festivals). Outreach events typically provide take-home information and practical safety items for bicyclists and pedestrians.
- Educational and promotional materials (including yard signs, print materials including rack cards offered in 14 languages, a printable SDOT activity book for kids, and “Traffic Safety in a Box” kits suitable for classrooms and community events to promote awareness).
- Vision Zero Campaign – An overarching outreach effort to disseminate information to drivers, pedestrians, and bicyclists about new roadway features and increase awareness of all users on the road.
- Partnerships with AARP Seattle and KOMO News to promote safety education for older adults, given older adults were the prominent age group in pedestrian related crashes.
- Example project specific outreach events and activities have included:
  - Project listserv and email updates.
  - Contests (such as requesting memes to create awareness of crashes).
  - Partnering with Runta News (a local Somali news organization) to create a Vision Zero video.
  - Community forums, open houses, community conversations, and drop-in sessions.
  - Walk and Talk site tours and events.
  - Online project websites, open houses, and surveys.
  - Mailers, including postcards.
  - Project fact sheets and brochures.
  - Display boards.
  - Visualizations, renderings, and illustrations.
  - Neighborhood Night Out events.
  - Fairs and festivals outreach.
  - Bus stop intercept surveys.
  - Ethnic market drop-ins and poster delivery.
  - Tabling at community centers, including grocery stores and senior centers.

- Social media campaigns.
- Briefings to groups and coalitions.
- “Reinforcement patrols,” which involved SDOT, Seattle Police Department staff, and volunteers from local safe streets advocacy groups performing in-person promotional safety activities. The group spoke with people walking, biking and driving about Vision Zero and handed out educational materials and small token gift cards. SDOT’s aims to continue these activities quarterly.

Also of note, SDOT administered a 2016 “Distraction” campaign that included video, radio and online ads, and public service announcements (PSA’s). PSAs included over 230 English and 120 Spanish video spots with print and online ads in nine ethnic media sources ranging from African American to Somali and Vietnamese. In 2017, SDOT continued these media efforts and provided in-person outreach at locations targeted to reach older adult communities, including senior centers, community centers, and senior housing complexes. Through these efforts, the campaign noted over 260,000 video views and over 1 million “impressions.”

Further increasing on-street outreach, the 2017 Vision Zero Progress Report states that SDOT will launch a Vision Zero Street Teams in 2020 to continue to raise awareness and understanding of transportation safety issues to underserved communities.

## **G. Funding and Implementation**

In November 2015, “The Levy to Move Seattle”<sup>6</sup> was approved. The nine-year, \$930 million levy<sup>7</sup> paid for through a property tax provided funding to “improve safety for all travelers, maintain our streets and bridges, and invest in reliable, affordable travel options for a growing city.” The Levy category of Safe Routes included an investment of \$207 million, including Vision Zero (\$71 million), Pedestrian and Bicycle Safety (\$110 million), and Neighborhood Projects (\$26 million).

Seattle’s Vision Zero plan included partnerships, community outreach, educational material, and street improvements. The city of Seattle partnered with AARP Seattle and KOMO News to build upon safety education efforts. Educational materials about Vision Zero were distributed along with small token gift cards by SDOT, Seattle Police Department, and volunteers. In-person educational outreach about Vision Zero was conducted at community centers, senior centers, senior housing complexes. Public service announcements were played on the radio, online, and television (over 230 English and 120 Spanish video spots ran on television) during fall months (darker/wetter period). Print and online ads regarding Vision Zero were strategically placed in nine ethnic media sources, including African American, Somali, and Vietnamese (resulted in over 18 million impressions in two years). The City of Seattle employed reinforcement patrols to reward people for safe behavior and talking to people about Vision Zero. The 5-Year Safe Routes to School Action Plan outlined improving dozens of walking routes; installing cameras in six school zones; brought walking and biking education to every

<sup>6</sup><https://www.seattle.gov/Documents/Departments/SDOT/About/DocumentLibrary/Levy/LevyFactSheet62915.pdf>

<sup>7</sup><https://www.seattle.gov/Documents/Departments/SDOT/About/DocumentLibrary/Levy/CB118402SpendingBreakdown.pdf>

3rd, 4th, and 5th grade class in Seattle; and constructed 12 projects for safe routes. Enforcement efforts with an equity lens were reviewed using Seattle's Racial Equity Toolkit. Efforts to make streets safer included the installation of additional red-light cameras and school zone safety cameras.

In 2015, the city of Seattle accomplished the following street improvements: improved 35 street crossings, built 11 blocks of sidewalks, constructed 201 curb ramps, delivered more than 10 miles of protected bike lanes and neighborhood greenways, improved safety on busy arterials and calmed residential streets. The Rainier Avenue Pilot Project was one of the major street improvements plans designed to reduce collisions on Seattle's most crash-prone street (lane reductions, transit improvements, signal timing adjustments, speed limit reduction, pedestrian safety elements). Other arterial projects in 2015 included Lake City Way, 35th Avenue SW, Beacon Avenue, Delridge Way SW, Fauntleroy Way SW, and Boyer Avenue E. The city of Seattle partnered with Lyft and Mothers Against Drunk Driving (MADD) to provide rides on New Year's Eve.

In 2016, the City of Seattle continued its efforts to create safer streets. These efforts included building 400 curb ramps, building 15 blocks of new sidewalks, and installing over 3.5 miles of protected bike lanes. Through legislation the city of Seattle lowered the speed limit from 25 to 20 MPH on 2,400 miles of neighborhood streets and lowered default arterial speed limit from 30 to 25 MPH. Vision Zero plans included outreach to underrepresented communities through a grant from Washington Traffic Safety Commission. These outreach events included lunch presentations, kids' outdoor activities, summer events, cultural festivals, interactive traffic safety course, and Vision Zero bags with safety swag. Social media and print ad campaigns encouraged drivers not to use their phones while driving (1 million impressions, 260,000 video views). Additionally, the City of Seattle partnered with UBER again in 2016 to provide rides on New Year's Eve.

From 2017-2018 City of Seattle updated the Pedestrian Master Plan<sup>8</sup> and developed a 5-Year Bicycle Facility Implementation Plan.<sup>9</sup> Ongoing projects included building 4 miles of protected bike lanes, over 3 miles of trails, over 9 miles of neighborhood greenways, and 50 blocks of new sidewalks. New projects included work on high crash corridors in the following locations: NE 65th St, 5th Ave (Central Business District), Rainier Avenue S (Phase 2), 35th Ave SW (Phase 2), Banner Way/NE 75th, 5th Ave NE, 23rd/24th Ave E, Aurora Ave N, and SW Roxbury St. Leading Pedestrian Intervals (LPIs) were installed at 40 locations (LPIs give pedestrians the "walk" signal before drivers get the green light, improving visibility). The City of Seattle also expanded right/left turn on red restrictions in downtown locations, extended the 2<sup>nd</sup> Avenue protected bike lane (from Pike to Denny), and completed design on the Burke Gilman Trail Missing Link.

The 2019 Vision Zero Action Plan update identified that the City's budget allocated \$20 million toward the Vision Zero program in the 2020 budget, which would be applied through expanded capital infrastructure projects, enhanced enforcement efforts, and safety education programs. Specifically, SDOT will implement \$2 million in spot safety and traffic calming projects to be delivered along the Aurora Avenue North corridor over the following two years. This corridor

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<sup>8</sup> <http://www.seattle.gov/transportation/pedMasterPlan.htm>

<sup>9</sup> <http://www.seattle.gov/transportation/bikemaster.htm>

was identified as data analysis revealed that seven people, five of which whom were pedestrians, were killed in fatal collisions along this corridor.

## H. Roles and Responsibilities

SDOT has active relationships with the following state and local governance organizations:

- Washington State Department of Transportation (WSDOT) has worked with SDOT to lower speeds on shared streets to achieve Seattle’s Vision Zero reduced speed limits goal,
- Washington State Patrol provides enforcement, including commercial vehicle enforcement to ensure freight operators move safely through the city,
- The Seattle Mayor’s Office assists in matters of budgeting and policy (for example, a new policy for speed limit setting was established by the Mayor), and
- the Seattle Police Department provides collaboration for crash data sharing and enforcement efforts.

