Performance Audit of The City's Programs Responsible for Improving Pedestrian Safety

The City Can Improve Pedestrian Safety By Using Available Data To Focus Engineering, Enforcement, And Educational Resources On Locations And Behaviors That Place Pedestrians At The Greatest Risk

Office of the City Auditor

City of San Diego

OCA
Independent • Objective • Accurate

September 2016

This Page Intentionally Left Blank

THE CITY OF SAN DIEGO

September 15, 2016

Honorable Mayor, City Council, and Audit Committee Members
City of San Diego, California

Transmitted herewith is a performance audit report on the City's Programs Responsible for Improving Pedestrian Safety. This report was conducted in accordance with the City Auditor's Fiscal Year 2016 Audit Work Plan, and the report is presented in accordance with City Charter Section 39.2. The Results in Brief are presented on page 1. Audit Objectives, Scope, and Methodology are presented in Appendix B. Management's responses to our audit recommendations are presented after page 103 of this report.

We would like to thank staff from the Transportation Storm Water Department, Planning Department, Communications Department, San Diego Police Department and the Office of the Mayor for their assistance and cooperation during this audit. All of their valuable time and efforts spent on providing us information is greatly appreciated. The audit staff members responsible for this audit report are Danielle Novokolsky, Andy Hanau, and Kyle Elser.

Respectfully submitted,

Eduardo Luna
City Auditor

cc: Stephen Puetz, Chief of Staff, Office of the Mayor
Scott Chadwick, Chief Operating Officer
Stacey LoMedico, Assistant Chief Operating Officer
Jan Goldsmith, City Attorney
Mary Lewis, Chief Financial Officer
Ron Villa, Deputy Chief Operating Officer, Internal Operations
Paz Gomez, Deputy Chief Operating Officer, Infrastructure/Public Works
David Graham, Deputy Chief Operating Officer, Neighborhood Services
Shelley Zimmerman, Chief, Police Department
Mark Jones, Assistant Chief, Police Department
Joseph Ramos, Captain, Police Department

OFFICE OF THE CITY AUDITOR
1010 SECOND AVENUE, SUITE 555 • SAN DIEGO, CA 92101
PHONE (619) 533-3165 • FAX (619) 533-3036

TO REPORT FRAUD, WASTE, OR ABUSE, CALL OUR FRAUD HOTLINE (866) 809-3500

DIVERSITY BRINGS US ALL TOGETHER THE CITY OF SAN DIEGO

Kris McFadden Director, Transportation and Storm Water Department
Vic Bianes, Assistant Director, Transportation & Storm Water
Linda Marabian, Deputy Director, Transportation and Storm Water Department
Katie Keach, Director of Communications, Communications
Jeff Murphy, Director, Planning Department
Nancy Bragado, Deputy Director, Planning Department
Marshall Anderson, Director of Council Affairs, Office of the Mayor
Jonathan Herrera, Director of Public Safety & Neighborhood Services, Office of the Mayor
Rolando Charvel, City Comptroller
Andrea Tevlin, Independent Budget Analyst

This Page Intentionally Left Blank

Table of Contents

Results In Brief 1

Background 4

Audit Results 20

Finding 1: The City Can Improve Pedestrian Safety by Using Available Data to Prioritize Its Limited Infrastructure Resources So Locations that Pose the Greatest Risk to Pedestrians are Updated First 20

Finding 2: The City Can Improve Pedestrian Safety by Increasing Traffic Enforcement's Focus on Specific Violations That Pose the Greatest Risk to Pedestrians 36

Finding 3: The City Can Improve Pedestrian Safety by Using a Data-Driven Approach to Target Pedestrian Safety Enforcement Operations on Specific Locations and Traffic Violations That Pose the Greatest Risk to Pedestrians, and by Coordinating Enforcement with Education 52

Finding 4: The City Can Improve Pedestrian Safety by Developing a Citywide Public Education and Outreach Campaign to Increase Awareness and Change Pedestrian and Driver Behavior 71

Finding 5: The City's Vision Zero Task Force Should Develop Strategies for Financing and Evaluating the City's Vision Zero Efforts, and Should Report Results to Improve Public Awareness and Accountability 80

Conclusion 91

Recommendations 93

Appendix A: Definition of Audit Recommendation Priorities 99

Appendix B: Objectives, Scope, and Methodology 100

Results In Brief

Ensuring the safety of residents and visitors is perhaps the City of San Diego's (City's) most important responsibility. Pedestrians are some of the most vulnerable users of the City's roadways, and between 2001 and 2015, more than 8,000 pedestrians were injured in collisions on City streets, and 270 pedestrians were killed. In recent years, the number of pedestrians who were injured or killed on City streets significantly increased—from 2013 to 2015 alone, 66 pedestrians were killed, more than any other three-year period since 2001.[1] During that time, more pedestrians were killed than any other type of roadway user.

In response, the Mayor and City Council adopted Vision Zero in 2015, which includes a goal of eliminating all traffic fatalities and serious injuries, including for pedestrians, by 2025. Vision Zero is based on the concept that traffic fatalities and serious injuries are unacceptable, preventable, and can be eliminated using a three-pronged approach comprising of three E's:

- Engineering/Infrastructure
- Enforcement
- Education

The City has taken important initial steps in 2016 to achieve this goal by creating a Vision Zero Task Force and developing a Vision Zero Strategic Plan for FY 2017. As it moves forward with Vision Zero, we found several areas where the City can better utilize existing data and leverage the experiences of other cities to improve pedestrian safety. Specifically, we found:

- Many intersections that have experienced the highest pedestrian collision, injury, and fatality rates have not been modernized to improve pedestrian safety. At the same time, the City has invested resources for pedestrian

[1] See the Background and the Objectives, Scope, and Methodology sections of this report for information on the City's collision data used to generate these totals.

safety infrastructure at many other locations where pedestrians were at lower risk.

- The percentage of traffic citations that the San Diego Police Department (SDPD) issued for the driver violations that caused a large proportion of the City's pedestrian fatalities and serious injuries from 2013 to 2015 was low, and enforcement of these driver violations could likely be increased.
- SDPD's Traffic Division (Traffic Division) does not generally use data to determine where to conduct targeted pedestrian safety enforcement operations and what traffic violations to focus on during these enforcements. As a result, the Traffic Division targeted pedestrian safety enforcement operations may not be directed towards the locations at which additional enforcement is most needed and for the violations that have caused pedestrian collisions in those locations. Also, targeted pedestrian safety enforcement operations are not made highly visible, and do not include an educational component, which limits their impact on driver and pedestrian behavior.
- There are no current plans for a Citywide pedestrian safety educational campaign, which other cities have found to be an effective means of increasing awareness of pedestrian safety and improving driver and pedestrian behavior.
- The City's Vision Zero Task Force does not currently have comprehensive strategies for financing Vision Zero efforts, evaluating their effectiveness, and communicating results to the public.

In order to ensure that the City's efforts to improve pedestrian safety through the Vision Zero initiative are as effective as possible, we recommend that the City:

- Utilize available data and establish measurable goals to target pedestrian safety infrastructure and enforcement efforts at the locations at which infrastructure improvements and enforcement are most needed and on the behaviors that place pedestrians at the greatest risk.

- Incorporate an educational aspect into enforcement efforts.
- Develop a Citywide pedestrian safety educational campaign.
- Develop financing plans and performance evaluation strategies for Vision Zero initiatives.
- Create a Vision Zero website to communicate current initiatives and results to the public.

We made a total of 18 recommendations to address the issues identified in this report. The City Administration agreed to all 18. The Administration's response to our findings and recommendations can be found beginning on page 104.

Background

Pedestrian Safety in the City of San Diego

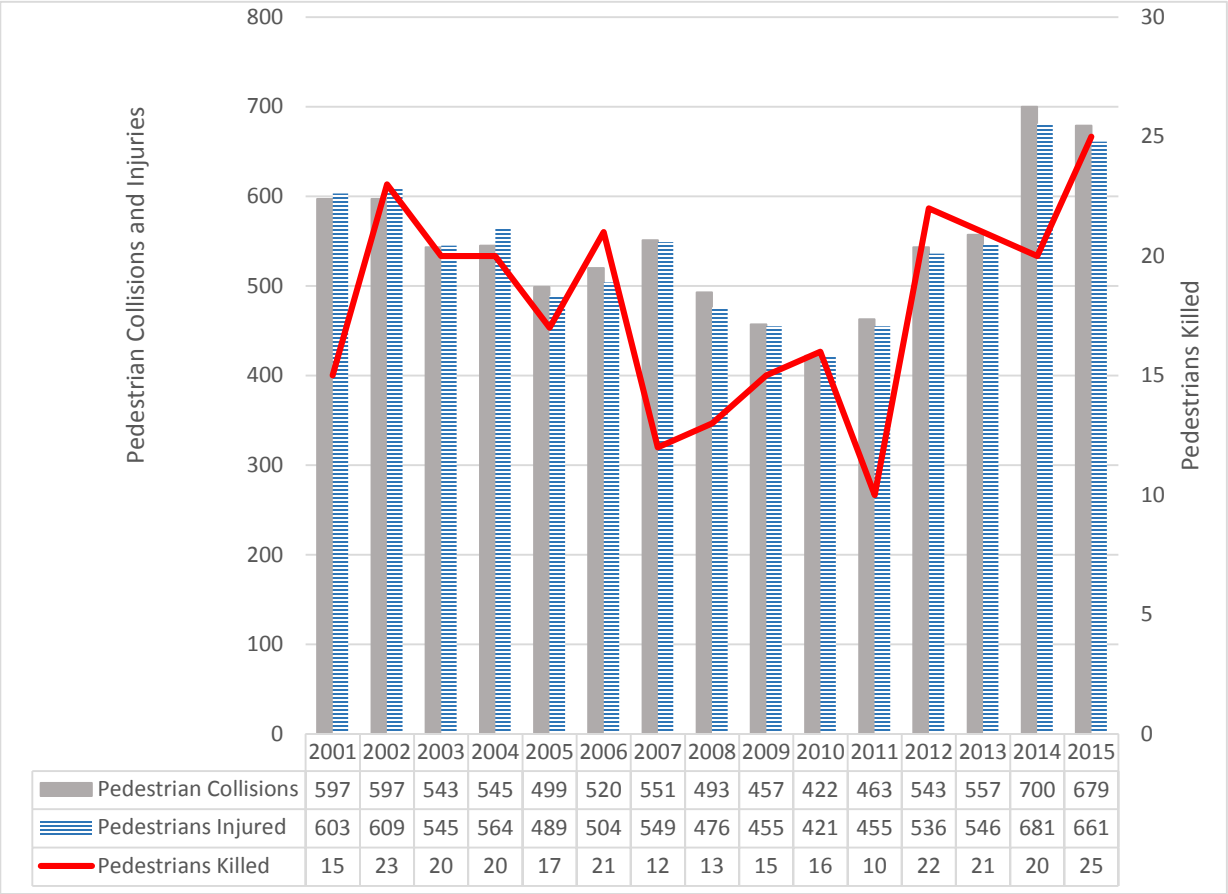
One of the City of San Diego's (City's) most important responsibilities is to ensure the safety of residents and visitors. With regard to the safety of pedestrians—some of the most vulnerable users of the City's roadways—this responsibility has grown even more critical in recent years. From 2001 to 2015, more than 8,000 pedestrians were injured in collisions on City streets, and 270 pedestrians were killed. The number of roadway fatalities in the City significantly exceeded homicides in 2015, and, even though pedestrians only account for approximately 16 percent of roadway trips in the City, nearly half of the City's roadway fatalities were pedestrians. More pedestrians were killed than any other type of roadway user.[2]

Furthermore, as in many other jurisdictions, pedestrian collisions, injuries, and fatalities have been increasing in the City. According to the Governors Highway Safety Association (GHSA), pedestrian fatalities increased by 19 percent nationwide from 2009 to 2014. Pedestrian fatalities have risen significantly in the City since reaching a low in 2011. In fact, 66 pedestrians were killed on City streets from 2013 to 2015—the most pedestrian fatalities the City has experienced in any three-year period since 2001.[3] **Exhibit 1** shows the number of pedestrian collisions, injuries, and fatalities in the City for each year from 2001 to 2015.

[2] According to data from the San Diego Police Department and the Transportation and Storm Water Department, the City experienced 37 homicides in 2015, while 57 people were killed in traffic collisions on City roadways. Of the 57 people killed in traffic collisions, 25 (44 percent) were pedestrians, 21 (37 percent) were vehicle occupants, 6 (11 percent) were motorcyclists, and 5 (9 percent) were bicyclists.

[3] As discussed later in the Background and also in the Objectives, Scope, and Methodology, the City currently uses two different systems to track collision data. The San Diego Police Department (SDPD) utilizes the Automated Regional Justice Information System (ARJIS), while the Transportation and Storm Water Department utilizes a newer system called Crossroads. There are some differences in the number of pedestrian collisions, injuries, and fatalities recorded in each system, which appear to be due to methodological differences as well as some coding errors. We found that, while there are differences between the data in the two systems, the data in each system is sufficiently reliable for the purposes of the analysis in this report. For example, both systems indicate that more pedestrians were killed on City streets from 2013–2015 than any other three-year period since 2001. Furthermore, the departments are aware of the discrepancies, which will be resolved when SDPD transitions to the Crossroads system in the near future. Each system has advantages and disadvantages, and data from both systems is used for analysis in this report.

Exhibit 1: Pedestrian Collisions, Injuries, and Fatalities Have Significantly Increased in San Diego Over the Past Several Years



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Pedestrian Collisions	597	597	543	545	499	520	551	493	457	422	463	543	557	700	679
Pedestrians Injured	603	609	545	564	489	504	549	476	455	421	455	536	546	681	661
Pedestrians Killed	15	23	20	20	17	21	12	13	15	16	10	22	21	20	25

Source: OCA, based on data from the Crossroads traffic collision tracking system.

Note 1: The data shown is for pedestrians injured and killed in collisions on roadways owned by the City of San Diego. It does not include pedestrians who were hit, injured, or killed on other roadways within the City limits, such as freeways. In addition, it does not include other types of injuries or fatalities that may have occurred on City streets, such as trip-and-falls or homicides.

Note 2: The National Highway Traffic Safety Administration found that many pedestrian collisions are not reported to the police. This is especially the case for collisions that only result in minor injuries or no injuries. As a result, available data on pedestrian collisions and injuries significantly underestimates the prevalence of these incidents. This is likely to be the case in the City of San Diego as well.

Pedestrian Injuries and Fatalities Are a Significant Public Health Concern and Result in Substantial Economic Costs

Vehicle vs. pedestrian collisions have a wide range of significant negative effects on both victims and the City as a whole.

Pedestrians are highly vulnerable users of the City's transportation network. Compared to traffic collisions overall, vehicle vs. pedestrian collisions are much more likely to result in physical harm, including:

- Severe injuries, pain, and suffering;
- Long-term disabilities and reduced quality of life; and
- Death.

In addition to their impact on physical health, pedestrian collisions result in significant economic costs. Specifically, these costs include:

- Lost workplace and household productivity;
- Short-term and long-term medical care expenses;
- Emergency medical response and law enforcement investigation expenses;
- Legal expenses; and
- Congestion costs associated with law enforcement collision investigations (lost time, increased fuel consumption, and air quality impacts due to closed streets, traffic delays, etc.).

From 2013 to 2015 alone, 66 pedestrians were killed on City streets, and another 1,888 were injured, including 140 who sustained severe injuries such as lacerated organs, skull fractures, and brain and spinal injuries. Using data on economic costs produced by the National Highway Traffic Safety Administration (NHTSA), we estimate that the net economic cost of pedestrian collisions, injuries, and fatalities in the City totaled approximately $134 million between 2013 and 2015.[4,5]

[4] The NHTSA generated average economic cost estimates based on the severity of an injury or fatality. For example, the NHTSA estimates the economic cost of a severe injury at $78,530.

[5] The economic cost estimate of $134 million does not include costs associated with reduced quality of life resulting from severe injuries, long-term disabilities, or death. While quality of life costs are controversial and are difficult to estimate, economists and government agencies generally recommend including these costs, which are substantial, in order to estimate the true adverse impact of these events on society and make informed cost-benefit decisions when considering countermeasures. The Value of a Statistical Life (VSL) method is commonly used to generate these estimates. Using the low end and high ends of the range of VSL values provided by the

Notably, according to the NHTSA, more than three-quarters of such costs were ultimately paid by people who were not directly involved in a pedestrian collision, through such means as higher medical and vehicle insurance premiums and taxes to pay for public costs.[6] In addition, public agencies may be liable for some of these costs if a court finds that they did not take reasonable action to correct known safety hazards.[7]

Rising Pedestrian Collision Rates May Deter Walking and Impact the City's Ability to Reach Its Climate Action Plan Goals

In addition to causing significant physical harm and substantial economic costs, rising pedestrian collision rates may hurt the City's ability to increase mobility through walking and the use of public transport, and thus impact the City's ability to achieve its Climate Action Plan (CAP) goals. In order to reduce greenhouse gas emissions generated by vehicles, the CAP sets goals to double the percentage of commuters who walk or take public transit to work by 2035.[8] Increased walking is essential to reaching both of these goals because many public transit users begin and end their trips as pedestrians. However, if people do not feel safe as pedestrians, they may be less likely to walk and/or utilize transit.

NHTSA, these quality of life costs would add between $656 million and $1.2 billion to the $134 million economic cost estimate shown above.

[6] Many of the economic costs that result from pedestrian collisions, such as medical expenses, are paid by medical and vehicle insurers. These costs are then passed on to other insured people through higher premiums.

[7] According to the City's Risk Management Department, the City does not currently track liability claims with enough specificity to systematically identify instances where the City was liable for damages related to a failure to correct known safety hazards that contributed to a pedestrian injury or fatality. However, a jurisdiction's potential liability could be substantial in some cases. For example, as reported by the Los Angeles Times, the City of Los Angeles recently paid $15 million to settle a claim for a 2010 collision that killed one pedestrian and severely injured another. See http://www.latimes.com/local/lanow/la-me-ln-lawsuit-north-hollywood-20151209-story.html.

[8] This goal applies in Transit Priority Areas, which are defined as "Areas within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program."

Pedestrian Collisions Have Many Causes, Are More Common in Certain Areas and Conditions, and Are More Likely to Involve Children and Older People

There are many factors that likely contribute to the increasing rates of pedestrian collisions, injuries, and fatalities in the City of San Diego. Some of these factors include:

- Increases in the number of pedestrians and vehicles on City roadways;
- Aging infrastructure that does not meet current pedestrian safety standards; and
- Increases in dangerous behavior, such as distracted driving and distracted walking.

Furthermore, City collision data from 2013 to 2015 shows that dangerous driver and pedestrian behavior both contribute to the high rates of pedestrian fatalities and serious injuries, with drivers and pedestrians each found to be at fault approximately half of the time. Overall, using the data provided by SDPD, we found drivers to be at fault in 44 percent of pedestrian fatalities and serious injuries, while pedestrians were found to be at fault in 53 percent of pedestrian fatalities and serious injuries.[9]

The speed of the vehicle in a vehicle vs. pedestrian collision significantly affects the likelihood and severity of a pedestrian collision. The fatality rate for pedestrians who are struck by a vehicle moving at 20 miles per hour is 10 percent, while the fatality rate for pedestrians who are struck by a vehicle moving at 40 miles per hour increases to 80 percent. Additionally, while we did not specifically review the City's collision data to identify the prevalence of alcohol intoxication as a contributing factor in pedestrian collisions in the City, the San Diego Police Department (SDPD) stated that alcohol intoxication is frequently involved. According to the Governors Highway Safety Association, alcohol use by the driver and/or pedestrian was a contributing factor in nearly half of pedestrian fatalities nationwide in 2013.

There are also trends in the locations of pedestrian collisions, the conditions present, and the victims involved. While pedestrian collisions are geographically widespread in the City of San Diego, they are more likely to occur at intersections, in

[9] The party at fault could not be determined in an additional 3 percent of collisions.

high-density areas, and high-employment areas. In addition, pedestrian collision rates in the City for children under age 5 and adults over age 60 are higher than the State collision rates for these age groups.

The City Adopted Vision Zero in 2015 with a Goal of Eliminating Traffic Deaths and Serious Injuries by 2025

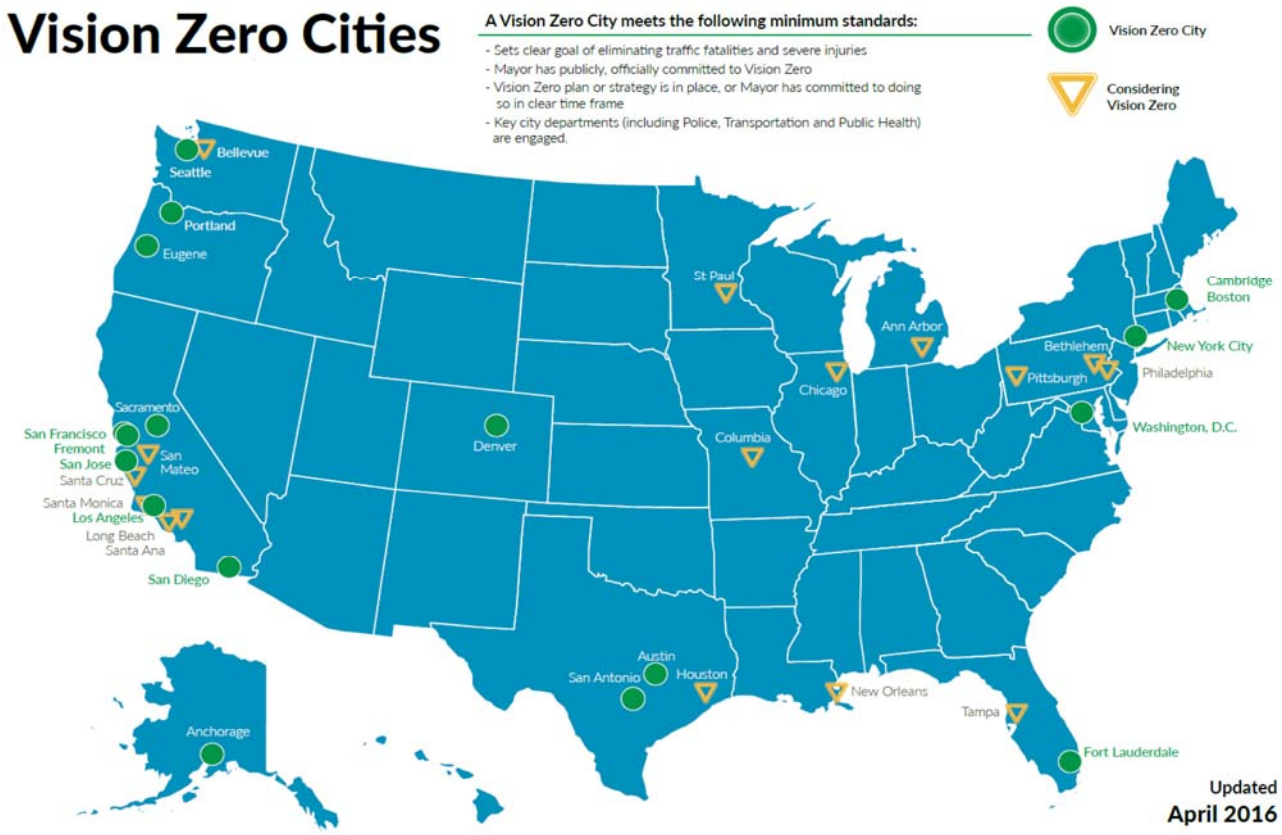
In response to significant numbers of traffic fatalities and serious injuries, including for pedestrians, many cities across the U.S. and other countries have adopted Vision Zero plans to reduce and eliminate serious injuries and fatalities caused by traffic collisions, including pedestrian collisions. Vision Zero is based upon the concept that traffic collisions, serious injuries, and fatalities are unacceptable, preventable, and can be reduced through a three-pronged approach that includes:

- **Engineering** to improve the safety of transportation infrastructure design;
- **Enforcement** to deter hazardous behaviors that cause collisions; and
- **Education** to increase awareness of traffic laws and the importance of safe behavior.

