VISION ZERO

LOS ANGELES | 2015-2025

SAFETY STUDY FOR LOS ANGELES

JANUARY 2017


Koreatown
SELF EMPOWERMENT STARTS HERE
www.LASC.edu
RED SOX

CONTENTS

Speeding is the most common cause of collisions.

Traffic collisions is one of the leading causes of death for children and young people.

Unsafe speed is the top contributing factor to collisions resulting in death. At 40 miles per hour, a car gives a pedestrian only a

10% **chance of surviving if struck.**

Just **6%** of our streets are the sites of nearly **two-thirds of the deaths** of all people walking.

We have designated these streets the High-Injury Network (HIN).

KEY FINDINGS

People walking and bicycling are involved in only

14% of all collisions

but account for almost

50% **of all traffic deaths.**

Nearly half of fatal collisions involved a person walking.

A person walking is 16 times more likely to die in a crash than someone in a vehicle.

Hit-and-run collisions accounted for 18 percent of all collisions resulting in a fatality or severe injury, and they accounted for **nearly one-quarter of pedestrian and bicycle collisions** resulting in death or severe injury.


CREDIT
SABINO'S JEWELRY
JEWELRY TRADES
ST VINCENT
PED XING
5th St
AMERICAN
9082461

INTRODUCTION

This Vision Zero Safety Study summarizes the findings of an extensive collision analysis and highlights numerous factors that contribute to the likelihood and severity of collisions. These findings further emphasize what we already know—that no single department can accomplish Vision Zero alone. Given the findings of the safety study, we know that achieving the goals of Vision Zero requires a comprehensive approach that includes engineering, enforcement, education, and a constant evaluation of our progress.

Trends in Traffic Deaths

Los Angeles has the highest transportation death rate among its peer cities.

The story of traffic safety in Los Angeles depends on your vantage point: behind the windshield, from the sidewalk, or above a pair of handlebars. We have made remarkable progress protecting people in passenger vehicles—between 2003 and 2013, the number of people killed in a motor vehicle declined by 45 percent. Yet, we have failed to make similar gains in protecting people walking and bicycling. Also between 2003 and 2013, the number of people killed while walking remains intolerably high. In fact, 2010 was the first year in which the number of people killed while walking surpassed the number of those killed while in a motor vehicle. Additionally, the number of people killed while bicycling and motorcycling is experiencing an upward trend. These statistics are both unacceptable and reversible in a Vision Zero city.

Collision Death Rate (per 100,000 people)

LOS ANGELES	6.27
CHICAGO	5.34
PORTLAND	5.31
SAN DIEGO	5.23
SAN JOSE	4.27
SEATTLE	4.26
BOSTON	3.61
SAN FRANCISCO	3.51
NEW YORK	3.21

Source: National Highway Traffic Safety Administration, *Traffic Safety Facts 2012* (Washington, DC: U.S. Department of Transportation, 2012), accessed November 3, 2016, https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812032.


Alina Shayman &
Maria Velasquez
lost their
lives to a motorist
3/31/09

Traffic Deaths in Perspective

Fatal collisions cost the City of Los Angeles $280 million in 2013.

Collisions cost the average Angeleno $948 annually.

Our commitment to zero deaths by 2025 means that we have pledged to protect those most vulnerable on our streets while ensuring the safety of everyone moving through the city. We know it is possible because we have witnessed success in similar efforts elsewhere. In New York City, traffic deaths have decreased by 34 percent in areas where the city made major engineering changes—twice the rate of improvement at locations without changes.[1]

