

Transportation Achievement Award Category: Safety

Lead Agency: City of Fremont, CA

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Fremont Vision Zero Program

Five Years of Traffic Safety Progress and a Renewed Effort for Getting to Zero

Summary of Achievement

Over the past five years, the City of Fremont has achieved a remarkable 45% reduction in fatalities and severe injuries caused by traffic crashes. This significant safety accomplishment was facilitated through hard work, leadership, and diligent investment in safety infrastructure and programs. Fremont's intense organizational focus on traffic safety was initiated by the Fremont City Council with adoption of a Vision Zero policy in September 2015, and preparation by City staff of a Vision Zero Action Plan approved in March 2016.

The City of Fremont is reflecting on its past five years of traffic safety improvement and is preparing a renewed plan for "getting to zero". The new Fremont Vision Zero report and Action Plan, set for release in Spring 2021, includes a "playbook" on past efforts to serve as a resource for transportation professionals. Fremont has also been active in sharing its "safety story" through participation with ITE, FHWA, the Vision Zero Network and others.

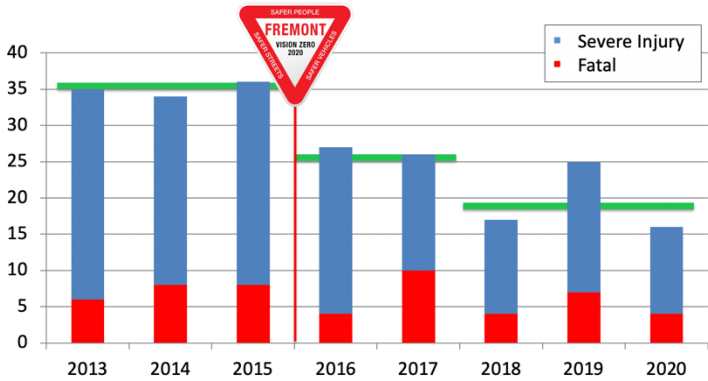


Background

The City of Fremont is a mid-sized city, population 240,000, located in the Silicon Valley area of Northern California. During the three years from 2013 to 2015, Fremont experienced a concerning rise in traffic fatalities and severe injury crashes, particularly involving pedestrians, youth, and seniors. The attention on Vision Zero as a traffic safety program in the United States, starting in 2014, by cities like New York, Seattle, and the nearby cities of San Francisco and San Jose, led Fremont officials to consider adopting a Vision Zero program as well.

Fremont already had a focus on traffic safety as an organizational priority and in 2015 was considered better than average with a per capita traffic fatality rate of 4 (per 100,000 population), well below the national and California rates of 11 and 9, respectively. Even so, the Vision Zero approach was a paradigm shift for the City's transportation, police and public works staff. Rather than accepting that major traffic crashes were inevitable, or the result of mistakes and reckless behavior, the City embraced the "safe systems" approach. The newly embraced perspective was that major traffic crashes were preventable, and that one fatality was one too many.

In the three years prior to adopting Vision Zero, from 2013 through 2015, Fremont had 105 major traffic crashes with 22 fatalities and 83 severe injuries. In the most recent three-year period, from 2018 through 2020, Fremont had 58 major traffic crashes (a 45% reduction), with 15 fatalities (down 32%) and 43 severe injuries (down 48%). This reduction was accomplished during a period when traffic fatalities at a national level have been increasing.



Highlights

Organizational Collaboration Led by Enlightened and Engaged Engineers

Fremont’s Vision Zero success starts with an organization that prioritizes safety and enables quick and coordinated action. The City is guided by a General Plan that establishes a goal of creating Complete Streets and encouraging non-auto modes of travel. The City’s transportation engineers, pavement maintenance managers, project design staff, and street maintenance crews are all organized within the Public Works Department, which reduces barriers to collaboration. City staff in Public Works have achieved a tremendous output of safety projects by leveraging the pavement maintenance program for roadway restriping and by partnering with street maintenance crews to install quick-build projects. Fremont has also benefited from a supportive environment of planning and funding which has helped to fill in the details of the higher-level Vision Zero Action Plan. The City’s staff is empowered to use cutting-edge tools and best practices. The City prioritizes staff training through both external opportunities such as conference attendance and internal peer learning. Transportation engineers make use of the latest design standards including NACTO guidance, examples from peer cities, and even lessons observed abroad.