The City of San Diego recently joined the growing list of U.S. cities that have adopted Vision Zero. In June 2015, the Mayor announced his support for Vision Zero, and, in October 2015, the City Council unanimously adopted a resolution to develop a Vision Zero plan with a goal of eliminating traffic deaths and serious injuries, including those suffered by pedestrians, by 2025.[10] **Exhibit 2** shows the U.S. cities that had adopted or were considering adopting a Vision Zero Plan as of April 2016.

[10] Council Resolution No. R-310042, "A Resolution of the Council of the City of San Diego Adopting a Vision Zero Plan to Eliminate Traffic Fatalities and Serious Injuries in the Next Ten Years," was adopted by an 8-0 vote on October 27, 2015. Council District 8 was not present.

Exhibit 2: Many U.S. Cities Have Adopted Vision Zero, Including San Diego



Source: Vision Zero Network.

The City convened a Vision Zero Task Force (Task Force) in January 2016, with a goal of developing a Vision Zero Strategic Plan for FY 2017. The Task Force is headed by the Office of the Mayor, and includes multiple City departments as well as representatives from the City's community partners. Current Task Force membership is shown below in **Exhibit 3**. As in other cities, the City's Vision Zero planning efforts are primarily based on the three E's mentioned above—Engineering, Enforcement, and Education. The roles of the various City departments involved in Vision Zero are summarized in **Exhibit 4**, and are described in more detail in the following sections.

Exhibit 3: City of San Diego Vision Zero Task Force Members

City of San Diego Representatives
Office of the Mayor
Transportation and Storm Water Department
San Diego Police Department
Planning Department
Outside Agencies
County of San Diego Health and Human Services Agency
San Diego Unified School District
Community Partners
Circulate San Diego
Rady Children's Hospital
El Cajon Blvd. Business Improvement Association
Bicycle Advisory Committee
Bike SD
Urban Collaborative Project

Source: OCA, based on information provided by the Vision Zero Task Force and Circulate San Diego. Membership shown is as of June 2016.

Exhibit 4: Several City Departments Currently Have Roles in Improving Pedestrian Safety through Engineering, Enforcement, and Education

<table>
<tr><th colspan="2">Engineering</th><th>Enforcement</th><th>Education</th></tr>
<tr><th>Transportation & Storm Water Department (Transportation Engineering Operations and Street Divisions)</th><th>Planning Department</th><th>San Diego Police Department</th><th>San Diego Police Department (Traffic Division)</th></tr>
<tr><td>Owner of the City's transportation assets.
Works to improve traffic flow and safety via capital improvement projects and operational modifications.</td><td>Develops mobility plans that recommend certain roadway improvements, such as:
• Pedestrian Master Plan
• Bicycle Master Plan
• Multimodal corridor improvements</td><td>Enforces the City's traffic laws.</td><td>Makes pedestrian safety presentations at schools at the school's request.

Coordinates School Safety Patrols utilizing approximately 2,000 Juvenile Service Team members (crossing guards) at 80 elementary schools.</td></tr>
<tr><td rowspan="3">Oversees transportation infrastructure operations and maintains streets and sidewalks:
• Coordinates traffic investigations for signs, markings, traffic control devices, speeding concerns and parking issues.
• Collects and analyzes collision data.
• Collects traffic volume data.
• Manages traffic signals (signal timing, installation, and modification).
• Establishes speed zones.
• Conducts corridor studies.
• Investigates and responds to the need for street lights, traffic signals, pedestrian safety improvements, traffic calming, and school safety improvements.

TSW's Street Division performs maintenance on the City's transportation assets and implements some improvements such as high-visibility crosswalks.

TSW takes both reactive and proactive steps to improve safety by responding to requests from the community and by reviewing the safety of existing corridors and intersections.</td><td>Develops long-range plans for the City:
• General Plan
• Climate Action Plan</td><td>Investigates traffic collisions and produces collision reports.</td><td>Partnered with Circulate San Diego and the San Diego Bicycle Coalition for the outreach and education portion of the OTS grant.</td></tr>
<tr><td>Public Works Department</td><td rowspan="2">Conducts targeted enforcement for violations that put pedestrians and bicyclists at risk (i.e. improper turns, not yielding to pedestrians or cyclists, jay walking) as part of a $1 million grant from the California Office of Traffic Safety (OTS):
• Targets areas with high rates of collisions involving pedestrians and bicyclists.
• Targets areas and violations based on citizen complaints.

Conducts targeted DUI enforcements using a portion of the OTS grant.</td><td rowspan="2">SDPD, Juvenile Administration, and SDPD's Sports Training, Academics, Recreation/Police Athletic League conduct "bike rodeos" to show support for cycling and help educate bicyclists on safety.

Conducts traffic safety presentations on military bases.</td></tr>
<tr><td>Manages the design and construction of transportation projects.

Provides centralized technical, operational, and project support services to the other divisions within the Public Works Department and other departments within the City. These services include management of the Capital Improvements Program (CIP).</td></tr>
</table>

Source: OCA, based on City budget documents and information from the listed departments.

The Transportation and Storm Water Department Leads the City's Engineering Efforts to Improve Pedestrian Safety Infrastructure

The mission of the Transportation and Storm Water Department (TSW) is to effectively manage and enhance the City's transportation network, which consists of 2,800 miles of streets, 4,600 miles of sidewalks, and 17,000 intersections, including 1,600 signalized intersections and flashing beacons. With regard to pedestrians, TSW's goals are to develop a balanced, multi-modal network to improve mobility, increase opportunities for alternative modes of transportation, and improve safety for all modes of transportation.

Within TSW, the Transportation Engineering Operations Division (TEO) is responsible for monitoring and initiating capital and operational changes to improve traffic flow and safety for vehicle occupants, bicyclists, and pedestrians. With respect to pedestrian safety, there are several ways that TEO becomes aware of safety issues that require infrastructure improvements or operational changes, such as high-visibility crosswalks and other striping, curb pop-outs, signage, and traffic and pedestrian signal needs. These include:

- Requests from residents, community groups, advocacy groups, and City Council offices: Each year, TEO receives approximately 6,000 requests from the public for various transportation infrastructure improvements, many of which are related to pedestrian safety.[11] Once a request is received, TEO engineering staff survey the site to determine whether any improvements or operational changes are warranted to address the issue (safety or otherwise) raised in the request. TEO engineering staff may also recommend additional improvements to correct other obvious safety deficiencies at the site, even if they are not related to the request.
- Requests from other departments: TEO also receives requests for pedestrian improvements from other departments. For example, the Office of ADA Compliance and Accessibility may submit requests for certain transportation infrastructure to be upgraded to meet current Americans with Disabilities Act requirements.

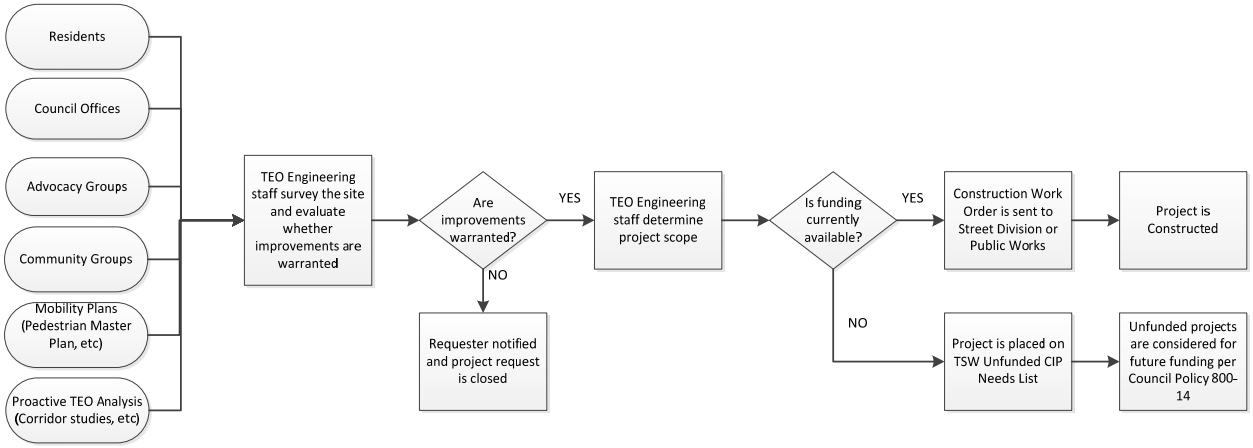
[11] TEO did not begin to track requests with enough specificity to generate statistics on the types of improvements requested until early 2016. However, according to TEO staff, a substantial portion of the requests made are related to pedestrian safety.

- Master Plans and Mobility Studies: Several City departments create Master Plans and Mobility Studies that include a pedestrian safety component. For example, the Planning Department has completed Pedestrian Master Plans for several neighborhoods, which include recommendations for various types of pedestrian-related safety and mobility improvements.
- Proactive studies conducted by TEO: In recent years, TEO has become proactive in addressing infrastructure needs. For example, TEO has identified several high-collision corridors and is currently in the process of proactively surveying these corridors to determine if improvements are needed to increase safety.

Once any needed improvements or operational changes are identified, TEO determines how to fund these improvements. If minor improvements such as new signage or striping can be funded immediately, work orders are sent to TSW's Street Division or the Public Works Department to be completed. More extensive improvement projects, such as pedestrian countdown timers, curb pop-outs, or new sidewalks, typically require funding through the City's Capital Improvements Program (CIP). Funds for CIP projects are allocated according to Council Policy 800-14, which establishes a methodology for prioritizing the use of these funds. If a project does not receive funding, it is placed on the City's CIP Unfunded Needs List, and is considered for funding in future years.

Exhibit 5 shows the basic process through which TEO becomes aware of and addresses pedestrian safety infrastructure needs.

Exhibit 5: TEO's Process for Identifying and Addressing Pedestrian Safety Needs



Source: OCA, based on interviews with TEO staff.

Summary of TEO Budget, Planned Expenditures, and Performance Measures

TEO's FY 2017 budget is approximately $9 million and includes 70 full-time equivalent (FTE) positions. In FY 2017, TEO plans to initiate scoping studies for three high-traffic-collision corridors, which were identified as part of the City's Vision Zero planning efforts.[12] TEO also received a $4 million grant to fund the final design and construction of a "Complete Street" on Market Street between 47th Street and Euclid Avenue. "Complete Streets" are streets designed with all road users—pedestrians, bicyclists, transit users, and drivers— in mind.

In addition, the City's FY 2017 CIP budget includes approximately $23 million for various transportation projects, of which approximately $4.8 million is allocated for pedestrian safety capital improvement measures. Specific planned expenditures include:

- $500,000 for "Complete Streets";
- $760,000 for traffic calming measures;
- $400,000 for traffic circles;
- $150,000 for new traffic signals;
- $1.7 million for new sidewalks; and

[12] TEO stated it plans to study three corridors: University Avenue from Fairmount Avenue to Euclid Avenue; University Avenue from Boundary Street to Winona Street; and El Cajon Boulevard from 43rd Street to Montezuma Road. According to TEO, the goal of these studies is to identify if any safety measures are needed and improve mobility for pedestrians and other roadway users through the design of a "Complete Street."

- $1.3 million for new street lights.

In addition to these expenditures, approximately $1.2 million is allocated to other improvements, such as bikeways, raised medians, and traffic signal modifications, which may improve pedestrian safety, even though that may not be the primary purpose of these improvements. For example, according to TEO, new and improved bike lanes have resulted in reduced vehicle speeds, which in turn reduces the risk to pedestrians when crossing the street.[13]

TSW and TEO have established several specific performance measures and goals related to pedestrian safety, including:

- To reduce preventable severe crashes and fatalities by 5 percent each fiscal year through 2035;[14]
- To program and fund pedestrian countdown timers at a minimum of 50 intersections per year; and
- To program and fund the installation of 10,000 feet of new sidewalk per year.

The San Diego Police Department Enforces Traffic Safety Laws and Investigates Pedestrian Collisions

The mission of the San Diego Police Department (SDPD) is "To maintain peace and order by providing the highest quality police services," and SDPD's vision includes "A Police Department . . . that fosters the highest level of public trust and safety."

With regard to the safety of pedestrians, SDPD is responsible for enforcement of traffic laws. Traffic enforcement is conducted by both Patrol and Traffic Division officers.[15] Enforcement of traffic laws is intended to deter unsafe behavior by roadway users in order to increase safety by reducing traffic collisions, including pedestrian collisions. As shown in **Exhibit 6**, SDPD issued approximately 328,000 traffic citations from 2013 to 2015, covering more than 350 different types of traffic

[13] Higher vehicle speeds are associated with both an increased likelihood and severity of pedestrian collisions.
[14] This performance measure is reported in TSW's annual budget, but it is effectively a Citywide performance measure, as pedestrian collisions, injuries, and fatalities could be influenced by several City departments through infrastructure, enforcement, and educational efforts.
[15] SDPD does not track the percentage of traffic citations that are issued by the Traffic Division vs. other SDPD units. However, according to SDPD, the percentage of traffic citations issued by other units outside the Traffic Division is significant.

violations, according to enforcement data from the Automated Regional Justice Information System (ARJIS).

Exhibit 6: SDPD Issued More Than 300,000 Traffic Citations from 2013 to 2015

Year	Number of Traffic Citations Issued by SDPD
2013	115,052
2014	115,749
2015	97,624
TOTAL	***328,425***

Source: OCA, based on citation data from ARJIS.

The 328,000 traffic citations SDPD issued from 2013 to 2015 covered more than 350 different vehicle code violations.

In addition to SDPD's day-to-day traffic enforcement efforts, the Traffic Division conducts special targeted enforcement operations funded by a grant, from the California Office of Traffic Safety (OTS). During these enforcement operations, several officers are sent to an area of the City to conduct increased enforcement. Many of these enforcement operations are intended to deter driving under the influence (DUI) and involve the use of DUI checkpoints. Because alcohol is often a factor in pedestrian collisions, reducing DUI's contributes to improving pedestrian safety. In addition, the Traffic Division conducts other targeted enforcement operations that are specifically intended to improve pedestrian and bicyclist safety by targeting violations that may cause pedestrian or bicyclist collisions. This includes enforcement of traffic laws that apply to drivers, pedestrians, and bicyclists. In 2015, SDPD conducted 50 DUI checkpoint operations, 70 DUI saturation patrols, and 24 targeted enforcements for pedestrian and bicycle safety. A total of approximately 1,400 citations were issued during the pedestrian and bicycle safety enforcements.[16]

SDPD is also responsible for investigating traffic collisions. Minor injury collisions are investigated by Patrol officers, while

[16] As discussed in Finding 5, SDPD only tracks the number of citations given to drivers, pedestrians, and bicyclists during targeted enforcements, and does not track the specific reason each citation was given (such as failing to yield the right-of-way to a pedestrian). As a result, it is not possible to determine how many citations were given specifically for violations that impact pedestrian safety.

all serious injury or fatal collisions are investigated by the Traffic Division's Accident Investigations Bureau (AIB) or Traffic Investigations Unit (TIU). When the Traffic Division is notified of a collision, AIB and/or TIU officers respond to the scene and gather evidence and information such as witness statements, skid data, road dimensions, and initial contact location, which is used to determine the primary cause of the collision and establish who was at fault. Evidence and findings of fault are compiled into collision reports, which are used in legal proceedings or for insurance purposes.

Collision report data is also captured in multiple systems, including ARJIS (which is primarily used by SDPD) and Crossroads (a newer system already used by TSW, and which SDPD is currently in the process of implementing).[17] In the future, both SDPD and TSW will use Crossroads as their primary tracking system for collision data. According to data from Crossroads, SDPD investigated approximately 9,800 traffic collisions in 2015, including nearly 700 collisions involving pedestrians.

SDPD's Traffic Division Also Leads the City's Pedestrian Safety Educational Efforts

In addition to its enforcement responsibilities, the Traffic Division leads and coordinates the City's efforts to educate the public about the importance of pedestrian safety. The intent of these educational efforts is to improve public awareness and reduce hazardous driver and pedestrian behaviors. These activities are also funded by the OTS grant, and SDPD utilizes community advocacy groups such as Circulate San Diego to assist with education and outreach.

Currently, funding for education is limited and these educational efforts do not constitute a Citywide campaign. Instead, SDPD and its partners conduct smaller scale educational efforts to target specific groups. For example, Traffic Division officers attend school assemblies and

[17] TSW implemented the Crossroads system in 2014. ARJIS and Crossroads each have advantages and limitations with regard to tracking pedestrian collisions. As a result, we used data from both systems for various analyses in this report. While there are some discrepancies in the data between systems, we determined that each system is reliable for identifying trends in the locations and causes of pedestrian collisions, injuries, and fatalities. For more information on the differences between these two systems, see the Objectives, Scope, and Methodology section of this report.

community events to conduct presentations on bicycle and pedestrian safety, and also provide traffic safety presentations at military bases. In addition, according to SDPD, it also provided traffic safety presentations at military bases and has coordinated School Safety Patrols for the past 80 years. Currently, this program involves approximately 2,000 Juvenile Service Team members (crossing guards) at 80 elementary schools in the City.

Summary of SDPD Budget, Planned Expenditures, and Performance Measures

SDPD's FY 2017 budget of approximately $443 million includes 2,644 FTE positions. This includes approximately $203 million and 1,225 FTE positions in the Patrol Operation Division, as well as $39 million and 248 FTE positions in the Traffic Division. It is important to note that each division has many other responsibilities in addition to traffic enforcement.

In addition, targeted enforcements and DUI checkpoints are funded by the OTS grant. For the period of October 2015 through September 2016, the grant amount was approximately $1 million, of which approximately $535,000 was planned to be expended on DUI operations and $80,000 on targeted enforcements for pedestrian and bicycle safety. Furthermore, SDPD planned to spend an increased portion of the OTS grant on educational efforts during the current grant year—approximately $175,000 was planned to be expended on education by the end of the grant period.

To monitor performance, SDPD tracks the number of traffic collisions and fatalities each year. According to SDPD, overall traffic fatalities have been significantly reduced since the 1990's, when the City experienced an average of 73 traffic fatalities per year. From 2011 to 2015, the City experienced an average of 48 traffic fatalities per year. This mirrors a nationwide trend of reductions in overall traffic fatalities. However, research indicates that this reduction is largely the result of reduced fatalities for vehicle occupants as vehicles have become safer. In contrast, as discussed above, the number of pedestrian fatalities in the City of San Diego has risen sharply in recent years.

Audit Results

Finding 1: The City Can Improve Pedestrian Safety by Using Available Data to Prioritize Its Limited Infrastructure Resources So Locations that Pose the Greatest Risk to Pedestrians are Updated First

As pedestrian collisions, injuries, and fatalities have significantly increased over the past several years, modernization of the City of San Diego's (City's) transportation infrastructure has become increasingly critical to improving the safety of pedestrians. Modern infrastructure, such as pedestrian countdown timers, high-visibility crosswalks, flashing beacons, and traffic calming measures have been shown to significantly reduce pedestrian collisions, injuries, and fatalities at the locations where they are installed.

However, the City has a large inventory of transportation infrastructure, which includes approximately 2,800 miles of streets and 1,600 signalized intersections, and has limited resources to address its well-documented infrastructure backlog. Therefore, in order for Vision Zero to be achieved, it is crucial that the City prioritize its efforts to improve pedestrian infrastructure by proactively targeting locations with the highest pedestrian collision rates first. Without infrastructure improvements to enhance safety, locations that have experienced high pedestrian collision rates and have outdated pedestrian infrastructure will likely continue to experience pedestrian collisions, injuries, and fatalities at high rates.

We found that existing data can be used to identify locations with the highest pedestrian collision rates, which should be proactively targeted for improvement. However, while the Transportation and Storm Water Department (TSW) has become increasingly proactive in addressing pedestrian safety infrastructure needs, we found that TSW could more effectively

utilize available data on pedestrian collisions to identify and improve locations where pedestrians have historically been at the highest risk. In addition, TSW has not established performance goals for improving locations with the highest pedestrian collision rates.

As a result, we found that:

- Many of the locations that have experienced the highest rates of pedestrian collisions, injuries, and fatalities have not been modernized to improve pedestrian safety and have generally continued to experience pedestrian collisions at high rates.
- At the same time, the City has invested pedestrian safety infrastructure resources in many other locations where pedestrians were at lower risk, including some locations where no pedestrian collisions have occurred in at least 15 years.

In order to ensure that the City's limited pedestrian safety infrastructure resources are spent improving locations where pedestrians are at the greatest risk, we recommend that TSW use available data and develop a methodology to identify locations where pedestrian collisions are occuring as soon as possible. In addition, we recommend that TSW establish goals for proactively surveying, programming, and funding pedestrian safety infrastructure improvements at a minimum number of these high-risk locations per year.

The City's Transportation Infrastructure Requires Modernization to Improve Pedestrian Safety

Like many other large cities, much of the City of San Diego's (City's) transportation network was developed during a time when design standards were primarily intended to maximize vehicle flow and did not always adequately consider the safety of pedestrians.

Over time, as newer technologies to increase pedestrian safety have become available and federal and state design standards have evolved to incorporate more extensive pedestrian safety measures, the City has taken steps to adapt its design standards and implement these improvements. For example, the

Transporation StormWater Department (TSW) recently updated the City's Pedestrian Crosswalk Guidelines to ensure that new or redesigned pedestrian crossings meet current industry standards.

Additionally, TSW has installed relatively low-cost improvements across the City, such as pedestrian countdown timers, high-visibility crosswalks and signage, audible pedestrian signals, street lighting, and flashing beacons. TSW has also installed more extensive safety improvements in certain locations, such as curb pop-outs and new sidewalks.

These modern technologies and designs help improve decisions made by both drivers and pedestrians, thereby reducing pedestrian collisions, injuries, and fatalities. Modernizing the design and features of the City's transportation network is critical to reducing pedestrian collisions, injuries, and fatalities. **Exhibit 7** shows examples of some of these modern improvements and highlights the ways in which they improve pedestrian safety.

Exhibit 7: Examples of Modern Pedestrian Safety Infrastructure Improvements

HIGH-VISIBILITY CROSSWALKS, SIGNAGE, AND FLASHING BEACONS

- High-visibility crosswalks, signage, and flashing beacons make it more likely that drivers will recognize when and where pedestrians have the right-of-way.
- These improvements reduce collisions caused by drivers failing to yield the right-of-way to pedestrians crossing the street.

A pedestrian uses a high-visibility crosswalk in the North Park neighborhood.

PEDESTRIAN COUNTDOWN TIMERS AND AUDIBLE PEDESTRIAN SIGNALS

- Pedestrian countdown timers let pedestrians know how much time they have left to cross an intersection.
- Audible pedestrian signals let visually impaired pedestrians know when it is safe to cross the street. Audible pedestrian signals also help non-visually impaired pedestrians quickly notice when they have the right-of-way to begin crossing.
- These improvements reduce collisions caused when pedestrians become stranded in the roadway when vehicles have the right-of-way by providing information to pedestrians that allows them to make better decisions about when to cross the street.

Pedestrians cross C Street in front of San Diego City Hall. This intersection has both pedestrian countdown timers and audible pedestrian signals.

Source: OCA, based on field surveys, the City's Pedestrian Crosswalk Guidelines, and information from the NHTSA.

Modern Infrastructure Design and Technology Significantly Improves Pedestrian Safety

Available research shows that modern pedestrian infrastructure, including the examples above, effectively reduce pedestrian collisions. The precise effect of these improvements in reducing pedestrian collisions is difficult to measure due to the wide range of environments in which they may be deployed.