In the 2019 Progress Report, Seattle committed to creating a “major crash review task force” to review crash details and understand contributing factors to the crash. This task force will be comprised of both local and regional members, including the Mayor’s Office, Seattle Police Department, Seattle Fire Department, the City Attorney’s Office, Public Health of Seattle and King Counties, WSDOT, members of modal advisory boards, and other potential partners. SDOT’s external Vision Zero partnerships include Seattle Neighborhood Greenways, Seattle Public Schools, AARP Seattle, KOMO News, Cascade Bicycle Club, Commute Seattle, King County, transportation networking companies (such as Lyft and Uber), and Mothers Against Drunk Driving (MADD). Specific outcomes have included the 2016/2017 collaboration between SDOT, Cascade Bicycle Club, and Seattle Public Schools to bring walking and biking education to every 3rd, 4th, and 5th grade class in Seattle. LYFT and MADD as well as Uber had partnered with Seattle to aid in discouraging impaired driving via discounts to riders in the City’s busiest nightlife neighborhoods.

## VI. San Francisco, CA

### A. Elements from the Action Plan

The City and County of San Francisco adopted Vision Zero as a policy in 2014 and plans to eliminate traffic related fatalities by 2024.

Vision Zero SF is the road safety policy for the City of San Francisco. San Francisco identifies initiatives and actions in Vision Zero Action Strategy documents. The Vision Zero Action Strategy was developed by the City and County of San Francisco, the San Francisco Municipal Transportation Agency, the Department of Public Health, with leadership from the Mayor’s office.

Since adoption in 2014, Vision Zero San Francisco has been through three Action Planning cycles, with the latest being the Vision Zero SF 2019 Action Strategy.

The 2019 Action Strategy focuses on three key areas towards advancement of Vision Zero San Francisco’s goal:

1. Strategic Actions, which are specific traffic system improvements prioritizing the high injury network and in Communities of Concern;
2. Transformative Policies, which promote four specific legislative needs to promote specific actions; and
3. Complementary Goals, which proposes use of existing city policies that align with the Vision Zero goal.

The 2019 Action Strategy includes the following noteworthy elements:

- a strong media and outreach program, which emphasizes underserved and vulnerable communities.
- emphasis not only on safe non-vehicular travel, but a mode shift to non-passenger vehicle only modes.
- specific goals attached to timed implementation measures and responsible parties.
- acknowledgement of up and coming technologies, including autonomous vehicles and e-scooters, in addition to Transportation Network Companies (TNCs). (For example, the Action Strategy includes a goal to develop and release an “Automated Vehicle Technology Vision Policy Playbook” for autonomous vehicles for reference at federal, state and local levels).
- focus on improving safety features and evaluation capabilities for City fleet vehicles.

The 2019 Action Strategy organized goals into four categories: Safe Streets, Safe People, Safe Vehicles, and Data Systems:

- Safe Streets focuses on design and engineering actions and programs promoting sustainable modes of transportation, such as increasing geometric changes, increasing protected bicycle facilities, wider sidewalks, providing transit only lanes, traffic calming elements, installing Pedestrian Countdown signals, and responding to fatal collision locations with rapid-response engineering.
- Safe People includes actions and strategies that address the human elements contributing to traffic safety and encourage safe behavior through education campaigns, high visibility enforcement, and policy.
- Safe Vehicles looks at safety training, education and policies for automated vehicles, e-scooters, TNCs, and fleet vehicles.
- Data Systems looks to increase data accuracy through expanding data sources to include Emergency Medical Services (EMS) and possibly 911 information, as well as establish monitoring systems (Emerging Mobility Injury Monitoring System) for emerging mobility services, such as vehicle and e-scooter data in order to develop injury predictive models.<sup>10</sup>

## **B. Policies in Play**

San Francisco’s Vision Zero goals prioritize walking, biking and transit, while also reducing driving and vehicle miles traveled. These goals are in line with the City’s overall transportation goals and policies. For example, the City’s existing goals and policies that relate to Vision Zero include:

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<sup>10</sup>[https://www.sfdph.org/dph/files/EHSdocs/PHES/VisionZero/Emerging\\_Mobility\\_Injury\\_Monitoring\\_Methodology.pdf](https://www.sfdph.org/dph/files/EHSdocs/PHES/VisionZero/Emerging_Mobility_Injury_Monitoring_Methodology.pdf)

- The city will shift 80% of trips to sustainable travel choices by 2030;
- The San Francisco Municipal Transportation Agency (SFMTA) Transit First policy to prioritize public transit, bicycling and walking;
- San Francisco will reduce its greenhouse gas emissions by 80% from 1990 levels; and
- San Francisco will create 30,000 new housing units by 2020, including 50% for middle income households and 30% permanently affordable. Housing will be built closer to jobs, schools, and services, increasing the walking and biking trips.

The prioritization of these goals aligns well with the Vision Zero San Francisco program by promoting mode shift and providing safer conditions for vulnerable users.

Vision Zero San Francisco 2019 Action Strategy recommends four policies for Vision Zero San Francisco and state partners: automated enforcement, congestion pricing and reduction in vehicle miles traveled, reduced speed limits for urban areas, and local regulation of transportation network companies, including Lyft and UBER.

The first three policies were derived from the noted success of implementation in other locations.

- *Automated Enforcement*<sup>11</sup>: Washington D.C. had a 73 percent reduction in traffic fatalities with speed cameras and 34 percent decrease in traffic related injuries. (The National Transportation Safety Board recommended current laws be amended to authorize use of automated speed enforcement by state and local agencies.<sup>12</sup>
- *Pricing and Reducing Vehicle Miles Traveled*: London had a 40 percent reduction in the number of collisions city-wide after congestion charge implementation.<sup>13</sup>
- *Urban Speed Limit Setting*. Boston lowered speeds from 30 mph to 25 mph across the city resulting in a 29 percent reduction in episodes of excessive speeding. Twenty (20) mph speed limits and zones have been found to reduce injuries.<sup>14</sup>

The fourth policy will focus on designating passenger loading zones in high passenger pick-up/drop-off activity areas.

### C. Data Sources

San Francisco’s Vision Zero Injury Prevention Research (VZIPR) Collaborative is a collaboration between the San Francisco Department of Public Health’s Program on Health, Equity and Sustainability (SFDPH-PHES) and Zuckerberg San Francisco General Hospital and Trauma Center. VZIPR develops and uses data to inform research, strategies, and analysis for Vision Zero San Francisco.<sup>15</sup>

<sup>11</sup> <https://www.sfmta.com/projects-planning/projects/automated-speed-enforcement>

<sup>12</sup> <https://www.nts.gov/news/events/Documents/2017-DCA15SS002-BMG-Abstract.pdf>

<sup>13</sup> <http://www.sciencedirect.com/science/article/pii/S0047272715001929>

<sup>14</sup> <https://visionzeronetwork.org/cities-can-look-to-boston-iihs-for-inspiration-to-reduce-speed-limits/>

<sup>15</sup> <https://www.sfdph.org/dph/EH/PHES/PHES/TransportationandHealth.asp>

VZIPR uses a Transportation-related Injury Surveillance System (TISS), which links police, hospital, emergency response and other data to provide timely, accurate, and coordinated monitoring of transportation-related fatalities and injuries. San Francisco was the first city in the United States to update its Vision Zero High Injury Network in 2017 using this data. VZIPR uses TransBASESF.org, a regional database system, to inform transportation solutions using spatial data.

San Francisco publishes safety data in the form of a Traffic Fatality Monthly Report on the Vision Zero website<sup>16</sup>. The report is a collaborative effort between the City and County of San Francisco, San Francisco Department of Public Health (SFDPH), San Francisco Municipal Transportation Agency (SFMTA), and San Francisco Fire Department (SFPD). San Francisco also has an established Vision Zero Traffic Fatality Protocol.<sup>17</sup>

The Traffic Fatality Monthly Reports include a summary of annual traffic fatalities through the current month, as well as comparison to the numbers through the same month of previous years. The report also includes a summary of how crashes are distributed in different vulnerable communities, including Communities of Concern, senior communities, and on the high injury network. Specific information on locations and type of collisions resulting in fatalities are provided via the online interactive map, where data (numbers of people killed while walking, cycling, riding in a motor vehicle, while on a motorcycle, while driving) is updated through the end of the most current month. Two primary data sources are used to identify traffic fatalities: Office of the San Francisco Chief Medical Examiner's Motor Vehicle Monthly Death Report and the San Francisco Police Department Report on Fatal Traffic Collisions.