Timely Data, Deep Analytics and Police Partnership

The City’s Police and Public Works Departments have a very close working relationship which supports Vision Zero. Traffic enforcement officers and transportation engineers meet monthly to share information about major crashes with information about where, when, how, and why it occurred, and to discuss perspectives on what can be done to continually improve traffic safety in the community. Traffic crash report information is combined into a dataset that is used both reactively to address “hot spots” and proactively to address systemic issues. Location data is mapped and monitored to identify a high injury network of streets for focused engineering and enforcement/education countermeasures. It is noted that the Fremont Police Department largely conducts high-visibility traffic stops to provide warnings and education, rather than issue tickets and fines.

Systemic Implementation of Safe and Complete Streets on Major Arterials

Over the past five years, since adopting Vision Zero, Fremont has worked to systematically re-engineer its streets to be “safe and complete”, promoting safer speeds for motorists and create safe and comfortable streets for people walking, biking, and taking transit. Fremont uses a variety of design tools to create safer streets, including narrowed travel lanes and intersections.

Before



After



Historically many Fremont streets were built with wide 12 to 14-foot travel lanes, which is a design standard that promotes speeding and is more appropriate for large trucks traveling at freeway speeds. Since 2016, Fremont has adopted a 10-foot travel lane standard, which encourages slower speeds by creating a feeling of greater enclosure and

friction for drivers. Narrower lanes also free up roadway width for enhanced bike facilities, including buffered and protected lanes. Largely through pavement maintenance projects, Fremont has restriped buffered bike lanes on 50 miles of arterial streets and 13 miles include physical separation posts within the buffer area. Also, road diet projects are implemented to remove lanes considered to be unnecessary or to improve safety.

At intersections, street designs have focused on tighter radii which shorten crossing distances for bicyclists and pedestrians and force drivers to take turns at slower speeds. Fremont has implemented protected intersections, which eliminate weaving maneuvers between bicyclists and vehicles, improve sight lines, and further reduce crossing distances for pedestrians. Intersection improvements have been implemented as both quick-build projects and as full reconstruction with modified and upgraded traffic signal systems as part of major capital and grant-funded projects. Through 2020, Fremont has reconstructed five major intersections as protected intersections, and by the end of 2021, a total of 12 protected intersections will be complete.



The Walnut Avenue Bikeway project was selected by PeopleForBikes as among the top ten of “America’s Best New Bikeways of 2020”. The project includes a 1.2-mile raised cycle track and four protected intersections.

Safe Routes to Schools and Quick-Build Delivery

As part of a comprehensive Safe Routes to Schools program, implemented with the Fremont Unified School District, school access safety audits were conducted at all 42 Fremont schools. Subsequently, 400 safety improvement actions were implemented consisting of crosswalk enhancements, intersection narrowing, stop controls, and parking restrictions, with most improvements installed quickly by Public Works street maintenance crews.



From 2013-2015, Fremont, tragically, saw nine major crashes involving youth 15 years of age or younger. This number dropped to just one in the period from 2018-2020. The City's efforts related to planning, project delivery and positive safety outcomes earned Fremont national recognition in early 2020 as the third ever recipient of the "Vision Zero for Youth" Leadership Award, presented by the National Center for Safe Routes to Schools.