For example, a study of pedestrian countdown timers in the City of Detroit found a 70 percent reduction in pedestrian collisions at intersections where timers were installed. However, the study found that many of the intersections studied had very poor pedestrian infrastructure prior to the installation of the timers, and that the effect would be less substantial at intersections that already comply with some modern design standards. A similar study of countdown timers in the City and County of San Francisco found a 25 percent reduction in pedestrian collisions, injuries, and fatalities where pedestrian countdown timers were installed.

In order to supplement available research and estimate whether the types of improvements that TSW has made have been effective, we surveyed 80 intersections across the City of San Diego that had generally experienced high collision rates from 2001to 2015. We recorded whether each intersection had received any of three specific improvements intended to improve pedestrian safety:

- Pedestrian countdown timers;
- Audible pedestrian signals; and
- High-visibility crosswalks.

These improvements can be placed at any signalized intersection, and have already been installed in many locations around the City.[18] We found that at the 48 intersections that had received at least one of the three improvements, the rate of pedestrian injuries and fatalities declined by 35 percent. At the 32 intersections that had not received any of these improvements, the rate of pedestrian injuries and fatalities remained virtually unchanged. While the results of our study and studies from other jurisdictions cannot be extrapolated, the implication is clear: These modern improvements can

[18] There are many types of improvements that could be made to improve safety. We selected these improvements because they could be placed at any signalized intersection, have the specific purpose of improving pedestrian safety, and have already been installed in many locations across the City. While nearly all of the intersections we surveyed were signalized (73 out of 80) some were not. At the intersections that were not signalized, we surveyed for high visibility crosswalks and flashing beacons.

substantially reduce pedestrian collisions, injuries, and fatalities at the locations where they are installed.[19]

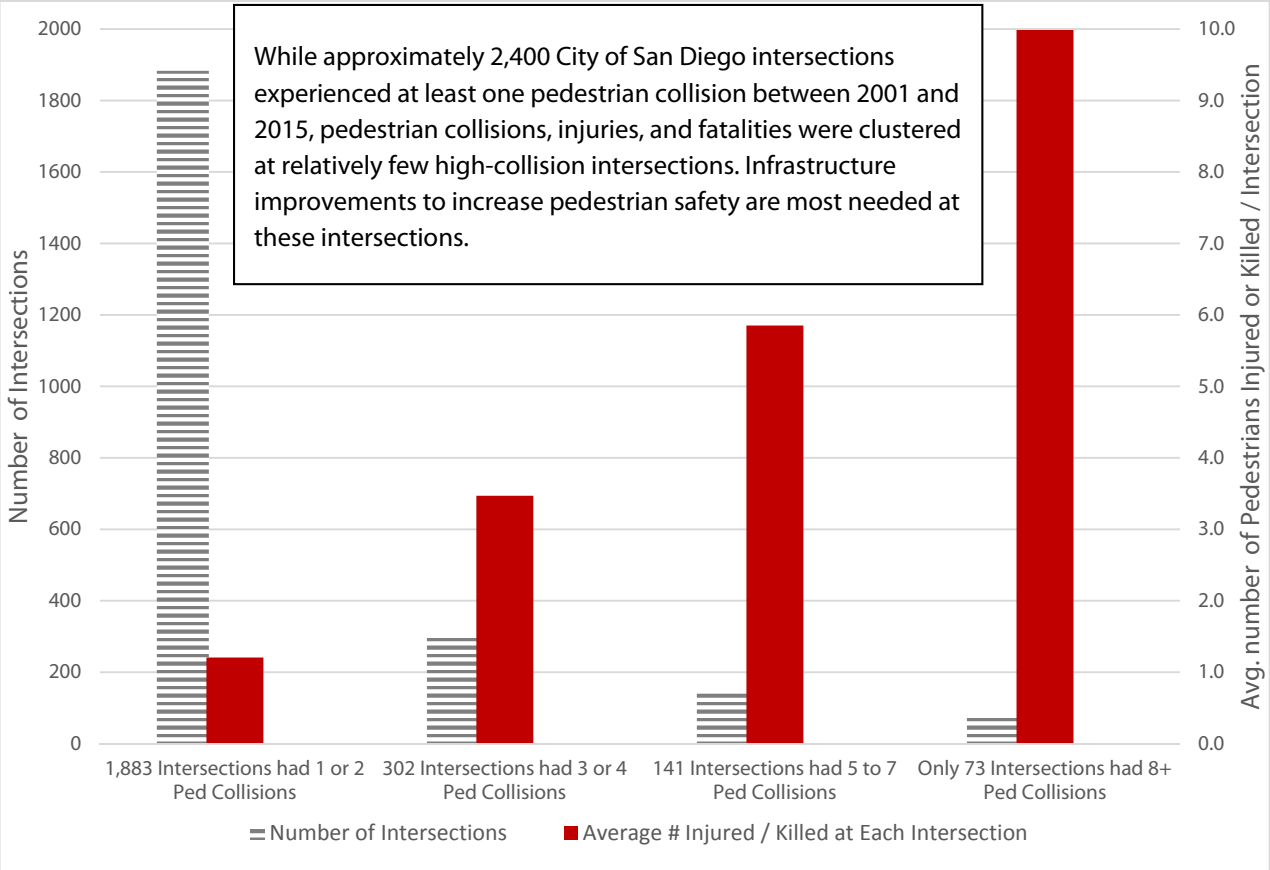
Existing Data Can Be Used to Identify Locations Where Infrastructure Improvements Will Have the Biggest Impact on Pedestrian Safety

While pedestrian collisions are geographically widespread, our multi-year analysis of available data shows that pedestrian collisions, injuries, and fatalities are highly concentrated at certain intersections. Improvements to pedestrian infrastructure would have the greatest impact on the safety of pedestrians if implemented at these locations.

More than 8,000 pedestrian collisions occurred on City streets between 2001 and 2015. While collisions occurred at many locations across the City, approximately 60 percent of pedestrian collisions occurred at intersections. In addition, while approximately 2,400 intersections experienced at least one pedestrian collision during that time, only 214 intersections (9 percent) experienced five or more pedestrian collisions, and only 73 intersections (3 percent) experienced eight or more pedestrian collisions. This demonstrates that while pedestrian collisions, injuries, and fatalities occur at many locations across the City, they are highly concentrated at certain intersections. These results are summarized in **Exhibit 8**.

[19] We performed this analysis using a judgmental sample of 80 intersections. These intersections were generally selected based on their high pedestrian injury and fatality rate, and did not constitute a statistical random sample. For each intersection, we noted whether it had received any of the three standard improvements listed above, and compared the intersection's pedestrian injury and fatality rate from 2001–2010 to its rate from 2011–2015. We did not utilize precise installation dates for each of the improvements because various improvements may have been installed at different times, and because precise installation dates were not readily available for all improvements. In addition, we did not evaluate the condition of each intersection prior to the installation of these improvements, and other improvements that we did not survey for may have been made at some intersections. These limitations prevent our results from being extrapolated. In addition, as mentioned above, other studies cannot be extrapolated because of the wide range of environments in which safety improvements can be deployed.

Exhibit 8: Pedestrian Collisions, Injuries, and Fatalities are Clustered at High-Collision Intersections in the City of San Diego



Source: OCA, based on data from TSW.

While improvements such as pedestrian countdown timers, high-visibility crosswalks, and other modern infrastructure can improve pedestrian safety at each location where they are implemented, they will have the greatest impact on safety when placed at locations that have experienced high pedestrian collision, injury, and fatality rates.

The City Has Limited Resources for Pedestrian Safety Infrastructure and Must Prioritize the Locations that Pose the Greatest Risk to Pedestrians

While modernizing infrastructure substantially reduces pedestrian collisions, injuries, and fatalities, the City lacks the resources to modernize all of its pedestrian infrastructure in the near term. Therefore, it is critical that the City utilize available data on pedestrian collisions to prioritize and proactively improve locations that have experienced the highest

pedestrian collision, injury, and fatality rates as soon as possible.

Like other major cities, the City of San Diego has a large infrastructure maintenance backlog. This backlog is well-documented, with recent estimates totaling approximately $4 billion in needed infrastructure maintenance. In order to prioritize available funding, asset-owning departments use Council Policy 800-14 as a tool to rank needs, and the City's many urgent infrastructure needs compete for limited available funding. [20] As a result, resources for pedestrian safety infrastructure are not sufficient to rapidly modernize all of the City's pedestrian infrastructure to improve safety. Although TSW received funding for a significant number of pedestrian safety-related infrastructure projects in the FY 2017 budget, it will be many years before all of the City's infrastructure can be upgraded. [21]

For example, TSW has a goal of installing pedestrian countdown timers at every signalized intersection in the City, and stated it has funds to program and install pedestrian countdown timers at a minimum of 50 intersections this year. However, the City has approximately 1,600 signalized intersections—meaning that, at the current pace, it will take decades to install pedestrian countdown timers at each location.[22] Therefore, it is critical for limited resources to be used at the highest-collision locations first, where they will have the greatest impact on safety.

Other cities with substantial pedestrian safety infrastructure needs have used data to identify and proactively improve the most hazardous locations for pedestrians. For example, as part

[20] Council Policy 800-14 guides the Mayor's Capital Improvement Program Review and Advisory Committee (CIPRAC) in its CIP deliberations. The goal of this policy is to establish a capital planning process that ultimately leads to policy decisions that optimize the use of available resources for projects competing from the same fund source or multiple fund sources.

[21] The Background section of this report includes more detail on the pedestrian infrastructure improvements TSW has planned for FY 2017.

[22] As discussed later in this section, TSW has already installed pedestrian countdown timers at approximately 200 signalized intersections across the City, leaving approximately 1,400 remaining to be improved.

of its Vision Zero efforts, New York City created a Pedestrian Safety Action Plan for each of its five boroughs. For each borough, New York City used multi-year data to identify the locations with the highest pedestrian collision rates, and established a goal of improving pedestrian safety infrastructure at 50 of those locations per year.[23]

TSW Has Not Established a Risk-Based Approach for Prioritizing Pedestrian Safety Infrastructure, and Intersections with the Highest Pedestrian Collision Rates Have Not Been Modernized to Improve Pedestrian Safety

While TSW has implemented numerous pedestrian safety infrastructure improvements in recent years, we found that TSW has not established measurable goals for improving the most hazardous locations, and has not ensured that these improvements are always made at locations where data shows pedestrian safety improvements are most needed. As a result, many intersections that experience the highest rates of pedestrian collisions, injuries, and fatalities have not been modernized, while at the same time, resources for pedestrian safety infrastructure have been invested at many other locations where pedestrian collisions are much less common.

TSW has used data to identify and proactively improve intersections with the highest traffic collision rates each year since 2010. However, the screening has focused on traffic collisions overall, not specifically pedestrian collisions. As a result, the screening almost always identifies intersections based on high vehicle collision rates, but very rarely identifes intersections based on pedestrian collision rates. In addition, the data screening methodology only uses one year of data to identify collision patterns, and only includes intersections that experienced six or more collisions (vehicle vs. vehicle, vehicle vs. bicycle, and vehicle vs. pedestrian) in that year. Although pedestrian collisions are much more likely to result in a serious injury or fatality than a vehicle vs. vehicle collision, they occur less frequently, making one year of data insufficient to identify a pedestrian collision pattern. In fact, according to data from TSW, no intersection experienced six pedestrian collisions in a single year between 2001 and 2015. As a result, this analysis

[23] On average, New York City's boroughs each have a somewhat larger number of signalized intersections than the City of San Diego (2,400 vs. 1,600) but significantly fewer miles of streets (1,200 miles vs 2,800 miles).

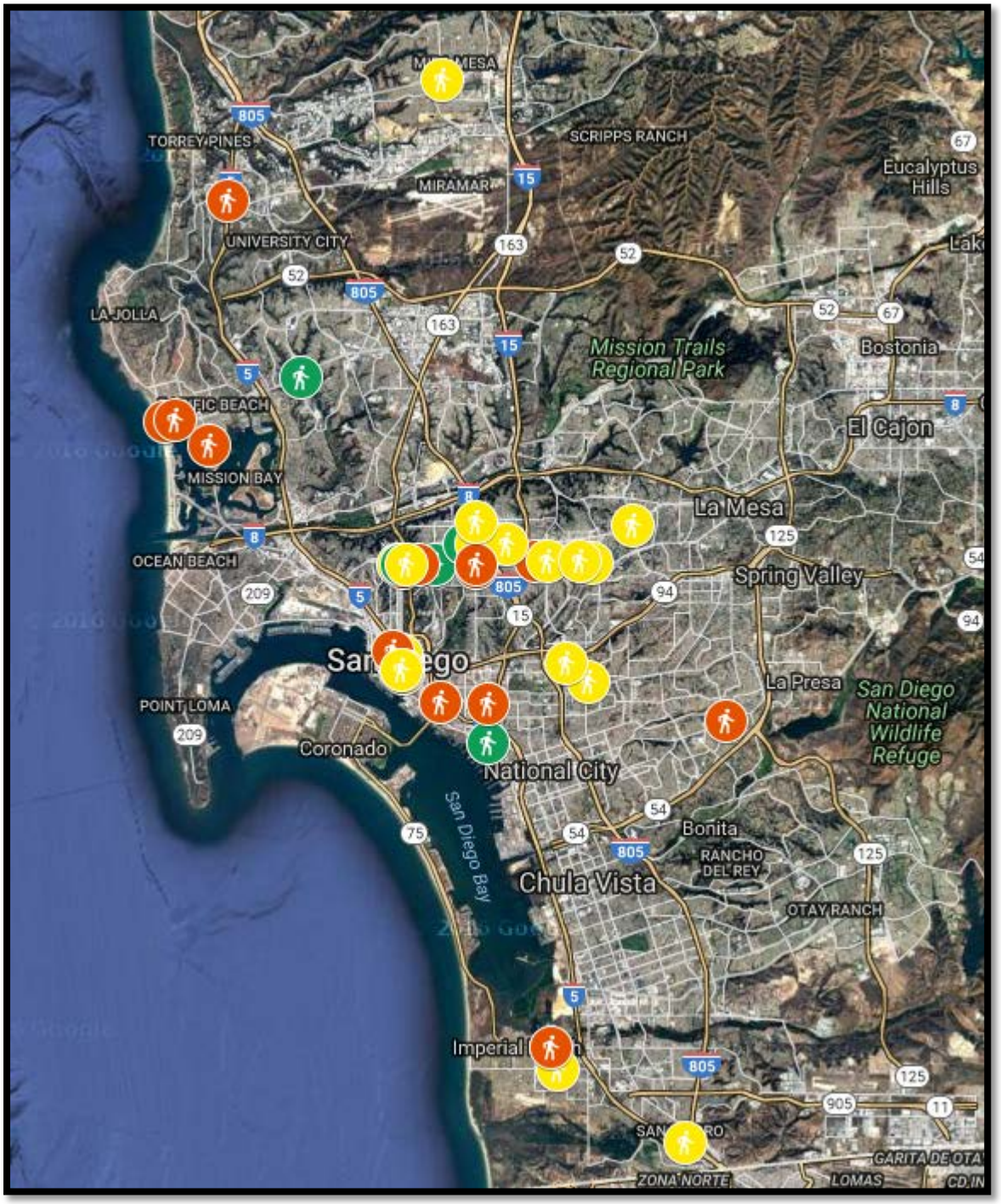
identifies few intersections that pose the greatest risk to pedestrians.

We found that by analyzing data over longer time periods, and by focusing exclusively on pedestrian collisions, the intersections that are most hazardous to pedestrians can be identified. For example, the City has approximately 1,600 signalized intersections, but our analysis showed only 43 of these intersections experienced seven or more pedestrian injuries and fatalities between 2001 and 2010. Therefore, in 2010, data analysis could have identified these high-collision intersections so they could have been prioritized for potential pedestrian safety infrastructure improvements.

However, we found that many of these intersections still lack basic, low-cost pedestrian safety infrastructure improvements that have already been installed in numerous other less hazardous locations around the City. In order to evaluate whether TSW has effectively identified and improved the intersections that have proven to be the most hazardous for pedestrians over time, we surveyed all 43 signalized intersections that experienced seven or more pedestrian injuries and fatalities between 2001 and 2010. We found that only 21 (49 percent) had received pedestrian countdown timers, 14 (33 percent) had received audible pedestrian signals, and 11 (26 percent) had received high-visibility crosswalks.

Of the 43 intersections, only 5 (12 percent) had received all three improvements, while 15 (35 percent) had not received any. The intersections that lacked the three improvements generally continued to experience pedestrian collisions, injuries, and fatalities at high rates from 2011 to 2015. These results are summarized in **Exhibit 9**, where intersections that received all three improvements we surveyed for are shown in green, intersections that had received one or two improvements are shown in yellow, and intersections that had not received any of the improvements we surveyed for are shown in red.

Exhibit 9: Many High-Collision Intersections Have Not Been Modernized to Improve Pedestrian Safety[1]



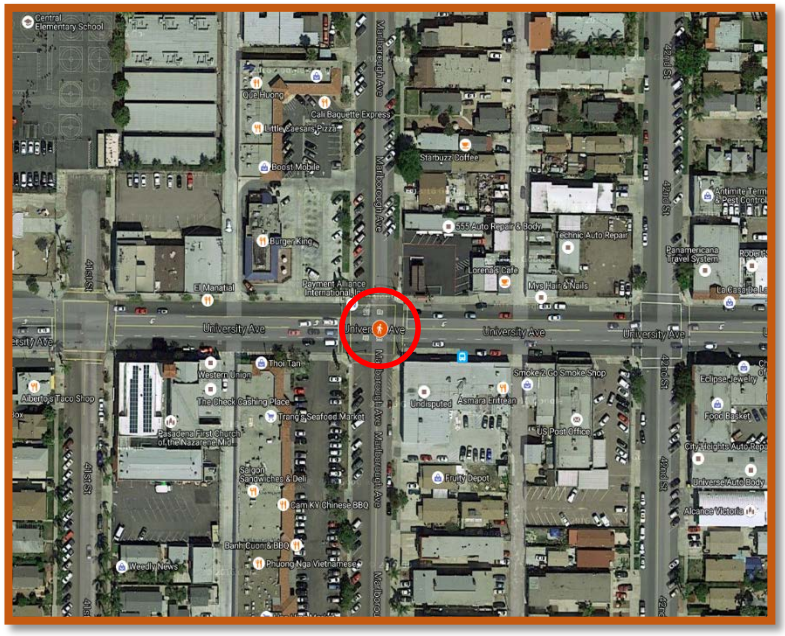
Source: OCA, based on analysis of Crossroads data and field survey observations. This map was created using Google Maps.

Note 1: Intersections that received all three improvements we surveyed for are shown in green, intersections that had received one or two improvements are shown in yellow, and intersections that had not received any of the improvements we surveyed for are shown in red.

For example, the intersection of University Avenue and Marlborough Avenue in the City Heights neighborhood experienced 10 pedestrian collisions that injured 12 people between 2001 and 2010. Only one other intersection experienced more pedestrian injuries during this time period. We found the intersection of University Avenue and Marlborough Avenue had not received any of the improvements we surveyed for, and, between 2011 and 2015, it continued to have one of the highest pedestrian collision rates in the City. Overall, between 2001 and 2015, this intersection experienced 16 pedestrian collisions, injuring 18 people. Only one other intersection in the City experienced more pedestrian collisions during this time period, and no intersection experienced more pedestrian injuries. **Exhibit 10** shows conditions at this intersection as of May 2016.

Exhibit 10: Case Study—University Avenue at Marlborough Avenue (City Heights)

Although the intersection of University Avenue and Marlborough Avenue has experienced a high pedestrian collision rate for many years, it has not received any of the three pedestrian safety improvements we surveyed for. Between 2001 and 2015, only one other intersection in the City experienced more pedestrian collisions, and no intersection experienced more pedestrian injuries.



The area around the intersection of University Avenue and Marlborough Avenue (indicated with a red pedestrian symbol) has several characteristics that likely increase pedestrian activity. The area has relatively high residential density and commercial activity, is located on a transit corridor, and is in close proximity to several schools.

Source: OCA, based on field survey observations, Google Maps, and Crossroads data.

At the same time, TSW has made improvements at many other locations that presented a lower risk to pedestrians. For example, of the 207 intersections where TSW plans to install or has installed pedestrian countdown timers since 2010, 101 intersections (49 percent) had experienced two or fewer pedestrian collisions in the preceding 10 years. This includes 38 intersections (18 percent) that had not experienced any pedestrian collisions at all since at least the year 2000.

According to TSW, some of the locations were selected for a variety of reasons, including requests from the public or another department; funding restrictions based on the source of funds (such as Community Development Block Grants); the existence of a public works project under construction (making it more efficient to install the improvements at that time); or, TSW engineering staff were trying to cover corridors or areas where they felt there were significant volumes of pedestrians.

While these are all considerations that TSW must take into account, pedestrian collisions, injuries, and fatalities have risen significantly, and the purpose of these improvements is specifically to improve safety. Therefore, we recommend that TSW act quickly to develop a methodology to identify and improve the locations with the highest collision rates first—which is where infrastructure upgrades will have the greatest impact on pedestrian safety.

Utilizing existing collision data, TSW currently has the expertise and resources to develop a basic methodology to identify locations that have experienced the highest pedestrian collision rates. TSW plans to initiate this analysis immediately and begin improving these locations as soon as possible. However, TSW noted that in the long run, a more robust methodology that takes into account additional factors, such as vehicle speed limits at each location (higher vehicle speeds result in an increased likelihood and severity of pedestrian collisions), would be ideal. TSW has applied for a grant to fund

this analysis, which would likely require the services of an engineering consultant.

In order to address the issues identified above, ensure that pedestrian safety infrastructure needs are effectively identified and prioritized, and increase safety for pedestrians as quickly as possible, we recommend:

Recommendation #1

The Transportation and Storm Water Department should use available data to develop a methodology for identifying the locations that pose the greatest risk to pedestrians. This methodology should utilize at least five years of pedestrian collision data, and incorporate factors such as:

- **The number of pedestrian collisions at each location; and**
- **The severity of pedestrian collisions (injury, severe injury, fatality). (Priority 1)**

Recommendation #2

The Transportation and Storm Water Department (TSW) should establish a goal of proactively evaluating a minimum number of the highest-pedestrian collision locations each year, based on the methodology developed as part of Recommendation #1, and should program and request funding for warranted pedestrian safety infrastructure improvements at each location in accordance with Council Policy 800-14. Performance towards meeting this goal should be publicly reported on an annual basis, such as on the City's Open Data Portal or a future Vision Zero San Diego website (see Recommendation #18).

At each high-pedestrian collision location, TSW should identify and program all improvements, including those warranted under the Pedestrian Crosswalk Guidelines, as well as other improvements that are necessary to increase pedestrian safety, based on TSW's professional judgment.

If any of the warranted improvements cannot be funded in a given year, these improvements should be placed on the

	Transportation Unfunded Needs List and considered for funding in future years in accordance with Council Policy 800-14. (Priority 1)
Recommendation #3	**The Transportation and Storm Water Department (TSW) should establish a written policy to ensure that, in the event that TSW receives funding for one specific type of pedestrian safety infrastructure improvement (such as pedestrian countdown timers), TSW should utilize the analysis from the methodology developed as part of Recommendation #1, in conjunction with Council Policy 800-14, to ensure that these improvements are placed at the high-pedestrian collision locations where they will have the greatest impact on pedestrian safety. (Priority 1)**
Recommendation #4	**In the event that the Transportation and Storm Water Department (TSW) is not successful in receiving grant funding to develop a more robust methodology for identifying high-collision locations that takes into account additional factors such as vehicle speeds, TSW should seek other opportunities to fund the development of this methodology. (Priority 2)**

Finding 2: The City Can Improve Pedestrian Safety by Increasing Traffic Enforcement's Focus on Specific Violations That Pose the Greatest Risk to Pedestrians

Although engineering improvements can make intersections and corridors more structurally safe, if drivers and pedestrians do not follow the rules of the road, pedestrian collisions, injuries, and fatalities will continue to occur. Furthermore, while some engineering improvements may take years to implement, enforcement and education can have a more immediate impact on pedestrian safety by increasing compliance with traffic laws and positively influencing driver and pedestrian behavior.