As mentioned above, a goal in the Data Systems section of the 2019 Action Strategy is to increase data accuracy by expanding data sources to include EMS, hospital, and possibly 911 information.

#### **D. Analysis Methodologies & Tools**

The Vision Zero High Injury Network ensures that Vision Zero projects support those most in need. Using the fatality and accident data, San Francisco has identified demographics and locations of the most vulnerable communities in order to determine prioritization needs and targeted groups. This includes seniors, people with disabilities, people experiencing homelessness and marginally housed residents, people of color, communities of concern (including low income residents, immigrants, and non-English speaking residents and seniors), and people walking, biking, and motorcycling.

The following interactive mapping tools are available on the Vision Zero SF website (<https://www.visionzerosf.org/maps-data/>):

- High Injury Network
- Traffic Fatalities Map
- TransBase: interactive analytical tool
- Seniors and People with Disabilities Pedestrian Injury Areas
- Project Updates (via interactive map)

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<sup>16</sup> <https://www.visionzerosf.org/maps-data/>

<sup>17</sup> [https://www.visionzerosf.org/wp-content/uploads/2019/11/Vision-Zero-Traffic-Fatality-Protocol\\_2019\\_6.0.pdf](https://www.visionzerosf.org/wp-content/uploads/2019/11/Vision-Zero-Traffic-Fatality-Protocol_2019_6.0.pdf)

Metrics for measuring progress are outlined in the 2019 Action Strategy and work toward the goal of zero traffic related fatalities by 2024. These include:

- Fatalities (number of people).
- Sustainable travel lane (transit-only lanes, protected bicycle facilities, and wider sidewalks) miles added, Citywide (distance in miles).
- Safety treatments installed on the High Injury Network (distance in miles).
- Percentage of safety treatments installed in Communities of Concern (CoC) (percentage of miles).
- Focus on the Five violation citations (percentage of citywide total violations that the top five causes of collisions).
- Vision Zero outreach (number of media impressions, number of people reached at events).
- Vision Zero street team events (number of events, percentage of events with translated materials and interpretation services).
- Youth and Senior programming (number of people reached, percentage of people reached in a language other than English).
- Public Health Grants for community engagement (number of grants).

## **E. Website and Multimedia Platforms**

San Francisco's Vision Zero website is organized with the following tabs to provide easy access to their content:

- Home
- About
- Safety in Action
- Get Involved
- Resources
- Stay Informed
- The Pledge

The home page provides messages corresponding to Vision Zero goals with links to news articles about their efforts in San Francisco. There is a section with a Twitter feed to highlight events supporting the Vision Zero mission. The website has a feature to select language in 12 options, which converts the entire Vision Zero website to the selection.

The About page describes the Vision Zero policy in San Francisco and why it is necessary for the community. The sub-tabs within the About section also include an action strategy, efforts towards equity, support page from public and private entities, and vision zero efforts in other cities.

The Safety in Action page outlines various approaches San Francisco will take to ensure safe traveling throughout the city. These approaches include engineering streets for safety, educating the public, enforcing traffic laws, evaluating and monitoring progress, and public policy initiatives to create change.

The Get Involved page informs members of the community on ways they can get involved with Vision Zero efforts. Members of the community can attend quarterly public meetings to provide

input held by the Vision Zero Taskforce which has over 40 members representing different communities within San Francisco chaired by the SFMTA and SFDPH. The Vision Zero Coalition, comprised of non-governmental organizations, offers opportunities for members of the community to get involved at events to advocate for Vision Zero policies and projects.

The Vision Zero's Resources page provides educational articles and news stories about efforts within the city. The Resources page also provides links to maps and data regarding Vision Zero that is open to the public.

People can sign up on the Stay Informed page using their email to receive the most up to date information on project milestones and events. People can also sign a pledge to demonstrate their dedication to the Vision Zero mission on the Pledge page.

## F. Engagement, Outreach, and Branding

San Francisco's Vision Zero program has a strong media and outreach element, which focuses on underserved and vulnerable communities. In 2018, over 250 million media impressions were made and over 15,000 people were reached at 52 community events. Events are listed on the Vision Zero Events page<sup>18</sup>. A snapshot of select events include:

- *Sunday Streets* – Come dance in the streets with Sunday Streets car-free route along The Western Addition's main corridors! Fillmore and sections of Fulton and Baker Streets will be open to pedestrians, cyclists, roller-skaters, toddlers, families, seniors and more on September 22.
- *Walk and Roll to School Day* – On October 2, 2019, thousands of kids at schools across San Francisco will walk, scoot, and bicycle to school as part of International Walk & Roll to School Day. From pre-k to high school, the event builds yearlong excitement around getting to school on foot, bicycle, or scooter. It also builds healthy habits!
- *District 6 Bicycle and Pedestrian Safety Open House* – Join the SFMTA and the Office of District 6 Supervisor Matt Haney for a District 6 bicycle and pedestrian street safety open house. At this open house, the public will have an opportunity to learn about the various street safety projects in the South of Market (SoMa) and Tenderloin neighborhoods. Come learn about the past, present, and future bicycle and pedestrian traffic safety work in District 6!
- *Vision Zero Action Strategy Coffee Chat / Tea Talk* – Vision Zero is the city's commitment to creating safe, more livable streets with the goal of eliminating all traffic fatalities and reducing severe injuries. The Vision Zero team wants to hear from you! Join us for a Coffee Chat / Tea Talk and share your ideas and priorities for safer streets in District 4! Chinese interpretations available.

The 2019 Action Strategy was developed from July 2018 to March 2019. Three workshops were held for community members and city staff. A one-day workshop held in summer 2018 and 11 community outreach events (coffee talks, July-September 2018) led to over 200 community members and staff contributing over 300 new ideas, which provided "significant input and ideas" that contributed to the 2019 Action Strategy.

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<sup>18</sup> [https://www.visionzerosf.org/events/list/?tribe\\_paged=1&tribe\\_event\\_display=past](https://www.visionzerosf.org/events/list/?tribe_paged=1&tribe_event_display=past)

## G. Funding and Implementation

The following funding and implementation information was included in a Vision Zero Program Update made on September 3, 2019<sup>19</sup>, led by the SFMTA and San Francisco Department of Public Health (SFDPH). Funding is organized by strategic action category listed below.

Safe Streets program and funding specific included:

- Install 8 miles annually of high-impact sustainable travel lanes
  - Annual investment: \$25 to \$50 million
  - Source of funds: 2014 Prop A GO Bond, SFCTA Prop K ½ cent sales tax; competitive funds from federal, state, and region: One Bay Area Grants, Active Transportation Planning, and New Starts
- Complete near-term improvements (signal timing and crossing markings) at all intersections on the High Injury Network
  - Annual investment: \$2 million
  - Source of funds: 2014 Prop B General Fund Set-Aside for Transportation, SFMTA Road Fund (Operating)
- Reduce project delivery timelines on 5 corridors in 2 years
  - Annual investment: \$6 million
  - Source of funds: SFCTA Prop K ½ cent sales tax; 2014 Prop B General Fund Set-Aside for Transportation
- Implement a permanent strategic closure for private vehicles on Market Street from 10th to Main Street in both directions to improve safety for sustainable transportation users
  - Investment: \$2 million
  - Source of funds: SFCTA Prop K ½ cent sales tax; 2014 Prop B General Fund Set-Aside for Transportation, 2014 Prop A GO Bond

Data Systems program and funding specifics included:

- Update High Injury Network in 2021 using Zuckerberg SFGH data
  - Investment: SFMTA funds a SFPDH Vision Zero Epidemiologist to conduct this work in partnership with SFDPH and Zuckerberg SF General Hospital staff.
  - Source of Funds: SFDPH and SFMTA Operating
- Issue an annual report on severe injuries utilizing Zuckerberg SF General Hospital and Trauma Center and police data
  - Investment: This work is led by an SFDPH Epidemiologist
  - Source of Funds: SFMTA Operating

Safe People program and funding specifics included:

- Launch an education program focused on changing driver behavior to reduce collisions resulting from left-turns
  - Investment: \$2 million over 2 years
  - Source of funds: Active Transportation Planning grants, 2016
- Facilitate 6 training opportunities for SF motorcycle riders in partnership with the San Francisco Police Department motorcycle training officers to encourage safe and informed riding

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<sup>19</sup> [https://www.sfmta.com/sites/default/files/reports-and-documents/2019/08/9-3-19\\_item\\_11\\_vision\\_zero\\_program\\_update\\_slide\\_presentation.pdf](https://www.sfmta.com/sites/default/files/reports-and-documents/2019/08/9-3-19_item_11_vision_zero_program_update_slide_presentation.pdf)

- Investment: \$4,00,000 over 3 years
- Source of funds: California Office of Traffic Safety Grant, 2016
- Through community grants and multi-lingual presentations, engage seniors, service providers, and community-based organizations on Vision Zero to build support for safer streets
  - Investment: \$270,000 annually
  - Source of funds: SFDPH General Fund
- Issue 50% of traffic citations for top five causes of collisions.
  - Source of funds: SFMTA and SFPD Operating

The Safe People category of the 2019 Action Strategy includes outreach and training programs for targeted users, for which 14 community grants were secured to perform 30 multilingual presentations to engage seniors, service providers, and community-based organizations. In addition, San Francisco identified the need for funding for external resources for training programs on bicycle laws and safety.

## H. Roles and Responsibilities

Vision Zero is a multi-department, citywide policy. There is one committee and one task force for the program. The Vision Zero Task Force provides input and recommendations to key Vision Zero policies and efforts. The Task Force is chaired by the SFMTA and the SFDPH. The Task Force has over 40 members that represent communities across the City. The Task Force is co-chaired by Chava Kronenberg (SFMTA) and Megan Wier (SFDPH). The Task Force holds quarterly public meetings, open to all. Meeting dates and times are posted on the program website.

The Vision Zero Coalition is comprised of nearly 40 community-based organizations with strong representation from communities within the City's high injury network. The coalition works with all stakeholders to help inform and advocate for the swift, complete and equitable implementation of Vision Zero policies and projects in order to end all traffic deaths and serious injuries in San Francisco by 2024. The Coalition meets at least quarterly. Coalition activities include developing an annual work plan, hosting media events, and releasing an annual progress dashboard.

The 2019 Action Strategy identifies the lead agency and time frames to work toward the goals nested in each of the four categories: Safe Streets, Safe People, Safe Vehicles, and Data Systems.

- Safe Streets: SFMTA has been identified as the lead agency for most actions under the Safe Streets category, which prioritizes improvements on the high injury network and speed reduction via design and engineering. The Department of Public Works is identified as the lead agency for actions involving construction coordination. San Francisco Planning, the planning department for the City of San Francisco, is the lead for review and approval of new developments to ensure they incorporate transportation safety measures.
- Safe People: This category targets human behavioral elements of transportation safety. SFMTA is the lead agency for actions including education campaigns and training programs for various user groups including TNCs, motorcyclists, and shared mobility devices (e.g., e-scooters and e-bikes users and companies). The

San Francisco Police Department (SFPD) is the lead agency for enforcement components, including high visibility education and enforcement campaigns. A high-visibility education and enforcement campaign focuses on reducing unsafe driving behaviors among drivers of passenger and commercial motor vehicles. The San Francisco Department of Public Health (SFDPH) is a lead agency for goals including education and enforcement campaigns on cannabis and safe driving, presentations to multilingual and senior communities, and ensuring that the City's response to crashes includes support to families of victims of traffic fatalities.

- **Safe Vehicles:** SFMTA and the City's Administrative Office is the lead on safety training, education, and policies for automated vehicles, e-scooters, TNCs, and fleet vehicles. **Data Systems:** SFDPH is the lead on expanding crash data sources to include information from EMS, hospitals, and possibly 911/EMS response. SFPD and SFCTA are the lead on proving supporting crash and speed data for analysis and predictive modeling.
- **Data Systems:** SFDPH is the lead on expanding crash data sources to include information from EMS, hospitals, and 911/EMS response. SFPD and SFCTA are the lead on proving supporting crash and speed data for analysis and predictive modeling.

## VII. Findings and Key Takeaways

This review of peer agencies allowed the project team to come up with a set of findings and key takeaways for reference in the development of Arlington County's first Vision Zero Action Plan.

Key findings include:

- **Seek a Balanced and Strategic Approach:** Creating an Action Plan that balances descriptive and prescriptive strategies.
- **Manage Expectations through Open, Transparent, and Meaningful Stakeholder Engagement:** Striking the correct balance between visionary objectives and practicable actions to build and maintain support.
- **Provide Leadership with a Public, High-Level, and Ongoing Commitment:** Ensuring support and commitments from County Board or County Manager on Vision Zero.
- **Adopt Equity-Focused Analysis and Programs:** Focusing on equity helps align and leverage resources, providing a shared sense of responsibility and ownership.
- **Use Data to Guide Plan Elements:** Reviewing available data will help in the development of goals, objectives, actions, and performance measures.
- **Report Progress on Specific Actions:** Using annual progress reports and ongoing updates to reflect progress made—not only toward the Action Plan's goals but also— toward the specific actions taken to achieve the goals. Progress on some goals may take years, so reporting progress on actions will illustrate progress that might not appear in the performance metrics.
- **Develop Vision Zero Design Guides, Manuals, and Policies:** Establishing institutional guidance materials as part of the Vision Zero program will build and maintain internal support and promote streamlined project delivery.
- **Monitor Data Quality:** Obtaining data from the most accurate and timely sources available will lead to credible, equitable transportation system improvements.

- **View Public Health as a Core Element in Vision Zero:** Incorporating a public health perspective in Vision Zero broadens the coalition. This more systemic lens strengthens alliances, providing wider resources for staffing, data analysis, education/outreach and implementation.

These key themes, supplemented with best practices and resources from the Vision Zero network, will inform development of the Arlington County Vision Zero Action Plan. The sections below describe each theme with examples from the peer agencies.

## A. Seek a Balanced and Strategic Approach

### *Creating an Action Plan that balances descriptive and prescriptive strategies.*

The plans reviewed and action items within each plan include elements that are either more “descriptive” or “prescriptive”:

- The “descriptive approach” sets forth strategies are outlined in more broad terms rather than specificity. A descriptive approach allows for flexibility and carries an umbrella approach to implementing safety strategies that can be refined in future as more information becomes available and lessons are learned. Taking a descriptive approach supports collaborative decision-making in implementation (i.e., stakeholder input on how to achieve), allows for more general data trend analysis, and allows for broader definitions of success. Descriptive approaches, however, may be perceived as vague, non-committal, or not aggressive enough.
- The “prescriptive approach” sets forth strategies that are more specific as to the details of each action item. A prescriptive approach provides means and measures for implementation and allows for straightforward measures of success. Prescriptive approaches can be less adaptable, and success may rely on completion of an entire exact action rather than looking at progress toward its completion.

The Richmond, VA plan is perhaps the most prescriptive, particularly in the implementation of the plan as noted in the interview. The Cambridge, MA plan also has some highly prescriptive elements, particularly as it relates to the time horizon for their goals. The San Francisco, CA and Seattle, WA plans are more descriptive in nature. This descriptive nature allows for more frequent updates to action plans and strategies. These two plans may have been able to be more descriptive in nature due to the duration of Vision Zero planning in the two cities. Seattle, WA first adopted its Vision Zero policy in 2000. San Francisco, CA adopted its first action plan in 2015. Since 2015, San Francisco has released two updates, the first in 2017 and the second in 2019. It was noted in the interview with San Francisco, CA that the most recent version is more descriptive and transformative due to work completed during previous phases.