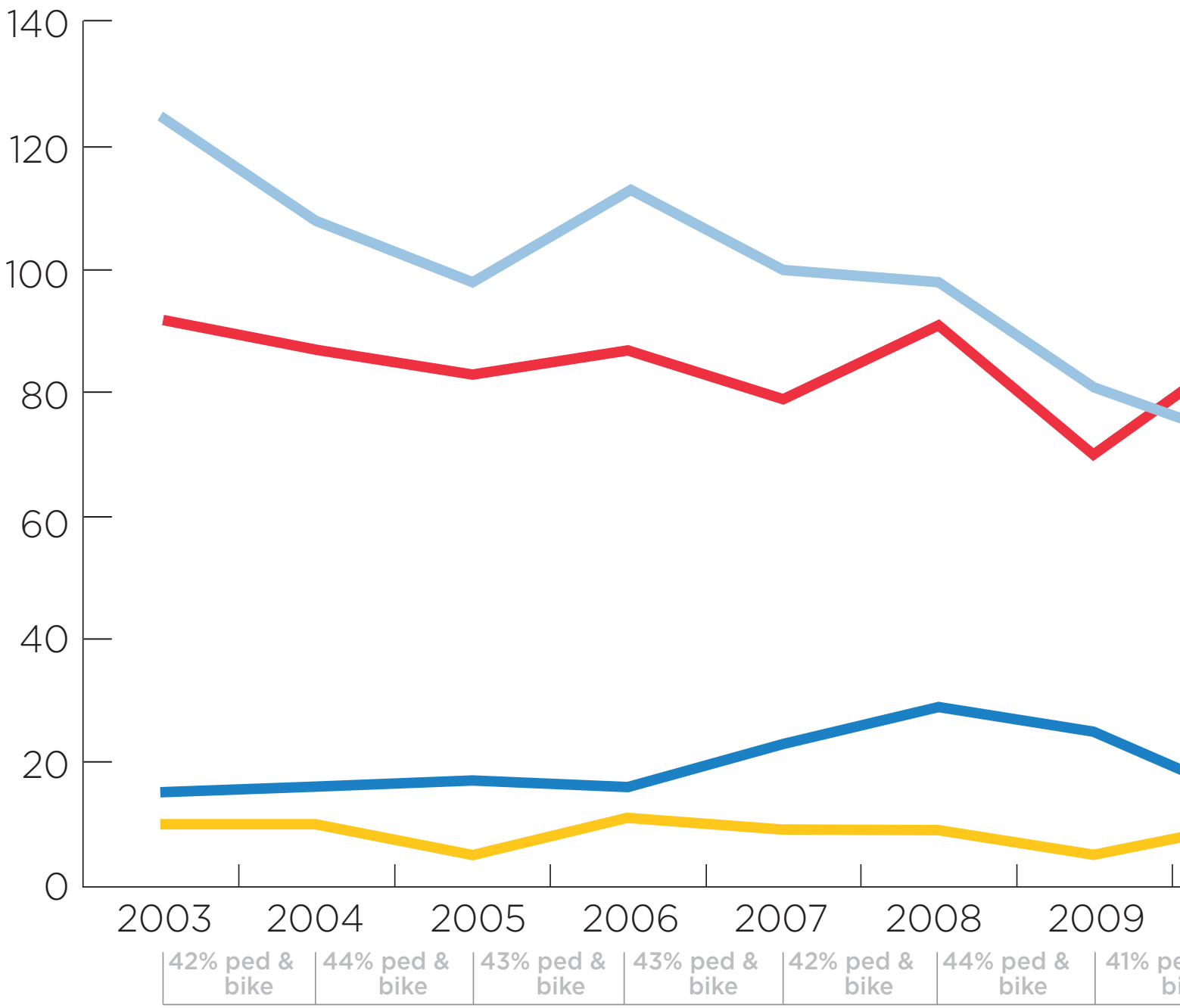
We pay a price if we do not act. Beyond the incalculable human suffering as a result of these tragedies, collisions cost our city in terms of property damage, lost earnings, medical expenses, emergency services, travel delay, workplace costs, and legal fees. Our calculations reveal that collisions cost the City nearly $280 million per year.[2]