Pedestrian injuries and fatalities have significantly increased in recent years in the City of San Diego (City), with pedestrian fatalities exceeding fatalities of all other roadway users in 2015. Therefore, it is essential that the San Diego Police Department (SDPD) maximize the effectiveness of its limited enforcement resources by utilizing available data on the causes of pedestrian collisions to drive its enforcement priorities.

However, we found that SDPD could better utilize available data on pedestrian collisions, injuries, and fatalities. Specifically, we found:

- Day-to-day enforcement of certain driver violations that are most dangerous to pedestrians could likely be increased.[24] For example, although drivers failing to yield the right-of-way to pedestrians caused approximately one in five pedestrian collisions in the City from 2013 to 2015, this violation accounted for only 0.34 percent of the traffic citations issued by SDPD during the same time period.

[24] As discussed later in this section of the report, enforcement for pedestrian safety is typically focused on drivers rather than pedestrians. Because pedestrians are more vulnerable road users than drivers, they are typically not the primary focus of enforcement efforts. In addition, according to SDPD, it is typically harder for officers to cite pedestrians because they are unlikely to commit violations when an officer is present. Instead of enforcement, other cities are using warnings and education to influence pedestrian behavior. For these reasons, we focused our analysis and recommendations on driver violations.

- Other cities state they have committed to focusing on certain driver violations that are most dangerous to pedestrians. Although SDPD claims to already focus on some of these violations, the data shows that the percentage of citations issued for traffic violations that result in pedestrian collisions, injuries, and fatalities is low compared to other violations that are generally less hazardous. This indicates that SDPD's current efforts, which do not include measurable enforcement goals, may not be sufficient to increase SDPD's focus on certain more dangerous traffic violations.
- Officers do not currently receive specific guidance or training on how to focus enforcement according to the City's pedestrian safety goals.

As a result, the City's current enforcement efforts may not be as effective as possible at improving driver behavior. Therefore, in order to improve pedestrian safety and help the City achieve its Vision Zero goals, we recommend that SDPD commit to focusing on certain driver violations that are most likely to cause pedestrian collisions, injuries, and fatalities; set a publicly reported measurable goal to increase enforcement of these traffic violations by focusing on them during day-to-day enforcement; and provide officers with training and guidance on how to do so.

SDPD Could Improve Pedestrian Safety by Utilizing Data to Drive Enforcement Priorities

We found that the San Diego Police Department (SDPD) could better utilize available data to identify and increase enforcement of the driver violations that are most likely to cause harm to pedestrians during day-to-day enforcement. SDPD collects and tracks data on the primary cause of each pedestrian collision that results in a pedestrian fatality or serious injury. We analyzed this data and found that a relatively small number of driver violations are responsible for causing a significant portion of pedestrian fatalities and serious injuries. However, SDPD has not utilized this data to establish measurable goals to emphasize enforcement of these violations. As a result, the percentage of citations issued for the driver violations that pose the greatest risk to pedestrian safety

is relatively low, at a time when pedestrian fatalities have been significantly increasing.

Because SDPD Has Limited Resources for Traffic Enforcement, It Should Use Available Data to Identify the Most Dangerous Driver Violations for Pedestrians, and Should Focus Enforcement on Those Violations

The City's traffic enforcement is provided by SDPD. Both SDPD patrol officers and some officers in SDPD's Traffic Division conduct enforcement of traffic laws on a day-to-day basis. However, SDPD as a whole has a limited number of officers compared to the law enforcement agencies of other large cities, as shown in **Exhibit 11**.

Exhibit 11: Comparison of Officers per 100,000 Residents for Selected Large Jurisdictions

City	Officers per 100,000 Residents
Washington D.C.	613
San Francisco	239
Denver	221
San Diego	**138**

Source: *City Services Benchmarking: Police Staffing* 2015 report by the City and County of San Francisco's Office of the Controller, City Services Auditor, City Performance.

Therefore, it is important for SDPD to use its limited resources for traffic enforcement strategically to have the most impact. Consequently, to improve pedestrian safety, SDPD can make the best use of its current resources by identifying and increasing enforcement of the driver violations that are most dangerous to pedestrians during day-to-day enforcement.

Existing Data Can Be Used to Identify the Driver Violations that Cause the Most Harm to Pedestrians

Existing data can be used to identify the types of violations that are most likely to cause harm to pedestrians. We analyzed SDPD's pedestrian collision and traffic citation data from 2013 to 2015 and found that, although SDPD issued citations for more than 350 different types of vehicle code violations, only 18 (5 percent) of these types of vehicle code violations were the primary cause of a pedestrian fatality or serious injury during

that time period.[25] Furthermore, only five types of driver violations were the primary cause of 38 percent of all pedestrian fatalities and serious injuries from 2013 to 2015.

SDPD's Enforcement of the Driver Violations that Caused a Large Proportion of Pedestrian Fatalities and Serious Injuries Could Likely Be Increased

SDPD's data shows that many pedestrian fatalities and serious injuries are caused by a relatively small number of driver violations. However, we found that SDPD's traffic enforcement efforts may not be focused on these types of violations. While SDPD acknowledges the need to do further data analysis to identify the leading causes of collisions and fatalities in the City, the City's Vision Zero Strategic Plan states that SDPD has already been targeting enforcement on certain common violations that cause collisions, including some that are common causes of pedestrian collisions.[26] However, SDPD has not established a measurable goal to focus enforcement on these violations. As a result, our analysis of SDPD's citation data indicates that the percentage of citations issued by SDPD for some driver violations that are common causes of pedestrian collisions, injuries, and fatalities, remains low compared to other traffic citations.

For example, one specific violation that SDPD stated it is targeting—failing to yield the right-of-way to pedestrians—made up a very small percentage of SDPD's traffic citations. This violation is summarized in **Exhibit 12**. Our analysis shows that drivers failing to yield the right-of-way to pedestrians was the primary cause of approximately one in five pedestrian collisions in the City between 2013 and 2015.[27] However, as summarized in **Exhibit 13**, citations for this violation made up only 0.34 percent of the total citations SDPD issued during that time period.[28] Thus, on average, SDPD issued approximately

[25] Due to the variations in the ways that data was coded, it is possible that there were less than 18 types of violations that were the primary cause of a pedestrian fatality or serious injury during the time period.

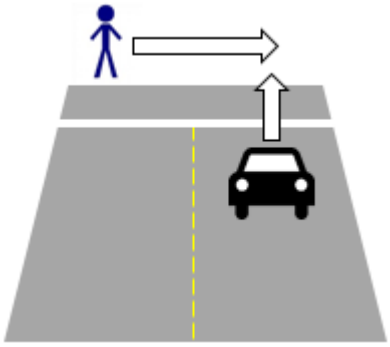
[26] According to the City's Vision Zero Strategic Plan, SDPD is targeting enforcement of signal violations, improper turns, failure to yield the right-of-way to pedestrians, texting while driving, and speeding.

[27] Drivers failing to yield the right-of-way to pedestrians caused 361 pedestrian collisions, which resulted in 354 pedestrian injuries (including 31 pedestrian serious injuries), and 9 pedestrian fatalities from 2013 to 2015.

[28] SDPD issued 328,425 traffic citations from 2013 to 2015; of these, 1,114 traffic citations (0.34 percent) were for drivers failing to yield the right-of-way to pedestrians. Because traffic citations are recorded under the primary

one citation per day for this particular violation. According to the National Highway Traffic Safety Administration (NHTSA), failing to yield the right-of-way to pedestrians is a common violation committed by drivers. For example, a study conducted in Gainesville, Florida, found that drivers yielded the right-of-way to pedestrians only approximately half of the time. Because we found that this violation caused so many of the City's pedestrian collisions, injuries, and fatalities, enforcement of this violation can likely be increased significantly from the current rate of one citation per day.

Exhibit 12: Driver Failing to Yield the Right-of-Way to a Pedestrian (21950(a) VC)

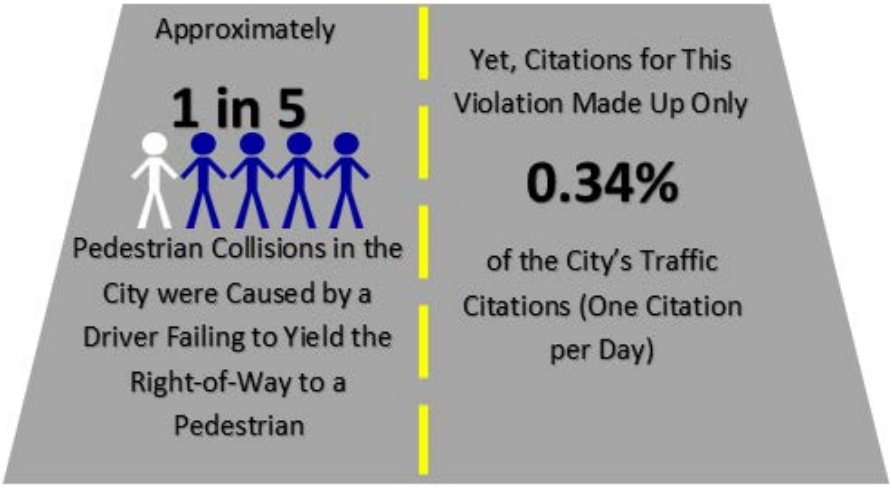


A driver shall yield the right-of-way to a pedestrian crossing the road within any marked or unmarked crosswalk at an intersection.

Source: OCA, based on California Vehicle Code Section 21950(a).

violation a person is cited for, it is possible that additional citations were issued by SDPD for drivers failing to yield the right-of-way to pedestrians but were not included in the data because the driver was also cited for a different primary violation at the same time. Similarly, because SDPD's traffic collision data only tracks the primary collision factor, it is possible that this violation was a contributing, but not primary, collision factor in additional pedestrian collisions.

Exhibit 13: From 2013 to 2015, SDPD Issued an Average of One Citation per Day for the Primary Cause of 1 in 5 Pedestrian Collisions



Source: OCA, based on SDPD's data on pedestrian collisions and traffic citations issued between 2013 and 2015.

In addition, as shown in **Exhibit 14**, we found that the five types of driver violations that were responsible for approximately 38 percent of pedestrian fatalities and serious injuries from 2013 to 2015, made up only approximately 3 percent of all traffic citations issued by SDPD during that time period.[29] In contrast, citations for violations that are generally less hazardous (i.e. equipment violations, registration violations, and other non-hazardous violations) made up approximately 22 percent of all citations. SDPD stated that the percentage of citations issued for equipment violations is higher because there are many more vehicles on the roads than pedestrians, thus presenting dozens of potential vehicle equipment violations, whereas there may not be as many potential violations involving pedestrians. For example, failing to yield the right-of-way to a pedestrian requires a pedestrian to be present for a citation to be issued. Thus, SDPD stated that this particular violation can be hard to cite. However, the fact that only 3 percent of traffic citations were issued for the top five types of driver violations that were responsible for pedestrian fatalities and serious injuries, indicates that

[29] We reviewed the primary collision factors for all 203 pedestrian collisions that resulted in a pedestrian fatality or serious injury from 2013 to 2015.

enforcement of these violations could likely be increased. Furthermore, only two of these five types of driver violations require a pedestrian to be present for a citation to be issued. As shown in **Exhibit 14**, unsafe backing/starting and improper turning make up a very small percentage of traffic citations, even though pedestrians do not need to be present for SDPD to issue citations for these violations. Therefore, although we acknowledge that some of these driver violations may be cited less often due to a lack of a pedestrian being present, it appears that SDPD may be able to increase its enforcement of these types of violations.

Exhibit 14: Enforcement of the Five Types of Driver Violations that Caused a Large Proportion of Pedestrian Fatalities and Serious Injuries between 2013 and 2015 was Low

Top Five Types of Driver Violations that Resulted in a Pedestrian Fatality or Serious Injury (2013 to 2015)				
Violation	California Vehicle Code Section	% of Fatalities & Serious Injuries	% of Total Traffic Citations Issued by SDPD	Number of Citations Issued
Driver Failure to Yield the Right-of-Way to Pedestrian	21950(a)	19.21%	0.34%	1,114
Failure of Driver to Exercise Due Care for Safety of Pedestrian	21954(b)	5.91%	0.00%	3
Unsafe Backing/Starting	22106	5.91%	0.04%	121
Improper Turn	22107	4.43%	0.44%	1,434
Violation Signals/Sign	21453(a)	2.46%	2.32%	7,611
	Total	37.93%	3.14%	10,283

Source: OCA, based on SDPD's data for pedestrian fatalities and serious injuries, and traffic citations issued by SDPD between 2013 and 2015.

Although Pedestrians Were at Fault for Pedestrian Fatalities and Serious Injuries Approximately Half of the Time, Enforcement Should be Focused on Drivers

As shown in **Exhibit 15**, pedestrians were at fault for approximately half of the pedestrian fatalities and serious injuries that occurred between 2013 and 2015. However, we focused our review on SDPD's enforcement of driver violations rather than pedestrian violations for various reasons:

- Pedestrians are more vulnerable road users than drivers.
- According to SDPD, pedestrians rarely commit these violations in the presence of a police officer.
- Drivers are licensed road users whereas pedestrians are not licensed. Therefore drivers should be held to a higher standard.

- The National Highway Traffic Safety Administration's *Pedestrian Enforcement Operations: A How-To Guide* (NHTSA How-To Guide) states that pedestrians should not be the focus of enforcement efforts.

Exhibit 15: Pedestrians and Drivers were Both at Fault for Pedestrian Fatalities and Serious Injuries that Occurred between 2013 and 2015

Primary Collision Factors for Pedestrian Fatalities and Serious Injuries (2013–2015)			
Pedestrian at Fault		**Driver at Fault**	
Some of the Most Common Violations: • Pedestrian Enter Path Suddenly • Pedestrian Failure to Yield Right-of-Way to Vehicle • Crossing Between Controlled Intersections • Signal Violation		**Some of the Most Common Violations:** • Failure to Yield Right-of-Way to Pedestrian • Failure of Driver to Exercise Due Care for Safety of Pedestrian • Unsafe Backing/Starting • Improper Turn	
Percent of Pedestrian Fatalities and Serious Injuries Due to Pedestrian at Fault:	53%*	Percent of Pedestrian Fatalities and Serious Injuries Due to Driver at Fault:	44%*

*These percentages do not add up to 100% because the primary collision factor was undetermined for 3% of pedestrian fatalities and serious injuries.

Source: OCA, based on SDPD's data for pedestrian fatalities and serious injuries that occurred between 2013 and 2015.

In our opinion, issuing more citations to pedestrians may not be the best approach for improving pedestrian safety. Instead, as further dicussed in Finding 3 and Finding 4, the use of warnings and education may be more effective at influencing pedestrian behavior. In fact, other cities have focused their enforcement efforts on drivers rather than on pedestrians. In addition, the NHTSA How-To Guide explains why pedestrians should not be the focus of enforcement efforts. Specifically, the NHTSA How-To Guide states:

"To reinforce overall norms related to traffic safety, officers should cite egregious pedestrian violations that they observe during the course of a pedestrian safety operation. However, because pedestrians are the more vulnerable road users, they are typically not the primary focus of enforcement efforts. As licensed roadway users, drivers should also be held to a higher standard than pedestrians sharing the roadway."

SDPD Should Use a Combination of Data Analysis and Expertise to Determine the Specific Driver Violations on Which to Focus Enforcement

SDPD noted that some of the primary collision factors for pedestrian collisions may occur less frequently. For example, it is not common for a driver to drive onto a sidewalk, but this violation is obviously very dangerous to pedestrians when it does happen.[30] So, while officers should cite this violation whenever they witness it, it is not reasonable to expect this violation to make up a substantial percentage of citations. Therefore, we do not recommend that the SDPD set goals to increase enforcement of uncommon violations, but instead to set goals to increase its focus on enforcing common violations that can result in harm to pedestrians.

Furthermore, paying special attention to certain violations that are most dangerous to pedestrians does not preclude SDPD from enforcing other dangerous violations. Ideally, SDPD would increase enforcement of all violations that could potentially result in a pedestrian collision. However, as mentioned earlier, SDPD's traffic enforcement resources are limited. As a result, SDPD can make the best use of its current resources by identifying and committing to pay special attention to certain common violations that pose great risk to pedestrian safety. Given that over one-fifth of traffic citations issued over the past three years were for equipment, registration, and other non-hazardous violations, it appears that SDPD can increase the

[30] This violation was the primary cause of 30 of the 1,062 pedestrian collisions that occurred between 2013 and 2015.

proportion of its enforcement of hazardous violations related to pedestrian safety relative to violations that are generally less hazardous.

We acknowledge that using data analysis to identify the top causes of pedestrian collisions, injuries, and fatalities may not be sufficient on its own to determine the specific violations on which SDPD should focus enforcement. For example, although speeding did not show up in SDPD's data as a primary collision factor for pedestrian fatalities and serious injuries, it can be a contributing factor. The speed at which a car is traveling strongly influences the probability of a pedestrian surviving a collision. Thus, to improve pedestrian safety, speeding should be a focus of enforcement efforts in addition to other violations that more directly cause pedestrian collisions. Therefore, SDPD should use a combination of data analysis and expertise to determine the violations that officers should pay special attention to during day-to-day enforcement.

Other Cities Have Committed to Focusing Enforcement on Certain Driver Violations That Are Most Dangerous to Pedestrians

Other cities have started to focus enforcement on certain driver violations that cause pedestrian collisions. Both New York City and the City and County of San Francisco (San Francisco) have increased enforcement of certain violations that are commonly associated with pedestrian fatalities and serious injuries by changing priorities and using data-driven enforcement strategies without using additional resources. For example, San Francisco adopted "Focus on the Five," a public commitment by the San Francisco Police Department (SFPD) to focus on the five most dangerous violations that result in pedestrian collisions according to San Francisco's collision data.[31] SFPD set a measurable goal of increasing citations for "Focus on the Five" violations as a proportion of all traffic citations. Specifically, the goal of "Focus on the Five" is for 50 percent of SFPD's traffic citations to be issued for those five violations.[32]

[31] The "Focus on the Five" violations are running red lights, running stop signs, speeding, failing to yield to pedestrians, and improper turning.

[32] San Francisco's "Focus on the Five" initiative is not a quota; it is a goal of increasing the percentage of citations issued for certain violations by prioritizing the enforcement of certain violations over less dangerous violations.

Similarly, the New York City Police Department (NYPD) committed to increasing enforcement of violations that are most dangerous to pedestrians.[33]

By focusing enforcement on the most hazardous violations and setting a measurable goal, SFPD reported it increased enforcement of "Focus on the Five" violations to 34 percent of all traffic citations in 2015, up from 24 percent the previous year, while the total number of traffic citations issued decreased slightly.[34] In addition, SFPD reported it increased the percentage of traffic citations issued for drivers failing to yield the right-of-way to pedestrians from 3.45 percent in 2014 to 6.23 percent in 2015. As mentioned earlier in this report, this type of violation was the primary collision factor in approximately one in five pedestrian collisions in the City of San Diego from 2013 to 2015, but only accounted for 0.34 percent of the traffic citations issued by SDPD during that time period. Although we acknowledge that San Francisco may have more pedestrians and thus more opportunities for SFPD to cite drivers for this violation, the fact that SFPD was able to nearly double the percentage of citations issued for this violation demonstrates that a commitment to targeting certain violations can result in stronger enforcement. We believe that with the adoption of Vision Zero, it is likely possible for SDPD to similarly increase citations for certain hazardous violations without necessarily impacting overall traffic enforcement levels or requiring additional resources. Although SDPD states that it does target certain traffic violations, including some related to pedestrian safety, SDPD does not currently have documented traffic enforcement priorities or measurable performance goals.

Although NYPD committed to increasing enforcement of certain traffic violations that are most dangerous to

[33] NYPD has committed to increasing enforcement of speeding, failing to yield to pedestrians, signal violations, improper turns/disobeying signage, and phoning/texting while driving.

[34] SFPD issued 123,698 traffic citations in 2015, slightly fewer than the 127,861 issued in 2014. So far in 2016, SFPD has continued to increase the percentage of citations issued for "Focus on the Five" violations while overall citation numbers have decreased more significantly. Anecdotal reports conflict on whether this reduction may be driven by staffing shortages and vacancies, rather than prioritization of "Focus on the Five" violations.

pedestrians, unlike SFPD, NYPD did not set a measurable goal for doing so. In addition, NYPD has recently received criticism for not consistently focusing enforcement on these violations across all precincts. As mentioned earlier in this report, SDPD informed the Vision Zero Task Force that it is already focusing on certain violations that impact pedestrian safety, but we found that the citation data does not demonstrate that SDPD has effectively focused enforcement on driver violations that are most dangerous to pedestrians. We therefore stress the importance of SDPD not only committing to focusing on certain violations, but also setting a measurable goal to ensure accountability.

SDPD indicated that it is concerned that the public may perceive officers' focus on certain violations as discriminatory or unfair. However, SDPD could avoid claims of bias or discrimination if it publicizes that officers are paying special attention to certain violations based on data that shows those violations pose the greatest threat to pedestrian safety. In fact, San Francisco stated that, because it used data to determine which violations to focus on, it has been able to avoid claims of bias or discrimination.

In order to curb driver behaviors that place pedestrians at the greatest risk, increase public awareness, and avoid claims of bias or discrimination, we recommend:

Recommendation #5

The San Diego Police Department (SDPD) should set a measurable goal to increase enforcement of the driver violations that are most likely to result in pedestrian injuries and fatalities in the City. This goal should be included in the City's Vision Zero Strategic Plan. To ensure that the enhanced enforcement of certain traffic violations is as effective as possible at improving pedestrian safety, the City should:

- **Use a combination of data analysis and SDPD's expertise to determine the violations that SDPD should prioritize.**

- **Use a method to ensure the public is aware of the violations being targeted.**
- **Publicly report SDPD's performance towards meeting its measurable goal on at least an annual basis. (Priority 1)**

Additional Training and Guidance Would Help Ensure Officers Know How to Focus Enforcement According to the City's Goals

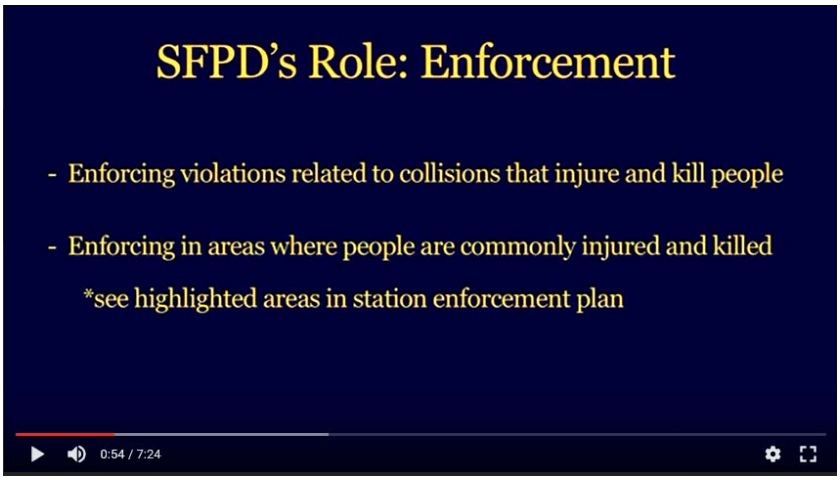
In order for SDPD to improve compliance with traffic laws that impact pedestrian safety, it is important for officers to properly focus enforcement according to the City's goals. Thus, officers need to have sufficient training and guidance, and department leadership must hold officers and their supervisors accountable for adhering to prioritization policies.