Safer Pedestrian Crossings

Fremont's early Vision Zero data analysis showed that crashes involving pedestrians accounted for more than 30 percent of major crashes, with most crashes happening while the pedestrian was crossing a street. Fremont's efforts to improve safety of crossings have included installing pedestrian countdown signals at all 220 signalized intersections citywide and installing a suite of short-term and long-term treatments at uncontrolled crossings of major streets.



Fremont has approximately 40 crosswalks on multi-lane, higher speed roadways that are uncontrolled, meaning that there is no signal or stop sign but that motorists must yield to pedestrians. Fremont has sought to enhance these crosswalks with both short- and long-term measures to improve yielding compliance. Short-term measures have included high visibility crosswalk striping, advance yield signage and markings, and striping and channelizers between travel lanes to prohibit "multiple threat crashes." Multiple threat crashes involve one vehicle attempting to pass another vehicle that has yielded to a pedestrian, and then hitting the pedestrian because the first vehicle has obstructed a sight line. Long-term measures to enhance crossings have included installing rectangular rapid flashing beacons, pedestrian signals, median refuge islands, and bulbouts. Fifteen of the 40 crossings in Fremont have since been upgraded with flashing beacons or pedestrian signals.

Brighter Street Lights



The 2016 Fremont Vision Zero Action Plan identified that approximately 50 percent of the City's fatal and severe injury collisions occurred in the early or late evening period between 6:00 p.m. and 10:00 p.m. In response to this data, the City accelerated an environmental sustainability initiative to upgrade street lighting to achieve immediate safety benefits. The City converted all 16,000 streetlights from "yellow"

sodium vapor lights to brighter "white" LED lights. The new streetlight fixtures use half as much energy and are twice as bright. Before and after studies identified a 23% reduction in fatal and serious injury crashes occurring in nighttime conditions.

Speed Management

There are clear relationships between excessive speed, reduced reaction time, and increased crash severity. In Fremont, 70 percent of crashes happen on streets with a speed limit of 40 mph or higher. Because of this, speed management has been an overarching theme of Fremont’s Vision Zero work. After engineering streets for safe speeds, the City of Fremont re-surveys streets to see if changed designs have led to lower operating speeds. After speed surveys, Fremont has lowered the posted speed limit on more than 50 street segments since 2015. Fremont has also worked with its Police Department on targeted speeding enforcement and has installed 45 speed feedback signs. Crashes involving unsafe speed dropped by 44 percent compared to the years before Vision Zero adoption.

While much of the City’s efforts around Vision Zero have been focused on higher speed roadways, the City has also undertaken measures to ensure safe speeds in neighborhoods, as part of a balanced program. These efforts have included increasing the number of neighborhood speed humps from 200 to 250 citywide. During the beginning of the coronavirus pandemic in 2020, the City launched a citywide “Drive Slowly, Be Healthy” slow streets program, with a yard sign campaign to promote a 20-mph advisory speed on all residential streets.

Community Engagement and Partnerships

Fremont’s Vision Zero program also promotes community engagement and partnerships to help create a positive citywide traffic safety culture. This has included staffing booths at community events, creating educational videos, City newsletter articles, and participating as guest speakers for community group meetings. Each year, youth volunteers repaint “LOOK” safety messages at street crosswalks. In 2019, Kaiser Permanente provided a grant to the City to place 130 street banners with traffic safety education messages and to build community support for the goal of “no more traffic deaths”.



Commitment to Advancement of Transportation Profession

While the City is working boldly to improve traffic safety in Fremont, there is an equal commitment to share “lessons learned” with other communities and the transportation profession. In this regard, City staff regularly participates in peer exchange opportunities with local organizations that have included the Silicon Valley Bicycle Coalition, Alameda County Transportation Commission and the Metropolitan Transportation Commission. At a national level, Fremont’s Vision Zero program has been featured in publications and at conferences hosted by the Institute of Transportation Engineers, Transportation Research Board, Federal Highway Administration, National Safe Routes to School Coalition, and Vision Zero Network.