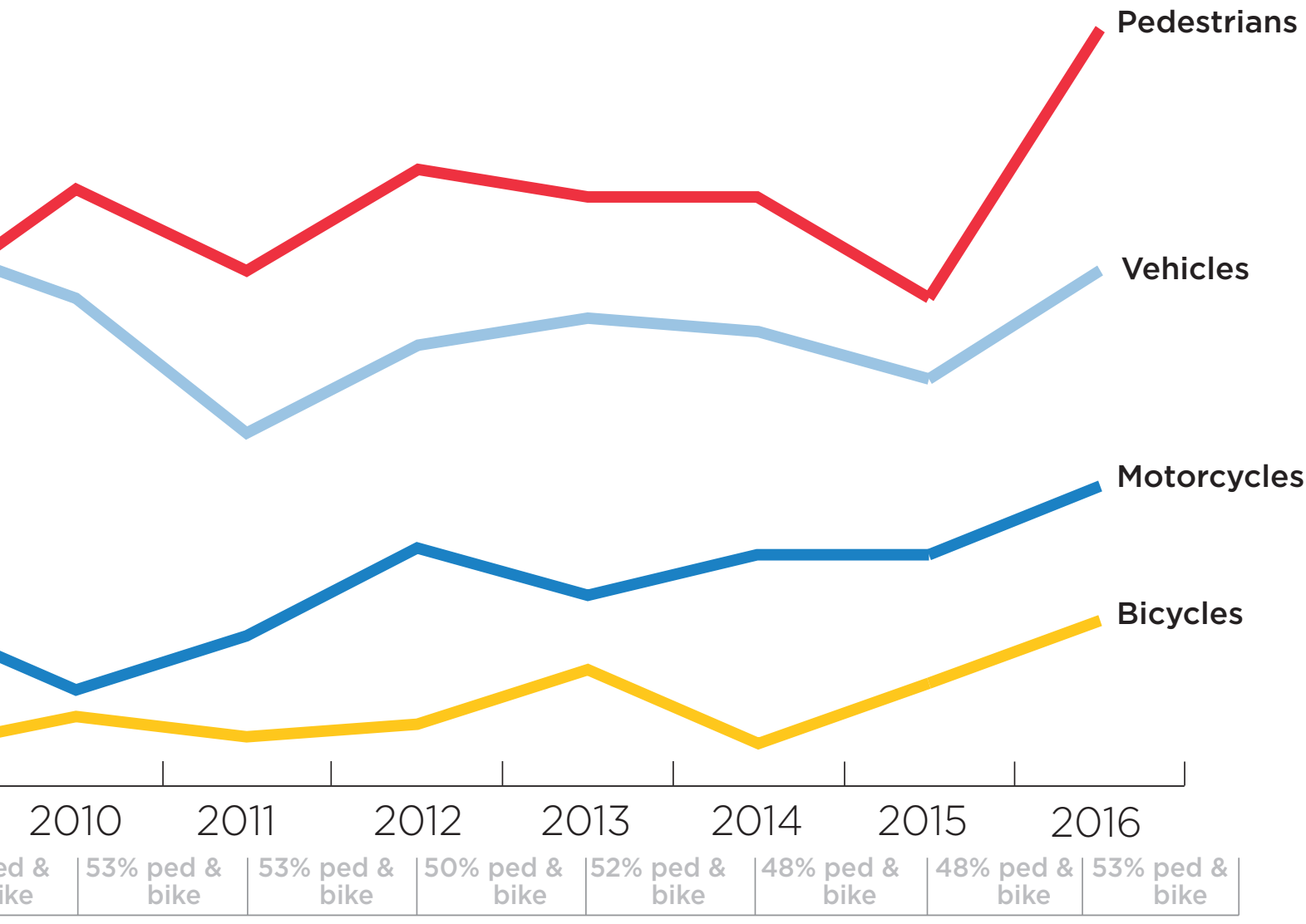
1 City of New York, *Vision Zero Action Plan 2014* (New York: City of New York, 2014), accessed November 3, 2016, http://www.nyc.gov/html/visionzero/pdf/nyc-vision-zero-action-plan.pdf.

2 National Highway Traffic Safety Administration, *The Economic and Societal Impact of Motor Crashes, 2010 (Revised)* (Washington, DC: U.S. Department of Transportation, May 2015), accessed November 3, 2016, https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812013.