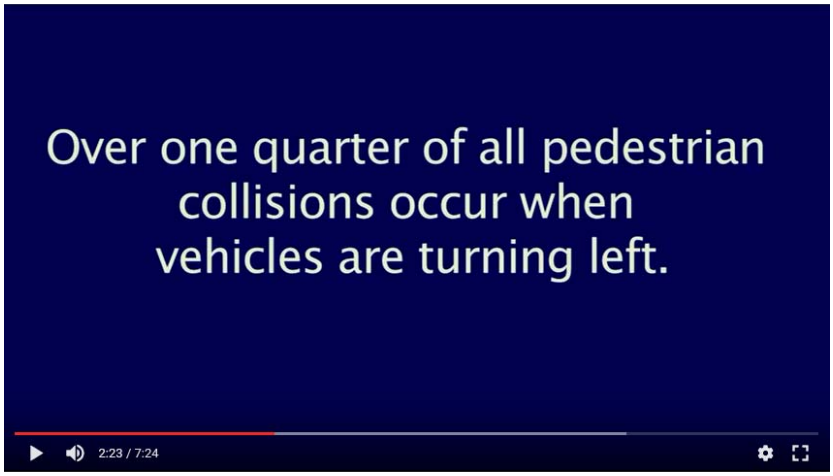
Other Vision Zero cities are already providing additional guidance and training to officers on pedestrian safety and the violations on which they are focusing enforcement. Both New York City and San Francisco stated that they have provided their officers and supervisors with additional training and/or guidance on pedestrian safety and the violations on which their city is focusing enforcement.

For example, SFPD stated that it required each police officer to watch a video on "Focus on the Five" and the importance of "Focus on the Five" is covered in monthly staff meetings. Similarly, NYPD stated that it increased training for officers specific to the violations that NYPD committed to focus on as part of Vision Zero, informs the Police Academy training sergeants of Vision Zero and what specific violations NYPD is focusing on, and shows officers films that demonstrate the value and lifesaving effects of issuing citations for hazardous traffic violations. In addition, according to the United States Government Accountability Office's (GAO) 2015 report, *Pedestrians and Cyclists: Cities, States, and DOT Are Implementing Actions to Improve Safety*, several law enforcement agencies the GAO interviewed stated that their officers receive specific training on pedestrian safety.

Screenshots from the "Focus on the Five" video that San Francisco officers are required to watch as part of their training are shown in **Exhibit 16.**

Exhibit 16: Screenshots of SFPD's "Focus on the Five" Training Video





Source: San Francisco Police Department training video for Vision Zero.

However, SDPD stated that it does not currently provide guidance or additional training to officers on pedestrian safety and how to focus enforcement according to the City's goals. Although SDPD Traffic Division is currently working on creating a training video for officers on traffic laws related to bike safety, officers do not currently receive any special training or guidance on traffic violations that are most dangerous to pedestrians. As a result, officers may not be as focused on the

issue of pedestrian safety as they may be with additional training and guidance. This likely also contributes to SDPD's relatively low percentage of citations issued for the driver violations that are most dangerous to pedestrians.

In order to ensure that officers are aware of enforcement priorities and are held accountable for meeting prioritization goals, we recommend:

Recommendation #6

The San Diego Police Department should, at least on an annual basis, provide additional training and guidance (for example, in the form of videos) to its officers on the traffic violations that are most dangerous to pedestrians and how to focus enforcement on those violations. (Priority 2)

Finding 3: The City Can Improve Pedestrian Safety by Using a Data-Driven Approach to Target Pedestrian Safety Enforcement Operations on Specific Locations and Traffic Violations That Pose the Greatest Risk to Pedestrians, and by Coordinating Enforcement with Education

In addition to day-to-day traffic enforcement, the San Diego Police Department's Traffic Division (Traffic Division) conducts grant-funded targeted pedestrian safety enforcement operations. Because these enforcement operations take place a limited number of times per year and make up a very small portion of the City's traffic enforcement efforts, it is important for these enforcements to be planned well so that they are as effective as possible at improving pedestrian safety. Therefore, the Traffic Division should conduct these targeted pedestrian safety enforcement operations where they are most needed and with specific attention to the traffic violations that tend to cause pedestrian collisions in those locations. In addition, these targeted pedestrian safety enforcement operations provide an opportunity to increase awareness of safe pedestrian and driver behavior and earn media coverage for the City's Vision Zero mission.

However, we found that the Traffic Division does not generally use data to determine where to conduct these enforcements or what specific violations on which to focus enforement. In addition, the Traffic Division has not combined these enforcements with efforts to provide education on pedestrian safety to drivers and pedestrians or used them to maximize the visibility of the City's efforts to improve pedestrian safety. Specifically, we found that:

- While the Traffic Division periodically conducts targeted enforcements for pedestrian safety, these targeted enforcements may not be focused at specific locations where additional enforcement is most needed and on the

specific violations that have caused pedestrian collisions in those locations.

- Targeted enforcements do not have an educational component, are not made highly visible to enhance impact on driver and pedestrian behavior, and are not coordinated with efforts to earn media coverage and reach the widest possible audience.

As a result, the Traffic Division's targeted pedestrian safety enforcement operations may not be as effective as possible and may not be reaching enough people to make a significant impact on pedestrian safety. Therefore, we recommend that the Traffic Division adopt practices that have been effectively used by other Vision Zero cities. Specifically, we recommend the Traffic Division conduct targeted enforcement efforts at specific locations with high rates of pedestrian collisions; focus on the violations most likely to cause pedestrian collisions in those locations; utilize enforcement efforts as an opportunity to educate residents and earn media exposure for the City's efforts to improve pedestrian safety; and ensure that training and guidance to officers emphasizes that pedestrian safety enforcement operations are about saving lives and positively influencing behavior, not about issuing as many citations as possible.

The Traffic Division Could Maximize the Impact of Its Targeted Pedestrian Safety Enforcements by Using Data to Determine the Locations and Violations on Which the Enforcements Should be Focused

In addition to using data to identify the violations that officers should pay special attention to during day-to-day traffic enforcement efforts, we also found that the Traffic Division can improve its use of data when performing targeted enforcements—special grant-funded enforcement operations that are conducted in addition to day-to-day enforcement activities. Specifically, we found that the Traffic Division can use data to select the specific locations where targeted enforcement operations should be conducted, as well as the violations that each operation should focus on.

Limited Resources Are Available for Targeted Pedestrian Safety Enforcements, Making Careful Planning and Execution Essential

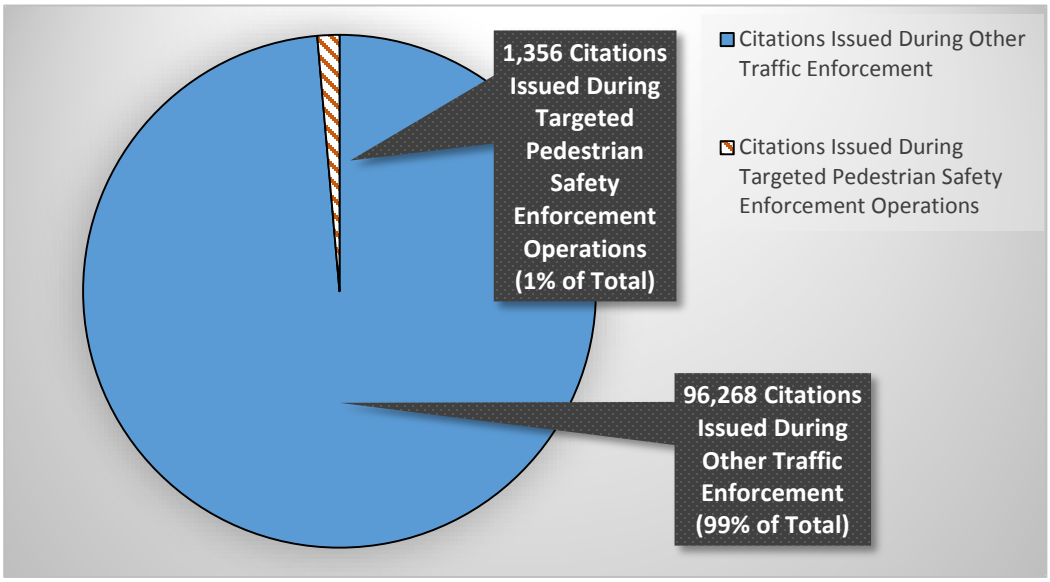
In addition to day-to-day, routine traffic enforcement efforts, the Traffic Division conducts periodic, targeted pedestrian safety enforcement operations during which several officers are sent to a region of the City to conduct enforcement of violations that could cause pedestrian collisions.[35] These targeted enforcement operations are funded by a grant the Traffic Division receives from the California Office of Traffic Safety (OTS). In 2015, the Traffic Division used this grant to conduct 24 targeted pedestrian safety enforcements, during which approximately 1,154 citations were issued.[36] As shown in **Exhibit 17**, these citations made up approximately 1 percent of all traffic citations issued by SDPD in 2015.

According to the National Highway Traffic Safety Administration's *Pedestrian Enforcement Operations: A How-To Guide* (NHTSA How-To Guide), targeted pedestrian safety enforcement operations have been shown to significantly increase driver yielding and also improve pedestrian behavior. Given that targeted pedestrian safety enforcement operations are a relatively small component of SDPD's overall traffic enforcement efforts, it is important for the Traffic Division to carefully plan and execute these targeted enforcements to ensure they have the greatest impact possible.

[35] Targeted enforcements typically include a focus on both pedestrian and bicycle collision-related violations. Our analysis was limited to the pedestrian component of each targeted enforcement operation. Targeted enforcements typically involve approximately four to five officers and last approximately eight hours.

[36] These 24 targeted enforcements include enforcements for both pedestrian and bicyclist safety. Some of these 24 targeted enforcements may have been conducted specifically for bicyclist safety. However, due to data limitations, we were unable to identify and filter out enforcements conducted specifically for bicyclist safety. To better represent the impact of these enforcements on pedestrian safety, we excluded citations issued to bicyclists. We included only citations issued to drivers or pedestrians during these enforcements (although some citations issued to drivers may have been related to bicyclist safety).

Exhibit 17: Targeted Pedestrian Safety Operations Are a Relatively Limited Component of Overall Traffic Enforcement Efforts



Source: OCA, based on SDPD's records for targeted enforcements conducted under the OTS grant during 2015 and SDPD's data on overall citations issued during 2015.

The Traffic Division could maximize the impact of its pedestrian safety enforcement operations by targeting these enforcements at the specific locations where additional enforcement is most needed and by focusing on the specific violations that have caused pedestrian collisions in those locations. Using a data-driven approach to traffic enforcement is a common practice among other Vision Zero cities. In addition, the NHTSA supports a data-driven model for enforcement operations that includes highly visible strategic traffic enforcement in the specific locations where enforcement is most needed. According to the NHTSA, targeted pedestrian safety enforcement operations are most effective when specific locations are selected based on data showing pedestrian collision trends. Objectively selecting locations based on collision trends also helps communicate to the public that targeted enforcement operations are designed to improve pedestrian safety, not generate revenue.

The NHTSA How-To Guide notes that using data over longer periods of time—typically at least three years—is necessary to

identify the locations with the greatest need. In addition, other Vision Zero cities have begun using multi-year data to select locations for targeted pedestrian safety enforcement operations. For example, New York City created a Pedestrian Safety Action Plan for each of its five boroughs, which includes a goal of focusing targeted enforcements at high-collision locations. These locations were selected based on analysis of five years of pedestrian collision data (2009–2013). The City and County of San Francisco (San Francisco) adopted a similar goal in its Vision Zero Two-Year Action Strategy, with locations also selected using five years of pedestrian collision data.

The Traffic Division Does Not Currently Use Data to Plan and Execute Its Targeted Pedestrian Safety Enforcement Operations

The Traffic Division stated that it reviews collision data for trends, and has begun to increase enforcement along the priority corridors that were identified in the City's 2015 Vision Zero report. However, the Traffic Division has not extensively utilized available data to inform selection of specific locations for its pedestrian safety targeted enforcements.[37] In fact, the Traffic Division generally does not direct officers to target specific locations during these enforcements.[38] Instead, officers are typically given a general area at which to conduct additional traffic enforcement. These areas typically align with one of the nine SDPD neighborhood divisions, such as Downtown or Western.

Given the large areas and number of residents in each area, the impact of a few extra officers is likely limited unless these resources are deployed to specific locations where additional enforcement is most needed. On average, each of the nine neighborhood divisions covers approximately 36 square miles, including more than 300 miles of streets, 180 signalized intersections, and 154,000 residents.[39] **Exhibit 18** shows an

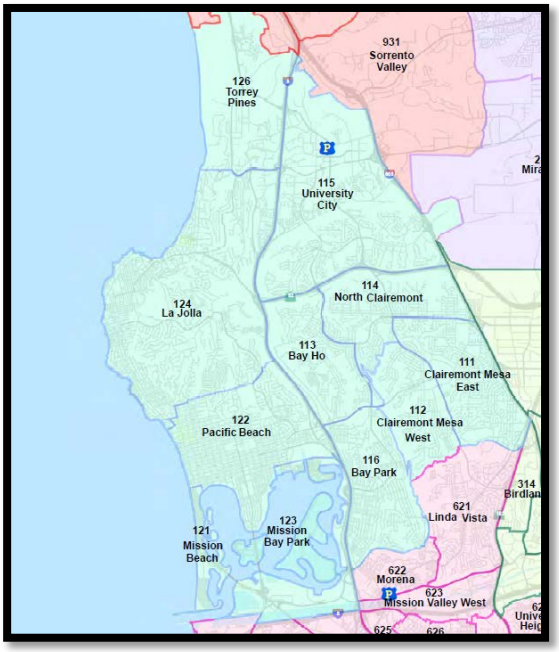
[37] Although the 2015 Vision Zero report was developed by Circulate San Diego, it was effectively adopted by the City as part of the Vision Zero plan. We therefore refer to the report as the City's 2015 Vision Zero report.

[38] The Traffic Division may direct officers to conduct targeted enforcements at specific locations and for specific violations when the enforcement is in response to a specific complaint.

[39] We calculated these statistics by dividing the total square miles, miles of streets, number of signalized intersections, and residents in the City of San Diego by nine (the number of SDPD neighborhood divisions). Some neighborhood districts may be larger than others or have more residents than others.

example of the area covered by SDPD's Northern Neighborhood Division area.

Exhibit 18: On Average, Each SDPD Neighborhood Division Area Includes More Than 300 Miles of Streets, 180 Signalized Intersections, and 154,000 Residents (Northern Division shown in teal below)



Source: San Diego Police Department website.

However, instead of using data to identify the locations and violations that are most dangerous for pedestrians, the Traffic Division leaves the specific locations of targeted enforcement operations up to the officers' discretion. In addition, officers are normally directed to cite any hazardous violations they witness, rather than focus on the specific violations that have caused pedestrian collisions in those locations.

Because the Traffic Division does not direct officers to conduct the targeted enforcements for pedestrian safety at specific locations and for specific violations that are most likely to cause pedestrian collisions in those locations, these enforcements are likely not as effective as possible at improving pedestrian safety.

Available Data on Pedestrian Collision Patterns Can Be Used to Plan and Execute Targeted Enforcements

The City currently has multi-year pedestrian collision data that can be used to identify the high-collision locations and violations that targeted enforcements should focus on, similar to the approach recommended by the NHTSA and used by other Vision Zero cities. By using available data, the Traffic Division can ensure that targeted enforcement efforts are focused at the specific locations where additional enforcement is most needed, and on the specific violations that are most likely to cause pedestrian collisions in those locations.

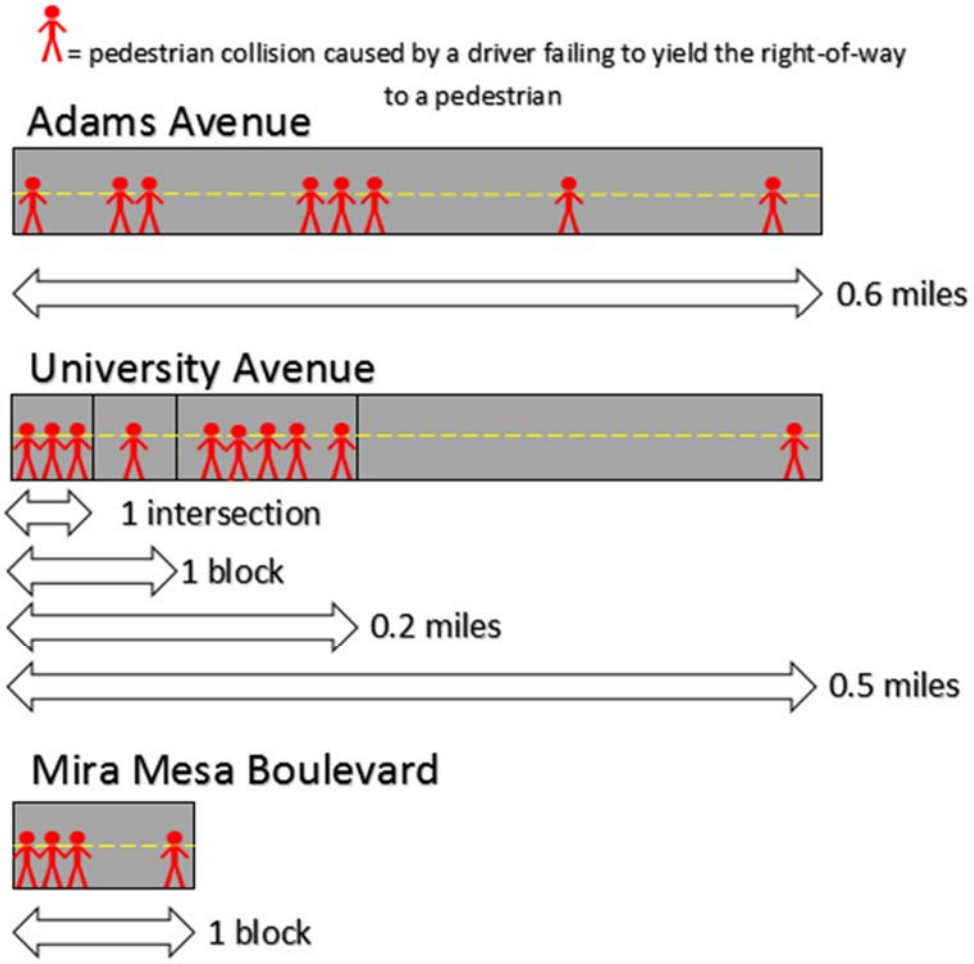
According to the Traffic Division, officers are not sent to specific locations for targeted enforcements based on data because the officers already know from experience where the problem areas are and because the Traffic Division has not been able to identify trends in the data suggesting where enforcement efforts should be focused. The Traffic Division also stated that it does not have the personnel resources to conduct more thorough analyses of its data. However, we were able to find trends in the data when we analyzed the data over a three-year period. We believe that the Traffic Division can use a similar methodology to identify trends in its data without significant strain on personnel resources.

As discussed in Finding 2, available data can be utilized to identify the violations that are most likely to cause a pedestrian collision, injury, or fatality. Also, as discussed in Finding 1, existing data can be used to identify the specific locations where pedestrian collisions have occurred at high rates. Furthermore, when we reviewed SDPD's pedestrian collision data, we found trends that indicate certain locations could benefit from additional enforcement of specific traffic violations that have caused multiple pedestrian collisions in those locations.

Specifically, we found trends that indicate multiple pedestrian collisions occurred between 2013 and 2015 at certain locations due to the same traffic violation—drivers failing to yield the right-of-way to pedestrians. We also identified some trends for locations at which multiple pedestrian collisions occurred due

to pedestrians suddenly entering the roadway and pedestrians walking against the 'Wait' signal, although these patterns were much less common than patterns of locations at which drivers failed to yield the right-of-way to pedestrians. We found that many of these collisions were clustered within relatively small segments of the City's streets. Thus, enforcement could be focused at certain intersections and street blocks. Some examples of street segments with these patterns are shown in Exhibit 19.

Exhibit 19: Examples of Data Trends Demonstrating that Some Specific Street Segments and Intersections Have Had Multiple Pedestrian Collisions from 2013 to 2015 Due to the Same Traffic Violation



Source: OCA, based on SDPD data on the causes of pedestrian collisions for 2013 to 2015.

As mentioned in Finding 2, the Traffic Division is concerned with how the public will perceive officers' prioritization of certain violations. Therefore, when conducting these enforcements, officers will treat every hazardous violation they witness equally. However, according to the NHTSA How-To Guide and our interviews with other Vision Zero cities, the Traffic Division can prevent an issue with public perception if it is transparent about what violations officers are prioritizing and that the focus violations were selected based on data.

In order to improve the impact of targeted pedestrian safety enforcement efforts and ensure that limited resources are focused on locations and violations where additional enforcement is most needed, we recommend:

Recommendation #7

The San Diego Police Department's Traffic Division should use data to determine the locations at which targeted traffic enforcement for pedestrian safety is most needed, and to identify specific violations to target in those locations. This analysis should be conducted on a periodic basis using data from at least a three-year period to better identify trends that may not be apparent when data from shorter time periods is used. (Priority 1)

SDPD Can Further Improve Driver and Pedestrian Behavior by Coordinating Education with Enforcement and Making Targeted Enforcement Efforts Highly Visible

The ultimate goal of enforcement is to improve safety by positively influencing driver and pedestrian behavior. Including an education and outreach component and maximizing visibility through earned media coverage can enhance the effectiveness of targeted enforcement by reaching a much wider audience than enforcement alone. In addition, including an educational component—for example, by issuing warnings along with educational materials for a period of time before beginning to issue citations—can improve the perception of enforcement efforts by demonstrating the City's commitment to improving safety, not maximizing citation revenues.

Currently, the Traffic Division does not conduct education and outreach when executing targeted pedestrian safety enforcement operations, does not make them highly visible to increase exposure to others in the vicinity, and does not have a strategy to earn media coverage and reach the widest possible audience. We recommend that the Traffic Division incorporate these components into its targeted pedestrian safety enforcement operations in order to maximize the positive impact these operations have on pedestrian safety.

State and Federal Organizations Recommend Making Targeted Pedestrian Safety Enforcement Operations Highly Visible and Combining Enforcement with Education and Outreach

Targeted pedestrian safety enforcement operations are more effective when they include an education and outreach component. The education and outreach can support the deterrence effect of the enforcement and lead to more behavior change. For example, according to the NHTSA How-To Guide, an education and outreach component can enhance the effectiveness of enforcement activities by reaching a wider audience than enforcement alone. The NHTSA How-To Guide also emphasizes the importance of appropriately alerting the public of planned pedestrian safety enforcement operations using means such as press releases and temporary signage, as well as strategies to earn media coverage of the enforcement effort. Specifically, the NHTSA How-To Guide states:

> "Given the poor state of driver and pedestrian knowledge, combined with possible public 'pushback' if enforcement activities come as a surprise, pedestrian safety activities should include community education. Effective enforcement activities often have a substantial education component that reaches beyond the drivers and pedestrians who are stopped, adding to the overall deterrence effect and enhancing the effectiveness of enforcement itself as a safety tool. Well-publicized enforcement changes more behavior than enforcement alone because it reaches more people."

The Traffic Division's Targeted Pedestrian Safety Enforcements Do Not Currently Include an Education Component and Are Not Highly Visible or Publicized

High-visibility enforcement that includes an educational component can help the Traffic Division maximize the impact of its targeted pedestrian safety enforcement operations. However, we found that the Traffic Division is not leveraging its resources to influence behavior change by incorporating education and outreach into enforcement efforts, making enforcements highly visible, or seeking media coverage of its targeted enforcement operations. As a result, these enforcements are not reaching a wide audience and influencing behavior change to the maximum extent possible.