Based on the peer review and the phone interviews prescriptive plans take fewer resources to implement. However, the ability to build consensus to transformative policies in prescriptive plans seems limited. The more descriptive plans require more resources to implement as they are actively managed. This active management does allow for quicker adaptation which seems to be helpful in building a strong coalition needed to pursue transformative policies.

Arlington County will want to find the right balance based on its unique context to ensure success. The balance between descriptive and prescriptive can apply to the development of

plan and action reports, frequency of progress reports, specificity of goals, objectives and action items, time horizons, and length of plan. This balance may also shift as the plan is refined and implemented during updates and progress reports.

## **B. Manage Expectations through Open, Transparent, and Meaningful Stakeholder Engagement**

*Striking the correct balance between visionary objectives and practicable actions to build and maintain support.*

Managing expectations and communicating clearly and accurately are critical to building momentum, maintaining support, and changing behavior. Lessons learned from the Cambridge, MA plan note the importance of clear, explicit communication related to time horizons for achieving goals. Without clear expectations in its initial plan, Cambridge, MA pivoted to incorporate key issues and refinements in the first progress report update. While aggressive goals set forth in the plan helped expedite shifts in internal culture, it also set expectations unrealistically high. Support for the plan waned as the plan was perceived as not being successful in reaching its established goals. Interviewees in Denver, CO and San Francisco, CA specifically mentioned the need not to raise false hopes.

## **C. Provide Leadership with a Public, High-Level, and Ongoing Commitment**

*Ensuring support and commitments from County Board or County Manager on Vision Zero.*

A high degree of support from local elected officials, and the Mayor's office is a common theme among plans. Of the five plans reviewed as part of the peer review, only the Cambridge, MA plan did not begin with a letter from the Mayor. In the case of Cambridge, MA, the letter came from the City Manager.

The support of local elected officials and/or managers appears critical to gaining support for the plan and driving the culture change needed within agencies to oversee and implement the plan. The interview with Seattle, WA provides information on how to proceed if support from elected officials is initially low. In Seattle, WA city leadership initially had a very car-centric mindset. Through education and communication with staff, city leaders became more invested in the goals of the Vision Zero plan.

Arlington County staff should seek support and commitments from County Board or the County Manager on Vision Zero. Failure to do so could leave the plan insufficiently supported by decision-makers and thus difficult to implement.

## **D. Adopt Equity-Focused Analysis and Programs**

*Focusing on equity helps align and leverage resources, providing a shared sense of responsibility and ownership.*

Low-income communities and communities of color are affected disproportionately by traffic-related injuries and fatalities in the United States. It is important to identify traditionally under-

served communities and vulnerable populations during the development of the Vision Zero Plan.

Data showing communities in most need of transportation investment with facilities that have the highest injury and fatality rates can be used to prioritize engagement and investments. Various methods can be used to perform this analysis. Denver, CO uses a very robust process for identifying Communities of Concern (CoC) and a High Injury Network (HIN). Others, like Seattle, WA and San Francisco, CA have robust yet shorter processes. Richmond, VA, in contrast, uses an existing metric to determine at-risk communities. There appears to be diminishing returns for some of the more robust options for identifying at-risk groups or a high-injury network. The result of Richmond, VA's analysis did not seem materially more beneficial than the density analysis conducted by Cambridge, MA or Richmond, VA.

A focus on equity appears critical for developing a sustainable plan that is supported by the community. Plans with equity at the forefront, like those in Denver, CO, and San Francisco, CA, have strong community support with seemingly positive progress in working toward plan goals.

Focusing on equity helps align and leverage resources, providing a shared sense of responsibility and ownership. Collaboration and equitable representation across city agencies, partners, community leaders, and citizens supports successful development and implementation of Vision Zero elements, supporting the delivery of a safe, multi-modal transportation network for all.

## **E. Use Data to Guide Plan Elements**

*Reviewing available data will help in the development of goals, objectives, actions, and performance measures.*

There will be unique elements of any plan that will only come to light through data analysis. Perhaps the most striking example of this is the focus on delivery vehicles in the Cambridge, MA plan. No other plan includes a strong focus on these vehicle types. The Cambridge, MA plan went so far as to advocate for side guards on delivery vehicles which reduce the likelihood that persons struck by said vehicles will be swept under the wheels. Other plans mention freight or delivery vehicles, but not nearly to the extent that the Cambridge, MA plan did. It was only through the thorough review of data that this issue was identified.

Reviewing available data will help identify existing issues and needs unique to the area. This information can be used in the development of goals, objectives, actions, and performance measures.

## **F. Report Progress on Specific Actions**

*Using annual progress reports and ongoing updates to reflect progress made—not only toward the Action Plan's goals but also— toward the specific actions taken to achieve the goals. Progress on some goals may take years, so reporting progress on actions will illustrate progress that might not appear in the performance metrics.*

It is important to report progress made toward goals as well as specific actions taken to achieve goals in annual progress reports. Annual variations can occur regarding traffic-related fatalities

and serious injury crashes. This can give the perception of lost ground or ineffective actions during a reporting period. Reporting on actions under taken as well as progress toward a goal can help alleviate concerns related to progress slipping over a short period of time. Reporting on actions can also help to build and maintain support. This was mentioned in the interview with both the Richmond, VA staff and the Seattle, WA staff.

## **G. Develop Vision Zero Design Guides, Manuals, and Policies**

*Establishing institutional guidance materials as part of the Vision Zero program will build and maintain internal support and promote streamlined project delivery.*

Development of design guides, manuals, and policies in conjunction with Arlington’s Vision Zero program can be an effective tool to build internal support for Vision Zero policy, change culture, and streamline implementation. Design guides provide a framework for various agencies and departments to collaborate on developing best practices and implementation measures. This forum enhances multidisciplinary communication leading to shared ownership for the plan. A design guide also allows for more rapid implementation as many decisions related to implementation are made in advance. This allows for quick action when implementation tasks arise.

## **H. Monitor Data Quality**

*Obtaining data from the most accurate and timely sources available will lead to credible, equitable transportation system improvements.*

Quick and accurate data reporting is key to implementation. Both San Francisco, CA and Seattle, WA have identified means for obtaining collision data as soon as possible, allowing for reporting in near real time. San Francisco, CA has augmented collision data from police reports with data from hospitals and Emergency Management Services (EMS). It was noted in the interview that this was particularly feasible because there is only one Level 1 trauma center in San Francisco City/County.

Highly accurate data provides a more complete and accurate accounting of crashes, their causes, and their impacts. One item to note is that more accurate reporting can lead to an uptick in reported traffic-related fatalities and serious injuries. This is because as more emphasis is given to obtaining the most complete and accurate information fewer items will slip through the cracks. This can result in the appearance of more traffic-related fatalities and serious injuries. It is important be prepared for this possibility and manage expectations on this topic.

## **I. View Public Health as a Core Element in Vision Zero**

*Incorporating a public health perspective in Vision Zero broadens the coalition. This more systemic lens strengthens alliances, providing wider resources for staffing, data analysis, education/outreach and implementation.*

Some areas, particularly Denver, CO and San Francisco, CA, have approached Vision Zero from a public health perspective. This included working hand in hand with the respective departments of health on plan development, having a public health focus on some education

materials, and linking outcomes to behaviors. Seattle, WA viewed some elements through a public health lens, although this was not expressed during the phone interview at the same level as the other two cities. This approach differs from guidance given from Richmond, VA, which focuses solely on fatal and high injury collisions.

Public health considerations are essential elements in transportation planning. Practitioners are increasingly linking gaps in transportation facilities to public health concerns, such as obesity and air quality.



# Appendix: Peer Interviews

The project team interviewed staff from the five peer agencies in January 2020 to gather information on lessons learned during the development, implementation, and evaluation of Vision Zero Action Plans. This Appendix summarizes the key themes identified through the interview exercise, as well as the questions, responses, and summaries of each peer interview.

## Key Themes

The following key themes were identified during the peer interviews. The themes are organized under the *Core Elements for Vision Zero Communities* (Vision Zero Network, 2018).