Los Angeles Traffic Fatalities 2003–2016

*2015 and 2016 data is provisional




Pedestrians
Vehicles
Motorcycles
Bicycles
2010
2011
2012
2013
2014
2015
2016
ed & ike
53% ped & bike
53% ped & bike
50% ped & bike
52% ped & bike
48% ped & bike
48% ped & bike
53% ped & bike


2 HOUR
PARKING
8AM - 8PM
EXCEPT SUNDAY
VARGAS
SYRUP
desserts
ice cream
waffles
undaes
Cream Float
PEN Late

Study Methodology

This report documents the findings from a descriptive analysis of all collision data on surface streets in the City of Los Angeles between 2009 and 2013, obtained from the publicly available California Highway Patrol Statewide Integrated Traffic Records System. Although 2013 is the most recent year with complete data, we will occasionally reference provisional 2014 and 2015 data when looking at trends in the past few years. As part of our commitment to use more timely and accurate information, the City is working to further streamline data collection and processing so we can better evaluate our actions to make our streets safer.

FREQUENTLY USED TERMS

The focus of Vision Zero and of this report is primarily on the collisions that result in someone being *killed or severely injured* (KSI). As shorthand, we will refer to these types of collisions in our report as *KSI collisions*. Recognizing that many of the factors in a vehicle-to-vehicle collision are different from a vehicle-to-pedestrian collision or a vehicle-to-bicycle collision, our analysis often differentiates the collision by the modes involved. Therefore, a *bicycle KSI collision* refers to a collision that involved someone on a bicycle and resulted in either a severe or fatal injury.

The findings of this report, which informed the development of the City of Los Angeles Vision Zero Action Plan, are divided into categories that answer the who, where, how, why, and when for collisions in Los Angeles. For more detailed information on our methodology, see the accompanying Technical Supplement at **visionzero.lacity.org/t-supplement.zip**.

COLLISIONS IN LOS ANGELES

The Who, Where, How, Why, and When

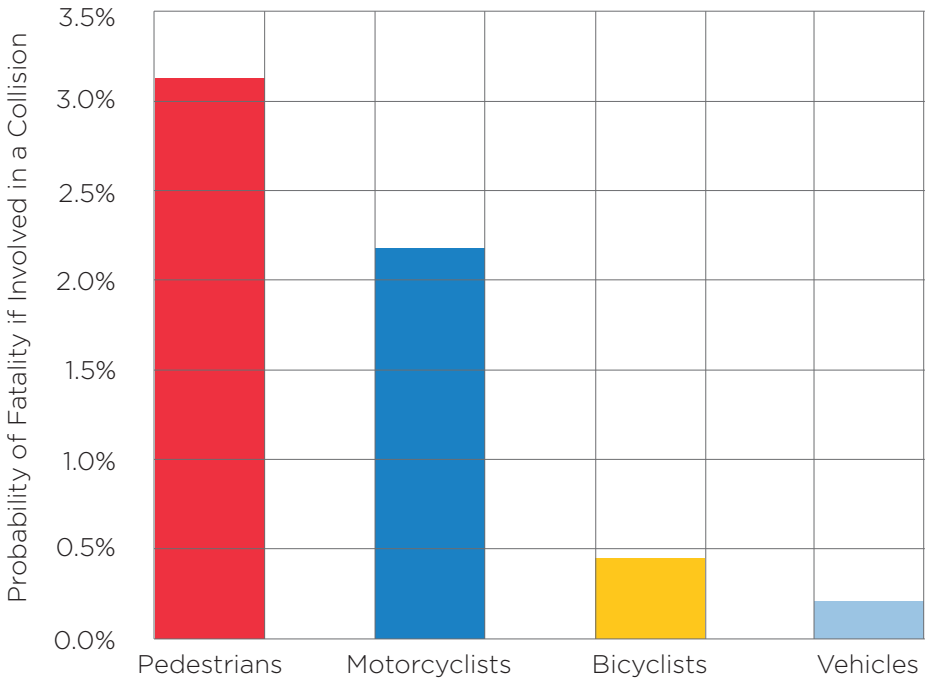
Who: People Who Walk and Bike

A person walking is 16 times more likely to die in a crash than someone in a vehicle.