While the Traffic Division has been conducting targeted pedestrian safety enforcement operations, officers are not instructed to inform people about the importance of pedestrian safety or Vision Zero during these enforcements. Similarly, for special safety months, such as Distracted Driving Month in April, officers will typically not inform the driver, pedestrian, or bicyclist of the campaign, and the Traffic Division does not direct the officers to do so. The Traffic Division stated that in its experience, drivers and pedestrians are often upset at being cited and are not usually receptive to educational information. However, other cities have experienced education to be effective when used in conjunction with warnings prior to a period of increased enforcement in the same location.

The Traffic Division also stated that the California Office of Traffic Safety (OTS), the provider of the grant that funds the Traffic Division's targeted enforcements, expects the Traffic Division to issue as many citations as possible, and to not issue warnings using grant funds. However, we reviewed the OTS grant application and spoke to OTS, and found that according to OTS, grantees are encouraged to coordinate education with the targeted pedestrian safety enforcement operations that are funded by the OTS grant, and grantees may issue warnings during these enforcement operations. According to OTS, this is to reinforce that targeted pedestrian safety enforcement efforts are intended to increase the safety of pedestrians. According to the Traffic Division, OTS has not communicated these expectations. As a result, SDPD does not currenlty utilize

education and warnings during these enforcement operations. By focusing on issuing citations and by excluding educational efforts from its enforcement operations, the Traffic Division is missing opportunities to improve behavior and may be creating a risk that targeted enforcements will be perceived as a revenue generating tool.

In addition, the Traffic Division has not publicized targeted pedestrian safety enforcements or made them highly visible to maximize impact on driver and pedestrian behavior. As a result, these targeted enforcements are reaching a relatively small audience, which is limited mostly to those who are cited. For example, in 2015, the Traffic Division issued 1,154 citations during targeted pedestrian safety enforcements—a relatively small number when compared to the City's population of 1.4 million people.[40] Because the operations are not highly visible, passers-by may not notice them, and those that do notice may not know what the goal of the operation is, thereby limiting the effect of the enforcement on driver and pedestrian behavior.

In addition, although the Traffic Division issues press releases for its DUI enforcement details, it does not issue press releases for its targeted pedestrian safety enforcements and does not have a strategy to publicize the enforcements. By not employing a strategy to earn media coverage of these enforcement efforts, the Traffic Division is missing a significant opportunity to reach a much wider audience at relatively low cost. We ran ten separate Google searches for media articles or video clips mentioning the Traffic Division's pedestrian safety enforcement efforts to test whether these enforcements reach an audience beyond those who were cited or who may have noticed the operation occurring. We found that, although the Traffic Division conducted 24 targeted pedestrian safety enforcements in 2015, none of them appear to have generated any media coverage. We were only able to find media coverage

[40] As noted above, the number of citations given out during targeted enforcements is also a relatively small part of SDPD's overall traffic enforcement efforts. Approximately 1 percent of the citations SDPD issued during 2015 were given during targeted pedestrian safety enforcements.

for two pedestrian safety enforcements conducted back in 2013.

Other Cities Have Combined Enforcement and Education to Reach a Wide Audience and Maximize Positive Behavior Change

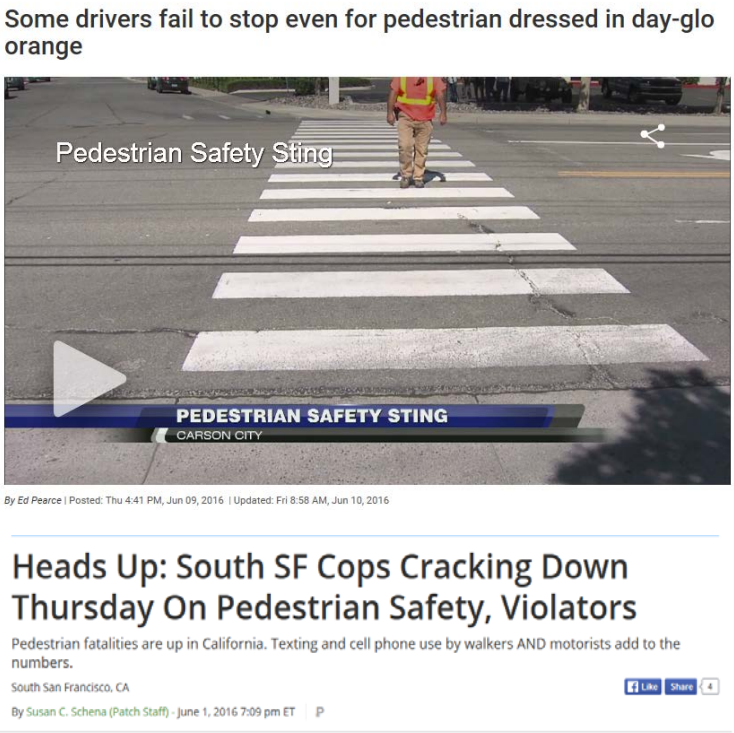
Other Vision Zero cities have combined their targeted pedestrian safety enforcements with education and outreach to maximize the size of the audience that is influenced by the enforcement effort. These other cities have used a model of conducting a period of targeted education and outreach at particular high-collision locations, followed by a period of enhanced enforcement. For example, New York City's Street Teams approach involves the New York Police Department and the New York City Department of Transportation going to high-collision areas, spending a week handing out flyers that explain that the area is a high-collision area, including information on the types of violations commonly committed there, and notifying people that the following week there would be a targeted enforcement in the area. These combined education and enforcement efforts are typically coordinated with other departments or advocacy groups to assist with the educational aspect.

Other Vision Zero cities, including Los Angeles, New York City, San Francisco, and Reno, among others, have widely publicized their targeted pedestrian safety enforcements and have successfully attracted media attention, further enhancing the overall impact of their targeted enforcements. By employing strategies to earn media coverage of targeted enforcements and coordinated education efforts, these cities have cost-effectively increased public awareness of the issue of pedestrian safety and encouraged safer driver and pedestrian behavior. The NHTSA How-To Guide also states that establishing relationships with the media is a promising practice for effective pedestrian safety enforcements.

In addition, other cities have taken a creative approach to pedestrian safety enforcements in order to create an interesting and compelling story for local media to cover. Some noteworthy examples include using decoy officers wearing various bright or attention-grabbing outfits to see if drivers will

yield to them. For example, the City of Lake Elsinore had an officer dress up in chicken suit, and Carson City had an officer dress up in a day-glow orange vest to try to safely cross the road during pedestrian safety enforcements. Media coverage of these operations sometimes includes safety tips for drivers and pedestrians, thereby enhancing the effect of the enforcement effort by educating a wider audience. **Exhibit 20 s**hows some of the earned media coverage other cities have attracted for their pedestrian safety enforcements.

Exhibit 20: Examples of Other Cities Publicizing Pedestrian Safety Enforcements and Attracting Earned Media



Source: KOLO 8 News Now; News 12 Brooklyn; South San Francisco Patch.

Studies Indicate that Highly Visible Enforcement Including Education, Outreach, and Media Coverage Can Successfully Improve Driver and Pedestrian Behavior

Studies conducted by other cities have found making pedestrian safety enforcements highly visible and incorporating education and outreach components to be an effective enforcement strategy. Through employing this strategy, these cities have been able to improve pedestrian

safety by positively influencing behavior and increasing compliance with traffic laws.

For example, San Francisco found that its "It Stops Here" campaign, which combined education and outreach with enforcement, was effective at changing behavior. The campaign was targeted in certain areas using in-depth communication and outreach in key corridors. The campaign also had a City-wide aspect, which included the use of bus wraps, posters at bus shelters, and radio ads. San Francisco's evaluation found the campaign led to a 3–4 percent increase in drivers yielding to pedestrians in the targeted areas. While a 3–4 percent change may sound insignificant, the difference is substantial when considering the volume of cars entering highly trafficked intersections. The study estimated that this increase in yielding equated to an additional 419 cars per hour yielding to pedestrians during peak traffic times.

Similarly, in 2013, the NHTSA published a study on the effectiveness of high-visibility enforcement in Gainesville, Florida.[41] Over the course of a year, Gainesville police periodically conducted targeted enforcements using decoy pedestrian crossings, yield to pedestrian signs, and education via informational flyers, earned media coverage, and outreach efforts within the community. Over the course of the year studied, high-visibility enforcement successfully led to a steady increase in the percentage of drivers yielding the right-of-way to pedestrians.

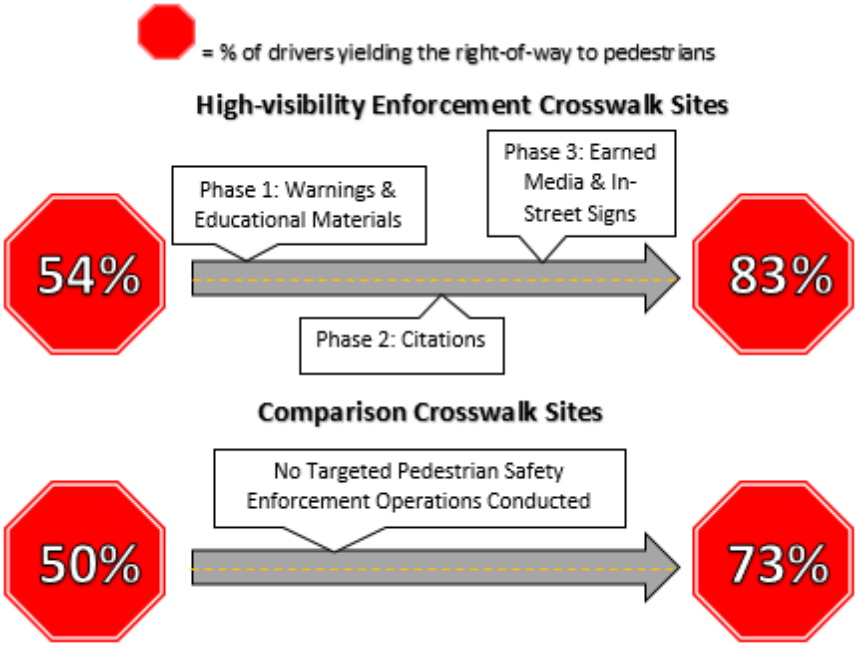
Specifically, the study found that the percentage of drivers yielding the right-of-way to pedestrians started to increase during the first phase of high-visibility enforcement when officers primarily issued warnings and distributed informational flyers. Officers issued citations during the next phase of high-visibility enforcement and the percentage of drivers yielding the right-of-way to pedestrians increased more. The percentage of drivers yielding the right-of-way to pedestrians increased again during the third phase in which media and in-

[41] *High-Visibility Enforcement on Driver Compliance with Pedestrian Right-of-Way Laws.* National Highway Transportation Safety Administration, 2013.

street signs were added to increase the visibility of the enforcements.

Overall, the study found that the intersections at which the enforcements were conducted saw a significant increase in drivers yielding the right-of-way to pedestrians, while other intersections at which no enforcements were conducted also saw a steady increase in the percentage of drivers yielding the right-of-way to pedestrians. Thus, the study concluded that the high-visibility enforcements successfully created a sustained change in driver behavior, both by those who had been warned or cited during the enforcement period, as well as those who had only witnessed the enforcement or had been exposed to it through media coverage. **Exhibit 21** summarizes the impact of Gainesville's combined enforcement, education, and outreach effort.

Exhibit 21: High-Visibility Enforcements Successfully Improved Driver Behavior at Both Enforcement and Non-enforcement Locations in Gainesville, Florida



Source: OCA, based on the National Highway Traffic Safety Administration's *High-Visibility Enforcement on Driver Compliance With Pedestrian Right-of-Way Laws* report.

In order to most effectively utilize available resources, create economies of scale, and maximize the visibility of the City's targeted pedestrian safety enforcement efforts, we recommend:

Recommendation #8

The San Diego Police Department's Traffic Division should publicize its targeted enforcements for pedestrian safety and combine enforcement with education and outreach. These outreach plans should include the following:

- **Actions to make targeted pedestrian safety enforcements highly visible to drivers and pedestrians in the targeted area. Examples of actions taken by other jurisdictions to make targeted enforcements highly visible include temporary signage and the use of volunteers to provide information verbally and hand out pamphlets. Signage may be placed at the targeted location in advance of the enforcement effort to increase the number of drivers and pedestrians made aware of the enforcement.**
- **A strategy to publicize the enforcement effort specifically focusing on earning media coverage to maximize the exposure of residents to enforcement and education efforts. (Priority 1)**

Training for Officers Should Emphasize the Goal of Improving Pedestrian Safety

The NHTSA How-To Guide states that effective pedestrian safety enforcement operations tend to include training for officers on program goals, objectives, and procedures. Specifically, the NHTSA How-To Guide states:

> "Of foremost importance in training is the emphasis that **pedestrian safety enforcement operations are about saving lives and preventing injuries**—not about citations and enforcement statutes. The goal of these operations is to make roadways safer."

As mentioned earlier, SDPD does not currently provide its traffic officers with additional training on pedestrian safety enforcement.

Recommendation #9

The San Diego Police Department should ensure there is training and guidance provided to officers on pedestrian safety which emphasizes that pedestrian safety enforcement operations are about saving lives and positively influencing behavior. This training should also include the importance of educating drivers and pedestrians on the importance of the safety efforts. (Priority 1)

Finding 4: The City Can Improve Pedestrian Safety by Developing a Citywide Public Education and Outreach Campaign to Increase Awareness and Change Pedestrian and Driver Behavior

Although behavior change is the ultimate goal of traffic enforcement, enforcement alone has too limited of a reach to influence widespread behavior change. Driver and pedestrian education is needed in addition to engineering and enforcement for a comprehensive and effective approach to improving pedestrian safety. In addition to combining education with targeted enforcements, the City could improve awareness of its Vision Zero mission and enhance its positive impact on pedestrian and driver behavior through a coordinated Citywide public education campaign.

While the City's current education and outreach efforts for pedestrian safety are limited, the City's draft Vision Zero Strategic Plan states that the City plans to develop a media outreach strategy by July 2017. As the City develops this strategy, it should incorporate practices that have been used by other Vision Zero cities to successfully and cost-effectively improve driver and pedestrian behavior and awareness of pedestrian safety issues.

Specifically, we found that the City's current pedestrian safety education and outreach efforts fall behind those of other cities in these key areas:

- The City's current education and outreach efforts for pedestrian safety are not coordinated with other departments whose expertise could be used to develop a consistent, Citywide message. In addition, the City's current resources for education and outreach are scattered into several small-scale initiatives, while resources would likely be spent more cost effectively if consolidated for a larger scale campaign.

- The City does not have current plans to use a data-driven approach for education and outreach and to target campaigns to specific neighborhood needs.

As a result, there is a risk that a future pedestrian safety education and outreach campaign may not positively influence pedestrian and driver behavior to the greatest extent possible, and that the City may miss opportunities to increase residents' and visitors' awareness of the City's Vision Zero mission.

Therefore, in order to achieve cost efficiencies and maximize the impact of future pedestrian safety education and outreach efforts, we recommend that the City coordinate the development of a pedestrian safety campaign across all key departments and consolidate available education resources into a single Citywide campaign. In addition, the City should utilize a data-driven approach to tailor the campaign's core message to specific neighborhood needs.

Public Education and Outreach Campaigns Can Further Influence Driver and Pedestrian Behavior

Although enforcement helps to deter people from violating traffic laws, education and outreach helps to ensure that drivers and pedestrians fully understand their responsibilities and comply with the law even when enforcement is not present. Therefore, effective pedestrian safety education and outreach is needed to promote expectations for safer behavior when driving and walking. In addition, similar to the three E's of Vision Zero, the National Highway Traffic Safety Administration (NHTSA) recommends a three-pronged approach of engineering, enforcement, and education to improve pedestrian safety.

The City Currently Lacks a Citywide Pedestrian Safety Campaign

The City of San Diego currently lacks a Citywide public education campaign for pedestrian safety.[42] The City's current pedestrian safety education and outreach efforts are limited, and efforts are not coordinated across departments to reinforce a core Citywide message. In addition, the Communications Department has not recently provided any education or outreach regarding pedestrian safety in terms of driver and pedestrian behavior. In relation to pedestrian safety, the Communications Department has primarily been involved in promoting the Transportation and Storm Water Department's improvements to intersections and corridors. Education and outreach that is intended to improve behavior is primarily provided by the San Diego Police Department's Traffic Division (Traffic Division) and its community partners through a grant from the California Office of Traffic Safety (OTS). The education and outreach provided by the Traffic Division is small in scale and is provided in the form of presentations at school assemblies, military bases, and events, such as community walks for Safe Routes to School events and bike rodeos. According to the Traffic Division, these presentations are given only at the request of the school or the event organizer, and there is no script for police officers to follow to ensure that the presentation aligns with a core Citywide pedestrian safety message. According to the OTS grant application, the Traffic Division's community partners' plans for the remaining portion of the grant include community events in targeted communities, school assemblies, the creation of an educational video for the Vision Zero campaign, and development of messaging content for Vision Zero. However, many of these plans are still in the early stages.

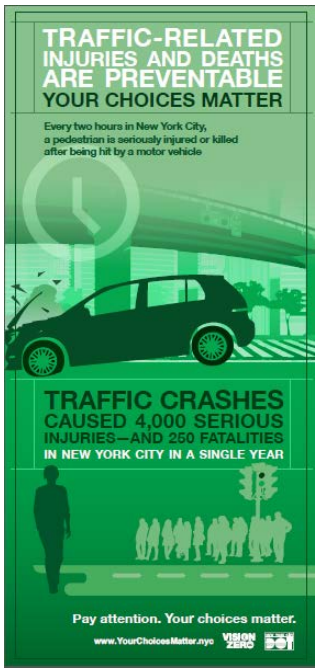
[42] The City has not had a campaign related to pedestrian safety in the past seven years. The last campaign the City had related to pedestrian safety was "Lose the Roaditude," a 2009 regional initiative developed by the NHTSA that focused on changing driver, pedestrian, and bicyclist behavior. However, the campaign was very limited—it was primarily advertised on City TV and the City of San Diego website—and the Traffic Division does not recall whether the campaign included an enforcement component.

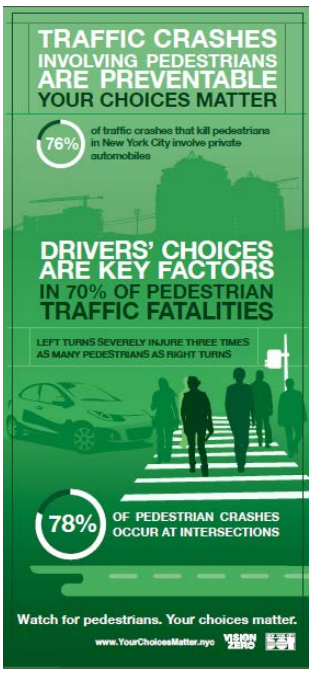
Other Vision Zero Cities Have Developed Citywide Pedestrian Safety Public Education Campaigns Using a Collaborative, Data-Driven Approach

We interviewed representatives from four other Vision Zero cities—New York City, San Francisco, Los Angeles, and Washington D.C.—to determine how the City of San Diego's current and planned pedestrian safety education and outreach compares to earlier adopters of Vision Zero. All four cities stressed during these interviews or within Vision Zero planning documents the importance of education in addition to engineering and enforcement for improving pedestrian safety. Most of these cities stated that they had already developed and implemented, or were in the process of developing education and outreach campaigns for pedestrian safety as part of their city's Vision Zero efforts.

In addition, New York City and the City and County of San Francisco (San Francisco) highlighted the importance of using a data-driven approach to develop campaigns. San Francisco also highlighted the importance of collaborating with community partners. These cities utilized available data on pedestrian collision locations and causes, and conducted focus groups to ensure the campaign's core message was effective and conveyed important information. As shown in **Exhibit 22** and **Exhibit 23**, New York City's "Your Choices Matter" campaign and San Francisco's "It Stops Here" campaign include easy-to-remember core messages. In addition, each campaign includes data on pedestrian fatalities and serious injuries in their respective cities, emphasizes the importance of paying attention while driving and watching for pedestrians, and highlights certain behaviors that are the primary cause of many pedestrian collisions, injuries, and fatalities.

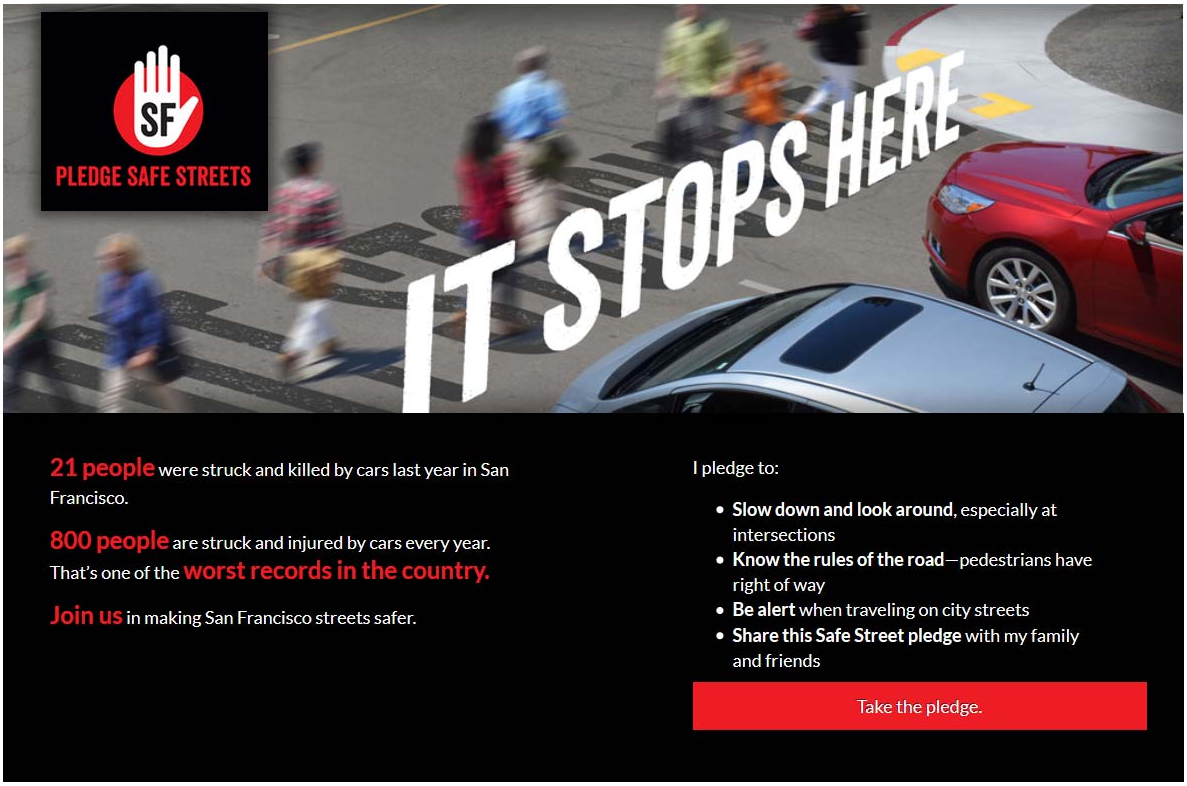
Exhibit 22: New York City's "Your Choices Matter" Campaign





Source: www.YourChoicesMatter.nyc

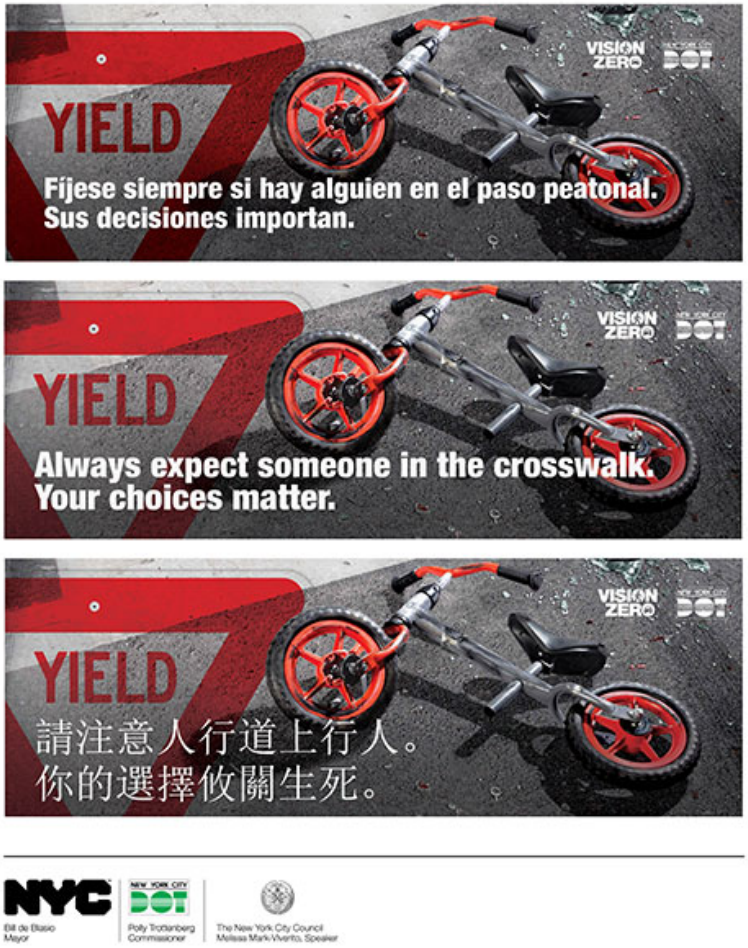
Exhibit 23: San Francisco's Safe Street Pledge & "IT STOPS HERE" Campaign



Source: Vision Zero SF website.