### Leadership and Commitment

- **Public, High-Level and Ongoing Commitment.** Leadership is essential to the success of Vision Zero. Leadership roles include setting the tone and demonstrating action related to culture, commitment, policies, practices, staffing, schedules, process, funding, and collaboration. Leaders may include the Mayor, City Manager, Council, key elected officials, and leaders in various agencies and departments, including transportation, public health, and police.
- **Authentic Engagement.** Engage the community through open, meaningful, transparent, accessible, and equitable outreach. Prioritize support for communities most affected by traffic crashes, including communities traditionally underserved by safety efforts. Branding provides an identifiable, consistent message and builds momentum for change. Set and communicate clear expectations for the process, goals, actions, implementation, and monitoring. Provide ongoing updates on plan efforts and achievements. Make data accessible and reader-friendly for all.
- **Strategic Planning.** Develop the Vision Zero Action Plan as a framework to guide improvements. Include explicit goals, measurable strategies, clear timelines, roles/responsibilities, and monitoring protocol. Identify and resource a champion for the plan. Provide commitments and actions to prevent unintended consequences. Update the plan regularly to reflect changes in policy, technology, data, funding, community interests, and environmental, social, and political climates.
- **Project Delivery.** Advance policies and actions through legislative changes, secured funding, and project prioritization. Invest in multi-modal facilities to provide safe, interconnected networks. Focus on safety benefits through education and awareness. Partner to leverage funding and resources.

### Safe Roadways and Safe Speeds

- **Complete Streets for All.** Integrate multi-modal complete street design to encourage safe travel for all modes. Prioritize safety improvements for vulnerable road users, including people walking and biking.
- **Context-Appropriate Speeds.** Set travel speeds for specific roadway contexts to protect all users. Be proactive based on risk factors. Implement infrastructure changes to prioritize safety over speed. Change policies to align with safety goals. Raise awareness about speed as a primary factor in crashes.

## **Data-Driven Approach, Transparency, and Accountability**

- **Equity-Focused Analysis and Programs.** Conduct outreach to engage minority, low-income, limited English speaking populations, seniors, children, and community members of varying abilities. Prioritize investments in traditionally underserved communities. Commit to policies and actions that prevent efforts from increasing disproportionate impacts.
- **Proactive, Systemic Planning.** Collaborate within and across agencies. Use data to understand patterns and trends to support a systemic approach to Vision Zero initiatives. Identify risk factors and mitigate for potential crashes and crash severity. Consider social and environmental factors, including access and public health, to understand connections and develop strategies.
- **Responsive, Hot Spot Planning.** Map locations of serious and fatal crashes to guide actions and funding. Provide real-time data input, coordination and analysis to ensure quality data.
- **Comprehensive Evaluation and Adjustments.** Perform routine evaluations. Analyze data prior to and following improvements to measure effectiveness. Share results with the public and decision-makers to inform priorities and funding.

## **Interview with City of Cambridge (Cambridge, MA)**

Interview Date: January 13, 2020

### **What lessons learned can you share for your Vision Zero Plan development and implementation?**

- Cambridge's Vision Zero Action Plan was developed internally.
- The plan was developed at the staff level and obtained approval from leadership.
- The collaborative process involved staff across city disciplines, which led to multidisciplinary team support.
- The City-led plan included an action plan, providing a sustainable framework which has endured.
- Plan priorities should include speed, larger vehicles, and a reduced speed zone.
- Cambridge's Vision Zero Action Plan included implementation of a 20-mph speed zone beyond the squares to public access streets.
- An ordinance for truck sideguards has taken longer than expected.
- The reduction of speeds has brought visibility to the plan.
- Speed limit changes have also provided an opportunity for public education/awareness around safety.

### **What do you see as the largest impediment to implementing the plan or reaching your goals?**

- Vision Zero should be part of the fabric of the city, changing culture.
- Public perception that the process is moving slow can be a barrier.
- Some improvements can move quicker than a typical capital project. This public voiced concern because the process varied from a typical capital project delivery process and they were not used to this process or the more rapid timeframe for implementation.
- Goal metrics should be set in the beginning to evaluate the success of the program.

- Performance measures should be developed for all actions and not rely solely on typical measures, such as fatalities.
- While Vision Zero may lower fatalities, Vision Zero may also result in more people adopting bicycling as a form of transportation. This may affect the number of fatalities.

**Are there any lessons you learned from looking at other peer cities?**

- There are not a lot of peer studies available.
- Peer studies being viewed include Los Angeles, San Francisco, and New York.

**Were there any particularly effective or ineffective engagement strategies utilized during your process or implementation?**

- Public engagement techniques, such as one-on-one tabling exercises, safety feedback maps, and a robust website are being implemented.
- Boston, NY, and DC use safety feedback maps. Cambridge is interested in pursuing use of the maps on their website.
- Speed zones are effective.

**Did you conduct any branding for your plan and, if so, do you have any lessons you learned you can share?**

- Hiring a graphic design firm for a logo, color scheme, and branding was an inexpensive way to assist partners with working across multiple departments.
- Branding was used by partners in the development of materials, providing consistent messaging.

**Is there a takeaway from the process that you want to make sure our client in Arlington knows before they embark on developing a plan?**

- A focus on speed and large vehicles is key.
- It is important to develop SMART (Specific, Measurable, Attainable, Relevant, Time-bound) and reasonable goals.
- The county should acknowledge and be explicit on which goals are stretch goals to effectively manage public expectations.
- The plan can be an opportunity for cultural change.
- Arlington is well positioned as they have been experience planning multi-modal facilities with a focus on safety.
- Items included in the plan need to be reasonable.

**Interview with City of Richmond (Richmond, VA)**

Interview Date: January 15, 2020

**How did you coordinate with the Virginia Department of Transportation (VDOT) on the development and implementation of your Vision Zero plan? Are there any key lessons learned you can share?**

- Invitations to participate were sent to VDOT and over 100 groups throughout the region, including the CDC in Atlanta, Georgia.
- VDOT safety department participated in the planning.



- The City continues to collaborate with VDOT on specific sections of the plan.
- The City of Richmond organized a Richmond regional task force to support collaboration.

**What, if any, legislative hurdles did you have to overcome? What, if any, legislative situations were you able to take advantage of?**

- The Vision Zero plan identifies the most impactful legislative recommendations (hand-held ban, photo speed enforcement, and primary seat belt law).
- The Vision Zero task force should include all departments that report to the Chief Administration Officer.
- The Safe and Healthy Streets Commission advises Richmond city council on funding and legislative priorities.
- The Safe and Healthy Streets Commission's recent recommendations related to Vision Zero include:
  - adoption of a local hand-held ban for motorists,
  - improve open container laws,
  - adoption of primary seatbelt law
  - hand-held speed monitoring and speed automated enforcement legislation
  - advocating for not raising the reckless speed limit to 85 mph.

**Were there any particularly effective or ineffective engagement strategies utilized during your process or implementation?**

- The Safe and Healthy Streets Commission owns and monitors the Vision Zero plan and oversees public involvement.
- The Vision Zero planning timeline was set by the mayor. The plan was completed in four months.

**Did you conduct any branding for your plan and, if so, do you have any lessons learned you can share?**

- An employee developed a logo.
- Virginia Commonwealth University (VCU) supported branding as a university project, which reduced costs.

**Is there a takeaway from the process that you want to make sure our client in Arlington knows before they embark on developing a plan?**

- Recommendations:
  - Obtain a statement from a high-level elected official, providing support for Vision Zero.
  - Conduct a quarterly meeting to update the plan's goals and objectives
  - Maintain accurate progress records.
  - Report on actions and achievements as well as measure progress toward a goal.
- Reporting less allows time for a systemic approach, focusing on problems rather than solely elected official concerns.
- Low overhead is recommended to prioritize construction improvements.
- It is important to be highly data driven.
- Maximize limited funding to focus on Vision Zero related improvements.

- In Richmond, half of all K/A (high injury/fatality) collisions are belted and another 20% are unbelted persons. A focus on K/A crashes is advised as well as a mental health component.
- Make mode shift a separate category.
- Omit property-damage only (PDO) and collisions (C) in the analysis.
- Evaluate the high risk of impaired driving.