In addition to developing a core message, the City can enhance the effectiveness of a pedestrian safety campaign by targeting the campaign content and media placement using data and focus groups. Doing so would enable the City to tailor the campaign's core message to specific neighborhood concerns. The National Highway Traffic Safety Administration's *Pedestrian Enforcement Operations: A How-To Guide* (NHTSA How-To Guide) also recommends targeting education and outreach to reflect the needs of the community, such as providing the education and outreach in multiple languages. For example, New York City disseminates its "Your Choices Matter" campaign in various languages, and places advertisements such as billboards and bus wraps along high-collision corridors to maximize their effectiveness. Examples of New York City's multi-language public education media are shown in **Exhibit 24**.

Exhibit 24: New York City's "Your Choices Matter" Campaign is Available in Multiple Languages to Meet Neighborhood Needs



Source: New York City Department of Transportation website.

Data-Driven, Citywide Public Education Campaigns Have Effectively Improved Behavior and Increased Awareness of Pedestrian Safety

Other Vision Zero cities have found that Citywide education campaigns that are developed using a data-driven approach can successfully improve driver and pedestrian behavior and increase awareness of pedestrian safety issues.

For example, both New York City and San Francisco have used polling and surveys to evaluate the impact of their education and outreach efforts. As mentioned earlier in this report section, both of these cities used data and focus groups when developing their education campaigns. In 2015, New York City surveyed residents after conducting a pedestrian safety

campaign and found that 72 percent of respondents were aware of the campaign. Respondents of all three targeted languages (English, Spanish, and Chinese) reported that seeing the ads caused them to be more attentive to pedestrians when driving, and to be more careful as pedestrians. Similarly, according to San Francisco, when it conducted surveys before and after its "It Stops Here" pedestrian safety campaign, it found that people who had seen the campaign did in fact have an increased level of knowledge and confidence in right-of-way rules. San Francisco also used data to evaluate its "It Stops Here" campaign, which included an enforcement component, and found that it resulted in a 3–4 percent increase in drivers yielding to pedestrians. In contrast, the City of San Diego's current education and outreach efforts likely have a limited impact because they are scattered across multiple departments and lack a core message that can be tailored to individual neighborhood needs. In addition, a consolidated Citywide campaign with a compelling core message may be more cost effective than multiple smaller, uncoordinated, and inconsistent messaging campaigns.

According to the Vision Zero Strategic Plan, the City plans to develop a media outreach strategy by July 2017; however, no specific details are provided. We recommend that this strategy include the development of a Citywide public education campaign, similar to those that have been successful in other jurisdictions, and be developed using a collaborative, data-driven approach.

Specifically, in order to ensure that the City is effectively leveraging all available resources to educate the public about the importance of pedestrian safety and improve behavior change to the maximum extent possible, we recommend:

Recommendation #10 **The Chief Operating Officer should direct staff to develop a Citywide public education campaign designed to raise awareness of pedestrian safety issues and improve driver and pedestrian behavior. (Priority 1)**

Recommendation #11 The development of Recommendation #10's campaign should be a collaborative approach which includes the Communications Department, any other City departments that can contribute resources and expertise, and community partners, such as Vision Zero stakeholders and advocacy groups, where needed. (Priority 2)

Recommendation #12 Recommendation #10's campaign should include a core message that can be customized to fit different neighborhood needs, such as examples of behaviors that have placed pedestrians at risk in specific neighborhoods, or the use of different languages to reach non-English speakers. These messages should be developed using available data on the locations and causes of pedestrian collisions in the City's neighborhoods. If funding is available, development should also utilize focus groups or other research methods to ensure the effectiveness of the campaign. (Priority 2)

Recommendation #13 Data should be utilized to place Recommendation #10's campaign media in locations where it will have the greatest effect on awareness, behavior, and safety. (Priority 2)

Finding 5: The City's Vision Zero Task Force Should Develop Strategies for Financing and Evaluating the City's Vision Zero Efforts, and Should Report Results to Improve Public Awareness and Accountability

The City has taken important initial steps to improve pedestrian safety by establishing a Vision Zero Task Force (Task Force), headed by the Mayor's Office, and by developing a one-year Vision Zero Strategic Plan for FY 2017. In addition, the City is initiating development of a longer-term Vision Zero Strategic Plan, which is anticipated to be completed by the end of FY 2017. We found that going forward, expanding the scope of the Task Force would help the City ensure that planning efforts address additional areas that will be key to the long-term success of Vision Zero. Specifically, we found that:

- According to the City's Office of the Independent Budget Analyst, current funding levels may not be sufficient to achieve long-term Vision Zero goals. In addition, we found that the Vision Zero Task Force does not currently include a Funding/Finance Subcommittee nor does it include strategies for funding all of the City's Vision Zero efforts.
- The City does not currently have strategies to evaluate and monitor the City's progress towards achieving Vision Zero goals, nor does the Task Force currently have strategies for reporting results to decision makers and the public.

As a result, there is a risk that the City's Vision Zero efforts will lose momentum in the future. Therefore, we recommend that:

- The Task Force add identifying funding needs and opportunities to its general responsibilities. The Task Force should annually determine what engineering, enforcement, and education initiatives the City should consider implementing to achieve its Vision Zero goals and should provide information on funding needs for consideration during the annual budget process so that

policymakers can make informed resource allocation decisions. The Task Force should also work to identify additional grants or other funding sources.

- The City should consider either adding an Evaluation Subcommittee to the Task Force or developing a formal evaluation and monitoring process.
- The Chief Operating Officer should direct staff to develop a comprehensive Vision Zero website and post the status of the City's implementation of Vision Zero initiatives on the website.

The City's Vision Zero Task Force Has Taken Initial Steps to Improve Pedestrian Safety and Has Established a Vision Zero Strategic Plan for the Current Fiscal Year

Because Vision Zero is a Citywide effort that involves several City departments and community partners, coordination is essential. The City's Vision Zero Task Force (Task Force) currently provides an avenue for coordination between departments and certain community partners. Other Vision Zero cities have credited their respective Vision Zero Task Force for increasing coordination, establishing accountability, and keeping their city on track to implement their Vision Zero initiatives.

The City's Task Force began meeting in January 2016 to complete a Vision Zero Strategic Plan for FY 2017 (Strategic Plan). The Task Force included three subcommittees:

- Engineering Subcommittee
- Enforcement Subcommittee
- Education Subcommittee

Each subcommittee met twice, and the Task Force as a whole met three times to develop and finalize the Strategic Plan. The Task Force included representatives from local advocacy groups such as Circulate San Diego and the San Diego Bicycle Coalition, as well as City departments, and was led by a representative from the Mayor's Office.

In June 2016, the Mayor's Office presented the Task Force with a Strategic Plan for FY 2017. The Strategic Plan includes initiatives for each of the three subcommittees. The Task Force

also plans to establish a Vision Zero Steering Committee to complete a longer-term strategic plan by the end of FY 2017.

Existing Funding Levels May Not Be Sufficient to Meet the Goals of the Vision Zero Plan

In addition to assessing engineering, enforcement, and education needs, the Task Force should assess whether funding is adequate to achieve the City's Vision Zero goals and take action to identify additional funding opportunities. The City's Office of the Independent Budget Analyst determined in its review of the Mayor's FY 2017 Proposed Budget that the City's Vision Zero Plan has significant needs and funding requirements that are above and beyond what the City's existing resources will likely be able to support in the future. Thus, it is likely that the City may need to consider new resources in the near future in order to successfully implement the Vision Zero Plan.

Although the Education Subcommittee of the Task Force has included an initiative for identifying funding opportunities as part of the FY 2017 Strategic Plan, no other subcommittee included initiatives related to funding. In contrast, the City has established funding needs and strategies for other key initiatives such as the Climate Action Plan. Furthermore, the City and County of San Francisco (San Francisco) created a specific funding workgroup devoted to identifying funding needs and funding opportunities.

As a result of the City's lack of a funding workgroup, resource expenditures may not be coordinated effectively, and some groups may not be aware of existing funding opportunities. In addition, the Mayor and City Council may not have sufficient information to determine how to allocate resources for Vision Zero versus other efforts, thereby increasing the risk that a lack of funding will prevent the City from reaching its Vision Zero goals.

Recommendation #14

The Vision Zero Task Force should add identifying funding needs and opportunities to its general responsibilities. (Priority 2)

Recommendation #15

The Vision Zero Task Force should annually determine what engineering, enforcement, and education initiatives the City should consider implementing to achieve its Vision Zero goals, and provide information on funding needs for consideration during the annual budget process. (Priority 2)

Recommendation #16

The Vision Zero Task Force should work to identify and recommend the City pursue additional grants or other funding sources that can be used to further its Vision Zero efforts. (Priority 3)

The Vision Zero Strategic Plan Lacks Specific Performance Measures

To ensure continuous improvement, it is important for the City to evaluate and monitor its progress towards achieving its Vision Zero initiatives. Evaluation and monitoring of outputs and outcomes can help the City identify effective practices, adjust its plans accordingly, and ensure that it stays on track to achieve its Vision Zero goals. Evaluations can also be used to improve awareness and justify the need for additional resources. Furthermore, the City's resolution to adopt a Vision Zero Plan states that the City will measure and evaluate performance annually.

Because it can take years of Vision Zero efforts before pedestrian collision data shows a downward trend in pedestrian collisions, injuries, and fatalities, it is important for the City to evaluate its Vision Zero efforts in terms of outputs in addition to outcomes. The difference between outputs and outcomes is described below:

Outputs =	The quantity of the actions the City has taken for Vision Zero, such as the number of intersections improved with modern safety features, the number of targeted pedestrian safety enforcements completed by SDPD, and the number of people reached by a Vision Zero campaign.
Outcomes =	The impact of the actions the City has taken for Vision Zero, such as a change in the rate of pedestrian collisions at intersections that have received engineering improvements, a change in the percentage of drivers yielding to pedestrians at an intersection that was the focus of a targeted pedestrian safety enforcement, and a change in people's understanding of traffic laws as a result of an education and outreach campaign.

The Vision Zero Task Forces of the City and County of San Francisco and the City of Los Angeles include Evaluation Subcommittees in addition to Engineering, Education, and Enforcement Subcommittees. Moreover, other Vision Zero cities are working to evaluate their Vision Zero efforts and share their evaluation methods via the Vision Zero Network.

However, we found that the City of San Diego's Task Force does not currently include an Evaluation Subcommittee, and although the Task Force's long-term plans include developing qualitative and quantitative performance measures, specific plans for evaluation and monitoring have yet to be developed.

To help ensure continuous improvement for pedestrian safety, the City should evaluate and monitor its progress for each of the three main Vision Zero E's: Engineering, Enforcement, and Education. The following sections briefly describe examples of measures that could be used in a formal evaluation process to monitor and evaluate the City's overall performance, as well as its performance in each of these key areas.

Evaluation of the City's Overall Progress towards Meeting its Vision Zero Goals

In FY 2017, the City established a performance goal of achieving an annual 5 percent reduction in preventable severe traffic collisions and fatalities each fiscal year through 2035.[43] This is a key performance measure because the reduction and eventual elimination of severe collisions and fatalities is the ultimate goal of the City's Vision Zero efforts. However, on its own, this measure has several shortcomings. Therefore, additional output and outcome measures should be used to supplement this metric in order to provide a more complete picture of the City's efforts to improve pedestrian safety.

Specifically, as noted earlier, it may take several years for downward trends in pedestrian collisions, injuries, and fatalities to develop, even if the City is making meaningful progress towards improving pedestrian safety through infrastructure improvements at high-collision locations. In addition, a 5 percent reduction in severe collisions, injuries, and fatalities each year would mean that the City would eliminate these incidents by 2035, but the Vision Zero resolution adopted by the City Council and signed by the Mayor establishes a goal of eliminating traffic fatalities and serious injuries (including for pedestrians) by 2025—10 years earlier.

In order to align with the goal adopted by the City Council and Mayor, the Chief Operating Officer and the Vision Zero Task Force should consider revising the existing performance goal to ultimately eliminate severe injury traffic collisions and fatalities by 2025.

Evaluation and Monitoring of Engineering Improvements

There are several ways the City can measure effectiveness of engineering improvements. As discussed in Finding 1, Recommendations #1 and #2, we recommend that the Transportation Storm Water Department (TSW) supplement the City's performance measure to achieve an annual 5 percent reduction in preventable severe traffic collisions and fatalities

[43] This performance measure is included in the Transportation and Storm Water Department's budget, but it is effectively a Citywide goal because the number of traffic fatalities and collisions is influenced by all of the three E's: Engineering, Enforcement, and Education. Thus, other City departments involved in the three E's share this goal.

by establishing an output goal to improve infrastructure at a minimum number of high-pedestrian collision intersections per year. In addition, while it may take years to identify a trend in pedestrian collisions at a single intersection that has recently been improved, evaluating a larger number of intersections may reveal trends more quickly. For example, an intersection that averaged one pedestrian collision per year before receiving improvements to increase pedestrian safety in 2015 could still experience a pedestrian collision in 2016. This would not necessarily indicate that the safety improvements TSW made were ineffective, because a longer time period is needed to make that determination at a single location. However, using data from many locations that had received similar improvements—such as the approximately 50 intersections per year that receive pedestrian countdown timers—would smooth out this volatility and allow the overall effectiveness of these improvements to be evaluated more quickly. While some of the 50 intersections that receive pedestrian countdown timers may experience the same or a higher pedestrian collision rate the following year, if the collision rate at most intersections declined, then it would indicate that these types of improvements are likely effective at improving pedestrian safety in the City of San Diego.

Evaluation and Monitoring of Day-to-Day Enforcement and Targeted Pedestrian Safety Enforcement Operations

To ensure that the San Diego Police Department (SDPD) takes action to improve pedestrian safety by increasing enforcement of certain traffic violations during day-to-day enforcement, it should evaluate and monitor its actions.

The San Francisco Police Department (SFPD) tracks and publishes performance statistics broken down by district on a monthly basis. In addition, performance statistics on traffic enforcement efforts and progress toward meeting the "Focus on the Five" 50 percent goal are discussed during monthly meetings.

However, SDPD does not currently conduct analysis or evaluations to determine if officers are focusing on certain traffic violations related to pedestrian safety and does not

publish or report statistics on traffic enforcement specifically related to pedestrian safety. As mentioned earlier in this report, we found that the percentage of traffic citations issued for the driver violations that are most dangerous to pedestrians is relatively low compared to citations for equipment, registration, and other non-hazardous violations. Therefore, evaluation and monitoring of SDPD's traffic enforcement actions can enhance oversight and help ensure that officers focus enforcement efforts according to the City's Vision Zero goals.

In addition, SDPD's Traffic Division (Traffic Division) should improve its collection of data for each targeted pedestrian safety enforcement operation, periodically evaluate the effectiveness of these enforcement operations, and report results to improve public awareness and help justify requests for additional funding. According to the National Highway Traffic Safety Administration's *Pedestrian Enforcement Operations: A How-To Guide* (NHTSA How-To Guide), the Traffic Division's targeted pedestrian safety enforcement operations should be formally evaluated on a periodic basis. Evaluations can be used to determine if pedestrian safety activities are being effective and can help identify needs for improvement or process changes. Outcome evaluations can also assist the Traffic Division in justifying the need for and obtaining additional funding.

Because it can take years of pedestrian collision data to identify trends, the NHTSA How-To Guide recommends using several other measures to determine effectiveness of pedestrian safety operations. These include measuring changes in the rates of drivers yielding to pedestrians, drivers speeding at crosswalks, drivers stopping too close or in crosswalks, pedestrians crossing against the walk signal, and pedestrians stepping into traffic without warning. For example, San Francisco evaluated its "It Stops Here" campaign, a coordinated education and targeted enforcement campaign, and found that it resulted in a 3–4 percent increase in drivers yielding to pedestrians.

We found that the Traffic Division does not currently have a process in place to formally evaluate the effectiveness of its targeted pedestrian safety enforcement operations and does not collect adequate information to perform this analysis. As a result, the Traffic Division is unable to evaluate whether officers conducting targeted pedestrian safety enforcements focus on specific high-collision locations and the violations that are most likely to cause pedestrian collisions, use this data to inform enforcement planning, or share this information with policymakers and the media to increase public awareness. In fact, the Traffic Division only records the number of citations issued during each targeted pedestrian safety enforcement operation and does not track where the citations were issued or what specific violations they were issued for.

Evaluation and Monitoring of an Education and Outreach Campaign

It is important for the City to evaluate its campaigns to identify effective practices and improve future campaigns accordingly. In addition, if the City can demonstrate that a campaign has been successful, it can justify funding additional campaigns. Although evaluation of education and outreach is something that all Vision Zero cities have been struggling with, other cities are attempting to evaluate the impact of their campaigns to the best of their ability and are actively sharing ideas and lessons learned through the Vision Zero Network. Both New York City and San Francisco have reported using polling and surveys to evaluate the impact of their education and outreach efforts. When San Francisco conducted surveys before and after a pedestrian safety campaign, it found that people who had seen the campaign did in fact have an increased level of knowledge and were more confident in their understanding of right-of-way rules.

Recommendation #17

The City should consider either adding an Evaluation Subcommittee to the Vision Zero Task Force or developing a formal evaluation process to ensure that evaluation and monitoring is completed for the City's engineering, enforcement, and education Vision Zero initiatives. In order to effectively evaluate the City's progress:

- **The evaluation process should include evaluation in terms of both outputs and outcomes which align with the City's Vision Zero goal to eliminate severe traffic collisions and fatalities, including pedestrians, by 2025.**
- **Where necessary, departments should establish additional processes to ensure necessary data is available for evaluation. For example, the San Diego Police Department's Traffic Division may need to establish a new process of collecting and tracking data on citations issued during targeted pedestrian safety enforcement operations.**
- **The Vision Zero Task Force should benchmark with other municipalities that have Vision Zero efforts to help develop and implement evaluation methods.**

The City Can Take Various Steps to Increase Public Awareness of and Improve Accountability for Its Vision Zero Efforts

To ensure that the City is held accountable for taking action to improve pedestrian safety through its Vision Zero efforts, the City should share the implementation of its Vision Zero initiatives and the results of its evaluation and monitoring efforts with the public.

To improve public awareness and accountability, other Vision Zero cities have taken various actions, including but not limited to:

- Requiring periodic progress reports from their respective Vision Zero Task Force;
- Posting an online scorecard tracking the City's progress on its Vision Zero initiatives and the department(s) responsible for each initiative; and
- Posting an online map tracking the progress of engineering projects.

Although the City of San Diego's Vision Zero Task Force has a webpage as part of Circulate San Diego's website, the City does not currently have a website devoted to Vision Zero. As a result, the City is not held accountable to the public for implementing its Vision Zero initiatives and risks losing momentum for improving pedestrian safety.

Recommendation #18

The Chief Operating Officer should direct staff to develop a comprehensive Vision Zero website and post the status of the City's implementation of Vision Zero initiatives on the website. The Chief Operating Officer should also consider directing staff to include this information on the City's Open Data Portal website. (Priority 3)

Conclusion

Pedestrians are highly vulnerable users of the City of San Diego's (City's) transportation network. Compared to traffic collisions as a whole, pedestrian collisions are much more likely to result in severe injuries, pain and suffering, long-term disabilities, or death. In addition, pedestrian collisions result in substantial economic costs, including medical expenses, lost workplace productivity, emergency response costs, and legal expenses, in addition to lost quality of life resulting from disabling injuries and fatalities.

Pedestrian fatalities in the City have significantly increased in recent years—66 pedestrians were killed on City streets between 2013 and 2015, the most of any three-year period since 2001. In an effort to reduce and eventually eliminate traffic fatalities and serious injuries, including for pedestrians, the Mayor and City Council adopted Vision Zero in 2015, which includes a goal of eliminating traffic fatalities and serious injuries by 2025.

As the City moves forward with Vision Zero, existing data on pedestrian collisions and traffic citations can be used to increase the effectiveness of the City's efforts to improve pedestrian safety by informing decisions about where to focus limited infrastructure and enforcement resources. This data can be used to identify the locations and behaviors that place pedestrians at the greatest risk, and set measurable goals for improving the most hazardous locations and targeting the driver violations that cause a substantial portion of pedestrian collisions, injuries, and fatalities.

In addition, incorporating an educational component into enforcement efforts, making targeted pedestrian safety enforcement operations highly visible to increase their exposure to residents and earn media coverage of the City's Vision Zero efforts, and developing a Citywide educational campaign on the importance of pedestrian safety, can all help

produce meaningful behavior change and reduce dangerous behaviors that place pedestrians at risk.

Finally, as the City and its Vision Zero Task Force continue to implement initiatives identified in their Vision Zero Strategic Plan for FY 2017 and develop a longer-term strategic plan, adding additional responsibilities for developing financing and evaluation strategies will help to ensure that funding opportunities and gaps are identified and performance towards meeting Vision Zero goals is measured. In addition, developing a Vision Zero website to communicate current initiatives and performance to the public will increase public awareness and accountability, and will help to ensure that the City's Vision Zero efforts maintain their momentum in the future.

Recommendations

We made 18 recommendations:

Recommendation #1

The Transportation and Storm Water Department should use available data to develop a methodology for identifying the locations that pose the greatest risk to pedestrians. This methodology should utilize at least five years of pedestrian collision data, and incorporate factors such as:

- **The number of pedestrian collisions at each location; and**
- **The severity of pedestrian collisions (injury, severe injury, fatality). (Priority 1)**

Recommendation #2

The Transportation and Storm Water Department (TSW) should establish a goal of proactively evaluating a minimum number of the highest-pedestrian collision locations each year, based on the methodology developed as part of Recommendation #1, and should program and request funding for warranted pedestrian safety infrastructure improvements at each location in accordance with Council Policy 800-14. Performance towards meeting this goal should be publicly reported on an annual basis, such as on the City's Open Data Portal or a future Vision Zero San Diego website (see Recommendation #18).

At each high-pedestrian collision location, TSW should identify and program all improvements, including those warranted under the Pedestrian Crosswalk Guidelines, as well as other improvements that are necessary to increase pedestrian safety, based on TSW's professional judgment.

If any of the warranted improvements cannot be funded in a given year, these improvements should be placed on the Transportation Unfunded Needs List and considered for

funding in future years in accordance with Council Policy 800-14. (Priority 1)

Recommendation #3

The Transportation and Storm Water Department (TSW) should establish a written policy to ensure that, in the event that TSW receives funding for one specific type of pedestrian safety infrastructure improvement (such as pedestrian countdown timers), TSW should utilize the analysis from the methodology developed as part of Recommendation #1, in conjunction with Council Policy 800-14, to ensure that these improvements are placed at the high-pedestrian collision locations where they will have the greatest impact on pedestrian safety. (Priority 1)

Recommendation #4

In the event that the Transportation and Storm Water Department (TSW) is not successful in receiving grant funding to develop a more robust methodology for identifying high-collision locations that takes into account additional factors such as vehicle speeds, TSW should seek other opportunities to fund the development of this methodology. (Priority 2)

Recommendation #5

The San Diego Police Department (SDPD) should set a measurable goal to increase enforcement of the driver violations that are most likely to result in pedestrian injuries and fatalities in the City. This goal should be included in the City's Vision Zero Strategic Plan. To ensure that the enhanced enforcement of certain traffic violations is as effective as possible at improving pedestrian safety, the City should:

- Use a combination of data analysis and SDPD's expertise to determine the violations that SDPD should prioritize.
- Use a method to ensure the public is aware of the violations being targeted.

- Publicly report SDPD's performance towards meeting its measurable goal on at least an annual basis. (Priority 1)

Recommendation #6

The San Diego Police Department should, at least on an annual basis, provide additional training and guidance (for example, in the form of videos) to its officers on the traffic violations that are most dangerous to pedestrians and how to focus enforcement on those violations. (Priority 2)

Recommendation #7

The San Diego Police Department's Traffic Division should use data to determine the locations at which targeted traffic enforcement for pedestrian safety is most needed, and to identify specific violations to target in those locations. This analysis should be conducted on a periodic basis using data from at least a three-year period to better identify trends that may not be apparent when data from shorter time periods is used. (Priority 1)

Recommendation #8

The San Diego Police Department's Traffic Division should publicize its targeted enforcements for pedestrian safety and combine enforcement with education and outreach. These outreach plans should include the following:

- Actions to make targeted pedestrian safety enforcements highly visible to drivers and pedestrians in the targeted area. Examples of actions taken by other jurisdictions to make targeted enforcements highly visible include temporary signage and the use of volunteers to provide information verbally and hand out pamphlets. Signage may be placed at the targeted location in advance of the enforcement effort to increase the number of drivers and pedestrians made aware of the enforcement.
- A strategy to publicize the enforcement effort specifically focusing on earning media coverage to maximize the exposure of residents to enforcement and education efforts. (Priority 1)

Recommendation #9	**The San Diego Police Department should ensure there is training and guidance provided to officers on pedestrian safety which emphasizes that pedestrian safety enforcement operations are about saving lives and positively influencing behavior. This training should also include the importance of educating drivers and pedestrians on the importance of the safety efforts. (Priority 1)**
Recommendation #10	**The Chief Operating Officer should direct staff to develop a Citywide public education campaign designed to raise awareness of pedestrian safety issues and improve driver and pedestrian behavior. (Priority 1)**
Recommendation #11	**The development of Recommendation #10's campaign should be a collaborative approach which includes the Communications Department, any other City departments that can contribute resources and expertise, and community partners, such as Vision Zero stakeholders and advocacy groups, where needed. (Priority 2)**
Recommendation #12	**Recommendation #10's campaign should include a core message that can be customized to fit different neighborhood needs, such as examples of behaviors that have placed pedestrians at risk in specific neighborhoods, or the use of different languages to reach non-English speakers. These messages should be developed using available data on the locations and causes of pedestrian collisions in the City's neighborhoods. If funding is available, development should also utilize focus groups or other research methods to ensure the effectiveness of the campaign. (Priority 2)**
Recommendation #13	**Data should be utilized to place Recommendation #10's campaign media in locations where it will have the greatest effect on awareness, behavior, and safety. (Priority 2)**

Recommendation #14 The Vision Zero Task Force should add identifying funding needs and opportunities to its general responsibilities. (Priority 2)

Recommendation #15 The Vision Zero Task Force should annually determine what engineering, enforcement, and education initiatives the City should consider implementing to achieve its Vision Zero goals, and provide information on funding needs for consideration during the annual budget process. (Priority 2)

Recommendation #16 The Vision Zero Task Force should work to identify and recommend the City pursue additional grants or other funding sources that can be used to further its Vision Zero efforts. (Priority 3)

Recommendation #17 The City should consider either adding an Evaluation Subcommittee to the Vision Zero Task Force or developing a formal evaluation process to ensure that evaluation and monitoring is completed for the City's engineering, enforcement, and education Vision Zero initiatives. In order to effectively evaluate the City's progress:

- The evaluation process should include evaluation in terms of both outputs and outcomes which align with the City's Vision Zero goal to eliminate severe traffic collisions and fatalities, including pedestrians, by 2025.
- Where necessary, departments should establish additional processes to ensure necessary data is available for evaluation. For example, the San Diego Police Department's Traffic Division may need to establish a new process of collecting and tracking data on citations issued during targeted pedestrian safety enforcement operations.
- The Vision Zero Task Force should benchmark with other municipalities that have Vision Zero efforts to help develop and implement evaluation methods.

Recommendation #18 **The Chief Operating Officer should direct staff to develop a comprehensive Vision Zero website and post the status of the City's implementation of Vision Zero initiatives on the website. The Chief Operating Officer should also consider directing staff to include this information on the City's Open Data Portal website. (Priority 3)**

Appendix A: Definition of Audit Recommendation Priorities

DEFINITIONS OF PRIORITY 1, 2, AND 3
AUDIT RECOMMENDATIONS

The Office of the City Auditor maintains a classification scheme applicable to audit recommendations and the appropriate corrective actions as follows:

Priority Class	Description	Implementation Action
1	Fraud or serious violations are being committed, significant fiscal or equivalent non-fiscal losses are occurring.	Immediate
2	A potential for incurring significant or equivalent fiscal and/or non-fiscal losses exist.	Six months
3	Operation or administrative process will be improved.	Six months to one year

Appendix B: Objectives, Scope, and Methodology

Objectives

In accordance with the City Auditor's FY 2016 Work Plan, we conducted a performance audit of the City's programs responsible for improving pedestrian safety. The City's current efforts to improve pedestrian safety include engineering and infrastructure enhancements to improve the design of the City's transportation network, enforcement of traffic laws to deter unsafe behavior, and education and outreach to improve awareness of pedestrian safety issues and improve driver and pedestrian behavior.

These initiatives are undertaken by multiple departments, including the Transportation and Storm Water Department (TSW), which leads the City's efforts to improve pedestrian infrastructure, and the San Diego Police Department (SDPD), which conducts day-to-day traffic enforcement as well as targeted pedestrian safety enforcement operations. SDPD also leads the City's efforts to educate the public about the importance of pedestrian safety, and coordinates these efforts with community advocacy groups.

In addition, in 2015, the Mayor and City Council adopted Vision Zero, a goal of eliminating traffic fatalities and serious injuries by 2025. In early 2016, the City convened a Vision Zero Task Force to guide the City's efforts to improve traffic safety, including pedestrian safety.

Our review of the City's programs responsible for improving pedestrian safety had several objectives, including:

- Assess whether the City effectively prioritizes and implements planned infrastructure improvements that enhance pedestrian safety;
- Determine whether SDPD's day-to-day enforcement efforts are focused on the driver violations that cause the greatest proportion of pedestrian collisions, injuries, and fatalities;

- Evaluate whether SDPD's Traffic Division maximizes the efficiency and effectiveness of its targeted/enhanced pedestrian safety enforcement efforts to produce meaningful behavior change;
- Assess whether the City provides effective pedestrian safety education and outreach to produce meaningful behavior change; and
- Determine whether the City's Vision Zero Task Force has sufficient responsibilities to effectively plan, finance, and evaluate pedestrian safety initiatives and communicate results to the public.

Scope & Methodology

In support of all of the above objectives, we interviewed staff from other cities that have adopted Vision Zero, including New York City, Washington, D.C., the City and County of San Francisco, and the City of Los Angeles, as well as staff from the national Vision Zero Network, in order to identify successful practices; reviewed literature on pedestrian safety trends, collision causes, and costs from the National Highway Traffic Safety Administration, the Governors Highway Safety Association, the Federal Highway Administration, and the California Department of Public Health; interviewed key City staff from TSW, SDPD, the Office of the Mayor, the Planning Department, and the Communications Department, in order to gain an understanding of the City's current efforts to improve pedestrian safety; and interviewed stakeholders in the City of San Diego's Vision Zero initiative, including Circulate San Diego, BAME Community Development Corporation, Safe Kids San Diego, the San Diego Regional Chamber of Commerce, the Asian Business Association of San Diego, the Bike Coalition of San Diego County, and the Pacific Beach Town Council, in order to gain community perspectives on the issue of pedestrian safety in the City of San Diego.

In order to determine which locations have experienced the most pedestrian collisions, injuries, and fatalities, we analyzed collision report data from the Crossroads system on more than 8,000 pedestrian collisions that occurred on City streets between 2001 and 2015. In addition, to evaluate whether the

City has effectively identified and implemented pedestrian safety infrastructure improvements at those locations, we surveyed 80 generally high-pedestrian collision intersections across the City to determine if they had received certain standard, low cost pedestrian safety infrastructure improvements, and analyzed TSW's current methodology for proactively identifying high-collision locations.

To identify which traffic violations cause the greatest proportion of pedestrian collisions, injuries, and fatalities, we reviewed collision report data for 2013 to 2015 from the Automated Regional Justice Information System (ARJIS). To evaluate whether SDPD and SDPD's Traffic Dvision (Traffc Division) effectively direct day-to-day enforcement efforts and targeted pedestrian safety enforcement operations towards the locations and behaviors that place pedestrians at the greatest risk, we analyzed data on more than 300,000 traffic citations SDPD issued from 2013 to 2015, and also reviewed information on the locations of the Traffic Division's targeted pedestrian safety enforcement operations in 2015.

In addition, in order to assess whether targeted enforcement operations and education/outreach efforts reach the maximum number of residents in order to produce meaningful behavior change, we reviewed the Traffic Division's current practices for publicizing targeted enforcement operations and compared the City's current education initiatives with successful campaigns utilized by other cities.

To determine whether the City's Vision Zero Task Force (Task Force) has sufficient responsibilities to effectively plan, finance, and evaluate pedestrian safety initiatives, we reviewed the current initiatives undertaken by the Task Force and compared these to responsibilities undertaken in other cities that are successfully implementing Vision Zero Plans. In addition, to evaluate whether the Task Force is effectively communicating results to the public in order to improve awareness and ensure accountability, we reviewed the Task Force's current plans to publicize information about the City's Vision Zero progress and

compared this to efforts to publicize this information by other cities.

As noted above, we utilized several datasets in our analysis, including data on traffic citations as well as traffic collisions. In order to determine whether the data we obtained was reliable for the purposes of our analysis, we performed several reliability tests, including comparing citation data to traffic citation records, as well as comparing data on traffic collisions across multiple systems (ARJIS and Crossroads). We found that the data was sufficiently reliable for the purposes of our analysis, including determining the locations and causes of pedestrian collisions, as well as evaluating the percentage of traffic citations that are issued for the driver violations that are most dangerous to pedestrians. However, we did note that there are some discrepancies between the traffic collision data contained in ARJIS and Crossroads. For example, ARJIS data from 2001 to 2015 shows approximately 10 percent more pedestrian fatalities than Crossroads data from the same time period. According to SDPD, this may be caused by methodological differences, because ARJIS data reflects delayed fatalities (when someone who initially survives a collision later dies of their injuries), while Crossroads does not. In addition, we identified some differences in how collisions are coded between the two systems, which is likely caused by the City's use of two separate collision tracking systems, requiring data to be entered separately by different staff. TSW and SDPD are aware of these discrepancies, which will be addressed as SDPD transitions to Crossroads in the near future.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides reasonable basis for our findings and conclusions based on our audit objectives.

THE CITY OF SAN DIEGO

M E M O R A N D U M

DATE: September 13, 2016

TO: Eduardo Luna, City Auditor

FROM: Stacey LoMedico, Assistant Chief Operating Officer

SUBJECT: Management Response to the Pedestrian Safety Audit Report

---

This memorandum is in response to the audit recommendations within the Performance Audit on Pedestrian Safety. We would like to thank the Office of the City Auditor's staff for their work and efforts on this performance audit.

Recommendation 1
The Transportation and Storm Water Department should use available data to develop a methodology for identifying the locations that pose the greatest risk to pedestrians. This methodology should utilize at least five years of pedestrian collision data, and incorporate factors such as:

- The number of pedestrian collisions at each location; and the severity of pedestrian collisions (injury, severe injury, fatality). (Priority 1)

Management Response:
Agree. This recommendation was included as an action item in the Vision Zero Task Force's FY17 Vision Zero Strategic Plan, as adopted in June, 2016. The Transportation and Storm Water Department (TSWD) will use available crash data over five years to develop a methodology for identifying locations that pose the greatest risk to pedestrians.

Target Implementation Date: December 2016

Recommendation 2
TSWD should establish a goal of proactively evaluating a minimum number of the highest-pedestrian collision locations each year, based on the methodology developed as part of Recommendation #1, and should program and request funding for warranted pedestrian safety infrastructure improvements at each location in accordance with Council Policy 800-14. Performance towards meeting this goal should be publicly reported on an annual basis, such as on the City's Open Data Portal or a future Vision Zero San Diego website (see Recommendation #18).

At each high-pedestrian collision location, TSWD should identify and program all improvements, including those warranted under the Pedestrian Crosswalk Guidelines as well as other improvements that are necessary to increase pedestrian safety, based on TSWD's professional judgment.

If any of the warranted improvements cannot be funded in a given year, these improvements should be placed on the Transportation Unfunded Needs List and considered for funding in future years in accordance with Council Policy 800-14. (Priority 1)

Management Response:
Agree. TSWD will establish a goal of evaluating a minimum number of the highest-pedestrian collision locations each year. Programming and funding of the current year's infrastructure improvements is subject to Council Policy 800-14.

Target Implementation Date: September 2017

Recommendation 3
TSWD should establish a written policy to ensure that, in the event that TSWD receives funding for one specific type of pedestrian safety infrastructure improvement (such as pedestrian countdown timers), TSWD should utilize the analysis from the methodology developed as part of Recommendation #1, in conjunction with Council Policy 800-14, to ensure that these improvements are placed at the high-pedestrian collision locations where they will have the greatest impact on pedestrian safety. (Priority 1)

Management Response:
Agree. TSWD will establish a written policy to ensure that the methodology developed for Recommendation 1 is a factor in determining where pedestrian infrastructure is improved. The prioritization of improvement locations is subject to Council Policy 800-14, which includes other additional factors that will also be considered.

Target Implementation Date: September 2017

Recommendation 4
In the event that TSWD is not successful in receiving grant funding to develop a more robust methodology for identifying high-collision locations that takes into account additional factors such as vehicle speeds, TSWD should seek other opportunities to fund the development of this methodology. (Priority 2)

Management Response:
Agree. TSWD has applied for a State of California Transportation (Caltrans) grant to fund a citywide crash analysis study that will identify high collision locations. If the department is not successful in securing the grant, staff will seek other opportunities to fund this study.

Target Implementation Date: April 2017

Recommendation 5
The San Diego Police Department (SDPD) should set a measurable goal to increase enforcement of the driver violations that are most likely to result in pedestrian injuries and fatalities in the City. This goal should be included in the City's Vision Zero Strategic Plan. To ensure that the enhanced enforcement of certain traffic violations is as effective as possible at improving pedestrian safety, the City should:

- Use a combination of data analysis and SDPD's expertise to determine the violations that SDPD should prioritize.
- Use a method to ensure the public is aware of the violations being targeted.

Publicly report SDPD's performance towards meeting its measurable goal on at least an annual basis. (Priority 1)

Management Response:
Agree. This recommendation was included as an action item in the Vision Zero Task Force's FY17 Vision Zero Strategic Plan, as adopted in June, 2016. Analyzing the primary causes of accidents over an extensive period of time will help identify violations that are most likely to result in pedestrian accidents.

Target Implementation Date: January 2017

Recommendation 6
The San Diego Police Department should, at least on an annual basis, provide additional training and guidance (for example, in the form of videos) to its officers on the traffic violations that are most dangerous to pedestrians and how to focus enforcement on those violations. (Priority 2)

Management Response:
Agree. Supervisors are required to attend a one week "Command Training" course. Additionally, all officers are mandated to attend a one week Advanced Officer Training (AOT) course every two years. A combination of topics selected by California POST (Police Officer Standards Training) and our Department, make up the week long curriculum. Both formats can be utilized to reinforce all related training.

Target Implementation Date: January 2017

Recommendation 7
The SDPD Traffic Division should use data to determine the locations at which targeted traffic enforcement for pedestrian safety is most needed, and to identify specific violations to target in those locations. This analysis should be conducted on a periodic basis using data from at least a three-year period to better identify trends that may not be apparent when data from shorter time periods is used. (Priority 1)

Management Response:
Agree. The SDPD regularly utilizes data to determine criminal activity trends and assist with policing efforts. These same strategies can be used to address traffic related issues.

Target Implementation Date: January 2017

Recommendation 8
SDPD's Traffic Division should publicize its targeted enforcements for pedestrian safety and combine enforcement with education and outreach. These outreach plans should include the following:

- Actions to make targeted pedestrian safety enforcements highly visible to drivers and pedestrians in the targeted area.
- A strategy to publicize the enforcement effort specifically focusing on earning media coverage to maximize the exposure of residents to enforcement and education efforts. (Priority 1)

Management Response:
Agree. Whenever the SDPD embarks on a campaign of increased enforcement of a particular violation, or a new traffic law, a grace period of issuing warnings to assist with the educational process is commonly utilized. Once the geographical areas of enforcement and specific violations to be enforced are determined, a similar philosophical approach should be considered to acheive a fair and positive result.

Target Implementation Date: January 2017

Recommendation 9
SDPD should ensure there is training and guidance provided to officers on pedestrian safety which emphasizes that pedestrian safety enforcement operations are about saving lives and positively influencing behavior. This training should also include the importance of educating drivers and pedestrians on the importance of the safety efforts. (Priority 1)

Management Response:
Agree. See response to Recommendation 6.

Recommendation 10
The Chief Operating Officer should direct staff to develop a Citywide public education campaign designed to raise awareness of pedestrian safety issues and improve driver and pedestrian behavior. (Priority 1)

Management Response:
Agree. This recommendation was included as an action item in the Vision Zero Task Force's FY17 Vision Zero Strategic Plan, as adopted in June, 2016. The City's Communications Department will be tasked with leading the citywide public education campaign, with the guidance of the Vision Zero Task Force. The campaign will be developed to address Recommendations 10 through 13.

Target Implementation Date: March 2017

Recommendation 11
The development of this campaign should be a collaborative approach which includes the Communications Department, any other City departments that can contribute resources and expertise, and community partners, such as Vision Zero stakeholders and advocacy groups, where needed. (Priority 2)

Management Response:
Agree. See response to Recommendation 10.

Target Implementation Date: See response to Recommendation 10.

Recommendation 12
This public information campaign should include a core message that can be customized to fit different neighborhood needs, such as examples of behaviors that have placed pedestrians at risk in specific neighborhoods, or the use of different languages to reach non-English speakers. These messages should be developed using available data on the locations and causes of pedestrian collisions in the City's neighborhoods. If funding is available, development should also utilize focus groups or other research methods to ensure the effectiveness of the campaign. (Priority 2)

Page 5
Eduardo Luna, City Auditor
September 13, 2016

Management Response:
Agree. See response to Recommendation 10

Target Implementation Date: See response to Recommendation 10.

Recommendation 13
Data should be utilized to place campaign media in locations where it will have the greatest effect on awareness, behavior, and safety. (Priority 2)

Management Response:
Agree. See response to Recommendation 10.

Target Implementation Date: See reponse to Recommendation 10.

Recommendation 14
The Vision Zero Task Force should add identifying funding needs and opportunities to its general responsibilities. (Priority 2)

Management Response:
Agree. Input and recommendations from the Vision Zero Task Force will assist in setting fund priorities. The identification and review of potential grant funding opportunities is already included in the FY17 Vision Zero Strategic Plan, as adopted by the Vision Zero Task Force in June, 2016.

Target Implementation Date: February 2017

Recommendation 15
The Vision Zero Task Force should annually determine what engineering, enforcement, and education initiatives the City should consider implementing to achieve its Vision Zero goals, and provide information on funding needs for consideration during the annual budget process. (Priority 2)

Management Response:
Agree. The Vision Zero Task Force was designed as a collaborative effort to assist the City of San Diego in achieving the goal of the Vision Zero campaign. The input and recommendations of the task force are intended to be part of staff discussions during the annual budget process.

Target Implementation Date: February 2017

Recommendation 16
The Vision Zero Task Force should work to identify and recommend the City pursue additional grants or other funding sources that can be used to further its Vision Zero efforts. (Priority 3)

Management Response:
Agree. See response to Recommendation 14.

Target Implementation Date: February 2017

Recommendation 17
The City should consider either adding an Evaluation Subcommittee to the Vision Zero Task Force or developing a formal evaluation process to ensure that evaluation and monitoring is

completed for the City's engineering, enforcement, and education Vision Zero initiatives. In order to effectively evaluate the City's progress:

- The evaluation process should include evaluation in terms of both outputs and outcomes which align with the City's Vision Zero goal to eliminate severe traffic collisions and fatalities, including pedestrians, by 2025.
- Where necessary, departments should establish additional processes to ensure necessary data is available for evaluation. For example, the San Diego Police Department's Traffic Division may need to establish a new process of collecting and tracking data on citations issued during targeted pedestrian safety enforcement operations.

The Vision Zero Task Force should benchmark with other municipalities that have Vision Zero efforts to help develop and implement evaluation methods.

Management Response:
Agree. Developing an evaluation criteria was already envisioned by the Vision Zero Task Force and is included as a long-term goal within the FY17 Strategic Plan. The Vision Zero Task Force will work with the Department of Performance & Analytics to determine what quantitative and qualitative data would best serve as measurements of success.

Target Implementation Date: December 2017

Recommendation 18
The Chief Operating Officer should direct staff to develop a comprehensive Vision Zero website and post the status of the City's implementation of Vision Zero initiatives on the website. The Chief Operating Officer should also consider directing staff to include this information on the City's Open Data Portal website. (Priority 3)

Management Response:
Agree. The Communications Department along with the Department of Information Technology will work with TWSD and SDPD staff and the Vision Zero Task Force to create the new web page. In addition, staff has already been working with the Department of Performance & Analytics to develop relevant data sets for the City's Open Data Portal.

Target Implementation Date: October 2016

Stacey LoMedico
Assistant Chief Operating Officer

SLM/tm

cc: Stephen Puetz, Chief of Staff, Office of the Mayor
Scott Chadwick, Chief Operating Officer
Mary Lewis, Chief Financial Officer
Paz Gomez, Deputy Chief Operating Officer, Infrastructure & Public Works
David Graham, Deputy Chief Operating Officer, Neighborhood Services
Ronald H. Villa, Deputy Chief Operating Officer, Internal Controls
Rolando Charvel, City Comptroller
Shelley Zimmerman, Chief, Police Department
Judy von Kalinowski, Director, Human Resources Department

Kris McFadden Director, Transportation and Storm Water Department
Mark Jones, Assistant Chief, Police Department
Linda Marabian, Deputy Director, Transportation and Storm Water Department
Joseph Ramos, Captain, Police Department
Marshall Anderson, Director of Council Affairs, Office of the Mayor
Jonathan Herrera, Director of Public Safety & Neighborhood Services, Office of the Mayor