## **Interview with City of Denver (Denver, Co) – Part 1**

Interview Date: January 16, 2020

### **Can you provide some insight in to the thinking that led to some of your more innovative portions of the Vision Zero Program?**

- The interviewee was hired after plan was developed and is responsible for the implementation.
- The success of Denver’s plan came from a place of leadership at the highest level. The mayor’s office was highly involved. Advocates played a big role.
- Denver is not afraid of identifying bold statements and targets.
- There is a need for leadership and advocates.
- The oversight from the Mayor’s office was instrumental in getting some of the directors on board. It helped bridge the gap between visioning and realistic goals. Leadership supported robust goals aimed at change.
- Goals were developed with leadership in mind, such as the city council. The city council supported increasing goals and vision. Without aspirational goals, you cut the plan short.
- A very passionate and involved advocacy group played an integral part in plan development. There was initially a champion of the plan who led the development, but this person has since moved on.
- Vision Zero is broader than a public works or typical planning project. Approaching it as a public health epidemic brings everyone to the table.

### **What successes have you seen to date and what do you think are the reasons for those successes?**

- Have there been any facets that are proving to be less successful than hoped?
- Ensure staff resources are adequate for implementation and monitoring.
- The executive director is a big supporter and serves as the Vice President of the National Association of City Transportation Officials (NACTO). The executive director would like to make a big impact within a quick turnaround time. The executive director:
  - Hosts a Vision Zero meeting every morning at 8 am which has resulted in a trickle-down leadership effect.
  - Ensures that there is an efficient work flow process so that everyone knows their roles and responsibilities.
  - Identifies phase durations and phase leads.
- The organization has created the support and structure to implement the plan while working with existing resources to improve the culture of safety with city staff.

- The city has noticed a reduction of speed on five corridors through tracking on a daily basis.

**What can you share with us regarding your analysis efforts? What’s working? What could work better? How did you end up choosing the analysis methodology that you chose?**

- The analysis part of the project was a heavy lift which was aided by having a strong working relationship with the police department to ensure that data is trustworthy and not misused.
- The analysis is almost in real time. Data is uploaded within a day directly from the police department. Some data fields are not there initially, such as if there is a pending investigation.
- There are either weekly or bi-weekly follow up meetings with the police department to discuss data and fill in missing gaps.
- Developing a rapid response team for serious injuries and fatalities.
- Vision Zero is promoting trust and relationships between the police department and the engineering division. This helps develop advocates for implementation. Advocates gain better understanding of the process, which leads to better support and a desire for education.
- The goal is for advocates to become partners in the process.
- The process has been slower than desired.

**Were there any particularly effective or ineffective engagement strategies utilized during your process or implementation?**

- An involved health department, police department, Colorado public health, hospitals, and hosting working group meetings every month helped with engagement strategies.
- The city initiated meetings during implementation process; however, it resembled a city report out and not a working meeting.
- The team has shifted to quarterly goal setting based on team needs. The subject matter experts attend based on the agenda.
- Advocates cascade message. Advocates with the city have supported world day or remembrance.
- Many of the advocates are compensated either by the local groups or through the City. This may be unique to the area. The advocacy community in Denver is fairly robust and able to hire some staff or take advantage of City funds when available.

**Do you view your plan as effective and why or why not?**

- The plan is viewed as effective, but still a work in progress.

**Are there any characteristics of the area, say the density or transit options, that you think aided in the implementation of the plan or hindered the plan?**

- Most of the plan is believed to be transferable.
- Density and transit are not critical factors to the plan.
- Denver is similar to Louisville where speed limits are critical.
- There is a need for bicycle and pedestrian infrastructure.
- Speed increases severity and frequency of collisions.



**Is there a takeaway from the process that you want to make sure our client in Arlington knows before they embark on developing a plan?**

- Top-level support is needed. A firm commitment is needed to be a Vision Zero city.
- Vision Zero is not a slogan but rather a core principle.
- The plan should focus on minimizing impacts of collisions.
- Education is perhaps the least effective strategy but needs remembered in the process.
- A focus on design is critical with the understanding that all traffic deaths are preventable.
- Vision Zero can be described as a public health epidemic.
- There needs to be a point person to implement the plan across the agencies and measure effectiveness of programs and policies.
- Showing more than just collisions supports behavior change, such as pedestrian crossing at better locations.
- Pre and post data are a must with evaluations using outcomes and process.
- Telematics in city vehicles is a great data source.

**Interview with City of Denver (Denver, Co) – Part 2**

Interview Date: January 20, 2020

**Can you provide some insight in to the thinking that led to some of your more innovative portions of the Vision Zero Program?**

- Some streets along the periphery are split down the centerline with neighboring jurisdictions. This requires a lot of additional coordination.
- State highways are maintained by Colorado DOT which translates to very little autonomy regarding speed limits. Speed limit reduction is difficult.
- It is a bit too early to tell effectiveness and crash data needs to accumulate to verify.
- The city is assessing early indicators.
- Cameras are being used to understand speeds for turning movements where bump outs have been built. This will determine effectiveness.
- Evaluating Communities of Concern with the High Incident Network (HIN) is important for the program.
- Improved mapping would help ensure correct locations are shown.
- Gentrification is changing development patterns.

**What successes have you seen to date and what do you think are the reasons for those successes? Have there been any facets that are proving to be less successful than hoped?**

- There are a few local success stories that are not showing up in the big picture already.
- There have been changes with signal timings on a major corridor to always call side streets and pedestrian phases, coupled with police enforcement. This manages speeds a bit better and makes pedestrian crossing safer because gaps are more regular.
- Fatal collisions have fallen.
- Overall there has been a 30% reduction in collisions.
- There is not enough data yet to know effectiveness.

- Denver inputs collision information into a database. Information is available immediately for real-time data analysis.

**What can you share with us regarding your analysis efforts? What’s working? What could work better? How did you end up choosing the analysis methodology that you chose?**

- Geolocating is currently the biggest hurdle. Many collisions were initially geolocated in the police station parking lots. Through education the information is getting better as it is being taken at the appropriate time.
- Collision analysis previously relied on state data, which is sometimes delayed.
- The state works to improve the data attributes at the expense of timeliness.
- The use of video speed review is helpful with obtaining vehicle speeds of movements, particularly across crosswalks, as well as evaluating near misses with cameras.
- If we reduce near misses, then we should reduce collisions.
- Brisk Analytics is also reviewing near misses.

**Were there any particularly effective or ineffective engagement strategies utilized during your process or implementation?**

- The action plan was developed within a \$200k budget with an additional \$50k supplement toward the end of the process.
- The limited budget affected the money spent on the engagement process.
- Public health used a tool that allows respondents to drop a pin on places that both perform well and do not perform well. Pins were followed up with further questions. A comparison was completed using the pin map versus collision data to evaluate perception versus reality. Perception was predominantly close to reality.
- Electronic surveys mean fewer boots on the ground.
- Consider: How do you engage folks who are not engaged already with the government or who lack electronic means of communications? How do you find the issues impacting these communities?
- There has been a hiatus with engagement during the past 18 months due to a re-organization.
- The city is now trying to align with the work being done by the National Highway Transportation Safety Administration (NHTSA).
- The team will be attending pop-up events.
- During construction, cones or hay-bales help to visualize what a treatment would look like prior to construction.
- Make sure what you’re testing is feasible long-term.
- Do not plant a lot of false hopes.

**Do you view your plan as effective and why or why not?**

- Currently, the plan seems to be effective. However, it is too early to fully evaluate due to lack of data.

**Are there any characteristics of the area, say the density or transit options, that you think aided in the implementation of the plan or hindered the plan?**

- Joint jurisdiction provides challenges.

- Advocates were an important part of the plan development process (Bike and pedestrian advocates). Advocates attended meetings, provided input, and helped spread the word.
- Advocates can speak with and influence council in a way that staff cannot.

**Is there a takeaway from the process that you want to make sure our client in Arlington knows before they embark on developing a plan?**

- The level of specificity in the action plan has been helpful. Plan called for X intersections and Y corridors per year - this has helped keep momentum going.
- Need specific, discrete, and measurable goals to hold everyone accountable.
- Specific goals and specific actions are very critical.
- Recommend an "Action Plan" as opposed to "Implementation Plan." Identify actions to be managed, monitored, and refined.
- There are some elements that are hard to progress, such as elements requiring legislative action (e.g., primary seat belt law).
- The Denver plan is a 5-year plan. It will be a living document (Continuous improvement).
- Recommendations include:
  - Publish collision data now.
  - Evaluate whether the agency can tap into back end of law enforcement database to get real time data.
  - Not having to wait for collision data to be scrubbed by police and sent back allows others to analyze data and draw conclusions.
  - Address coding of collisions for potential improvements. (The city is trying to find leading indicators to verify the effectiveness before years of collision data is available.)

**Interview with City of Seattle - Seattle Department of Transportation**

Interview Date: January 17, 2020

**Can you provide some insight in to the thinking that led to some of your more innovative portions of the Vision Zero Program?**

- There was recently a two-page update indicating that last year was bad for collisions and fatalities in Seattle which prompted a proactive approach.
- The culture is transitioning from a reactive response to safety to a proactive strategy.
- Half of the workload is reactionary, and half is proactive.
- A reactionary approach can be effective, but it typically does not completely solve problems.
- Being proactive based on risk factors has led to support for implementing leading pedestrian intervals (LPI) citywide.
- The city updates 10% of signals every year to become LPI signals.
- The next step is a city-wide speed limit reduction for streets that are not 25 MPH.
- The goal is to have the number of LPI signals up from 80% to 90% in the next couple of years.
- Speed limit reduction is seen as a fast high-impact strategy.



- Focus on near-term, high impact.
- The Washington State Department of Transportation does not have to approve a speed limit reduction, which allows the speed limit to go below a minimum of 35 MPH. This jurisdictional oversight makes it easier from a legislative standpoint to affect change.

**What successes have you seen to date and what do you think are the reasons for those successes? Have there been any facets that are proving to be less successful than hoped?**

- The City has seen a 30 to 50% reduction in all collisions.
- The city has received positive feedback for a lower speed limit. There may be some pushback as it is more fully rolled out.

**Were there any particularly effective or ineffective engagement strategies utilized during your process or implementation?**

- Seattle DOT has a large communication team.
- The message from the public is that Seattle DOT has over messaged.
- Recommendations for public engagement:
  - Use a yard sign program with safety messages.
  - Distribute flyers/materials and place in community centers and libraries.
  - Use a website to reach people.
  - Conduct progress meetings.
  - Establish a Pedestrian and Bicycle Advisory Board.
  - Provide information to neighborhood groups to help create awareness of program.

**Do you view your plan as effective? Why or why not?**

- Plans are effective as a tool and good resources to summarize initiatives.
- Plans become less effective over time. Updates are important to refine plan goals and actions.
- Plans help with building momentum. There is, however, evidence of some diminishing rate of return.
- Creating an understanding of the safety aspects of improvements is challenging.

**Are there any characteristics of the area, say the density or transit options, that you think aided in the implementation of the plan or hindered the plan?**

- The Seattle Vision Zero plan is scalable to Arlington VA.
- The areas both have many geographic constraints that support in reducing speeds.
- Seattle has good framework for walkability and a few trunk arterials which makes success more likely.
- The differences in transportation networks do not make the Seattle Plan non-transferable to other areas.

**Is there a takeaway from the process that you want to make sure our client in Arlington knows before they embark on developing a plan?**

- Plans are more binding in Seattle, which is why the Vision Zero is an “Update” and not a plan.
- Community members usually do not argue forcefully against safety.

- The city is working by corridor hoping that it will have halo and network effects.
- If speeds are generally 25 MPH then speeds are slower everywhere and speed limit changes are made by signing only.
- Plans do not include enforcement or design changes.
- Recommend the creation of street teams to participate in every community event to talk about the plan.
- Initially, there was not as much leadership support from elected leaders. City leadership had a car centric mindset. Education of city leadership was necessary to increase awareness and support.
- Last year (2019) was the worst year in the city for safety. Vision Zero became a priority when numbers for fatalities came in higher than typical.
- There was political pressure from advocacy groups and non-profits to act, which triggered the mayor to take a renewed focus on safety.
- The initial plan was to lower speed limits over a four-year period. However, a directive from the mayor shortened the target horizon to one year. Leadership support allowed for more aggressive approach to implementing larger actions.

## **Interview with City of San Francisco (San Francisco, WA)**

Interview Date: January 29, 2020

**Can you provide some insight in to the thinking that lead to some of your more innovative portions of the Vision Zero Program?**

- No response provided.

**What successes have you seen to date and what do you think are the reasons for those successes? Have there been any facets that are proving to be less successful than hoped?**

- The City of San Francisco is working on their third action strategy.
- The 2015 Vision Zero plan established the foundation for the need for improvements.
- The 2017 Vision Zero plan shifted to a phased system approach and steered away from 3E framing (education, engineering, enforcement).
- The 2019 Vision Zero plan is halfway through a 10-year plan.
- The city has been receiving many public comments as to why there are still so many fatalities. People are concerned why fatalities are not decreasing as much as hoped.
- The city has seen success with framing issues around transformative policy but are unsure if this would be the correct approach for the first plan.
- Complimentary goals are helpful (mode shift, 80% sustainable trips, transit).
- Safety is linked to other commitments, such as mode shift.

**Were there any particularly effective or ineffective engagement strategies utilized during your process or implementation?**

- Core advocacy groups did not feel involved in the first round of planning.
- A large focus for the third version of the plan was implementing a large-scale engagement strategy that incorporated collaboration with advocacy groups.
- Advocacy groups were split into informative groups and co-developing groups. One-on-one sessions were held with co-developing groups.

- Recommendations for advocacy groups include:
  - Define roles for each advocacy group.
  - Conduct a briefing quarterly with advocacy groups
- The third round of engagement included:
  - Coffee meetings with each city council district supervisor.
  - Advertisements for supervisor district meetings sent to senior centers, food banks, and parks.
  - Translators were brought to communities when necessary.
  - Structured activities were held during the presentation to prioritize previous strategies.
  - The presentation focused on bigger pictures ideas.

**Do you view your plan as effective and why or why not?**

- Linking transformative policies and complimentary goals has been effective.
- There was an average around 30 fatalities annually, which dropped to 20 fatalities annually.
- There has been an increase in fatalities recently, which has led to criticism.
- Data-driven policies have been politically unpopular (automated speed cameras, congestion pricing), but we are seeing trends of public support in these policies.
- Communication is helpful in relaying accomplishments.
- The city identified timeframes for each action and a lead agency.
- The plan identifies an internal point-of-contact for every action.
- It is important to ensure adequate resources are available.

**Are there any characteristics of the area, say the density or transit options, that you think aided in the implementation of the plan or hindered the plan?**

- A High Injury Network (HIN) is helpful and recommended for Arlington.
- In San Francisco, the transit network overlaps the High Injury Network often.
- There is a lot of exposure in transit areas due to the network being very concentrated (high exposure rate).
- Disadvantaged communities overlaid with a High Injury Network is very transferable and scalable.
- Recommend developing a permit process for scooters.
- Other topics to consider is how to address and influence sectors, such as transportation network companies (TNCs) and autonomous vehicles, where transportation agencies have little authority.
- The city has received a lot of support for protected bike lanes.

**Is there a takeaway from the process that you want to make sure our client in Arlington knows before they embark on developing a plan?**

- Elevating equity is essential. No action should be included in the strategy if equity is not addressed first.
- The third action strategy built on a lot of data, such as where collisions occurred and where communities of needs were located.
- A capital budget identified the projects that were going to be implemented.
- The implementation strategy should not only be a capital plan.



- The capital budget addressed broader goals (i.e., upgrade 100 signals vs upgrade a specific corridor).
- The plan should not solely focus on engineering related elements.
- A public health element in Vision Zero is highly recommended.
- There is only one Level 1 trauma center in San Francisco city/county which makes data collection much easier. The hospital data helps augment police data.