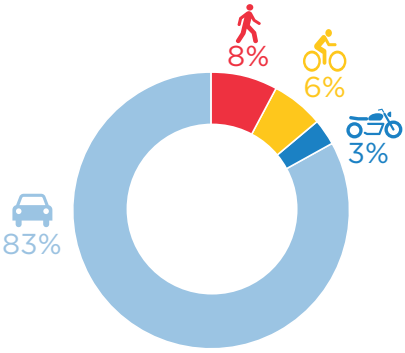
VULNERABLE MODES OF TRAVEL

When a collision occurs in Los Angeles, the likelihood of survival depends mostly on the mode of travel. People who are walking or riding a bicycle are much less likely to walk away from a collision unharmed compared with someone in a car. In fact, a person struck by a motor vehicle while walking is 16 times as likely to be killed compared with a person hit while in a motor vehicle. Those who are unable to walk are even more vulnerable: A recent study found that people who navigate the streets on a wheelchair are 36 percent more likely to be killed compared with the general public.[3] Our City's policymakers, engineers, and planners have a moral imperative to protect those who are at the most risk of death on our streets.

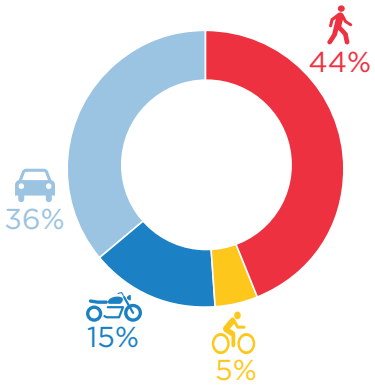
Probability of Dying in a Collision (2009–2013)



3 John D. Kraemer and Connor S. Benton, "Disparities in Road Crash Mortality Among Pedestrians Using Wheelchairs in the USA: Results of a Capture-Recapture Analysis," *BMJ Open* 5 (2015): e008396, accessed October 12, 2016, doi: 10.1136/ bmjopen-2015-008396.



People Involved in Collisions (2009–2013)



People Killed in Collisions (2009–2013)

Focusing on vulnerable road users is not only an ethical objective, but it is also the smartest tactic to achieve zero deaths. Because vulnerable people account for nearly half of all deaths in Los Angeles, a strategy that is focused on protecting people who walk and bike is the most efficient, cost-effective way to reach our targets. Engineering improvements that protect the most vulnerable road users will also make the streets safer for everyone. Protective signal phasing, roadway reconfigurations, and other treatments designed to reduce speeding and separate users have been shown to reduce severe injuries and fatalities for all who use the road. It also is important to remember that we are all vulnerable at some point during the day: when we walk to the car, the bus stop, or to work.

YOUTH AND OLDER ADULTS

Our City's future is tied to our youth: They're tomorrow's thinkers, leaders, and problem-solvers. Unfortunately, traffic collisions are the leading cause of death for children between ages 5 and 14 in the Los Angeles County.[4] The City's Safe Routes to School Initiative recently implemented 11 Safety Zones that dictate a speed limit of 15 miles per hour when children are present.

Older adults in Los Angeles are also particularly at risk, making up a disproportionate share of traffic deaths. Contrary to popular belief, these deaths are not a result of poor driving skills; in fact, only a small (and decreasing) share of fatalities occurred while the person was driving. Rather, older adults are far more likely to be killed while walking because of the errant driving behavior of others. Two-thirds of those killed in 2009–2013 were walking.

As Los Angeles's older adult population continues to grow, it is increasingly important to reverse these trends, especially as more people choose to age-in-place. Los Angeles Mayor Eric Garcetti's Executive Directive No. 17, *Purposeful Aging LA*, has committed the City to more carefully think about the needs of older adults as the City considers building and maintaining its infrastructure, and the directive includes transportation safety as a core component.

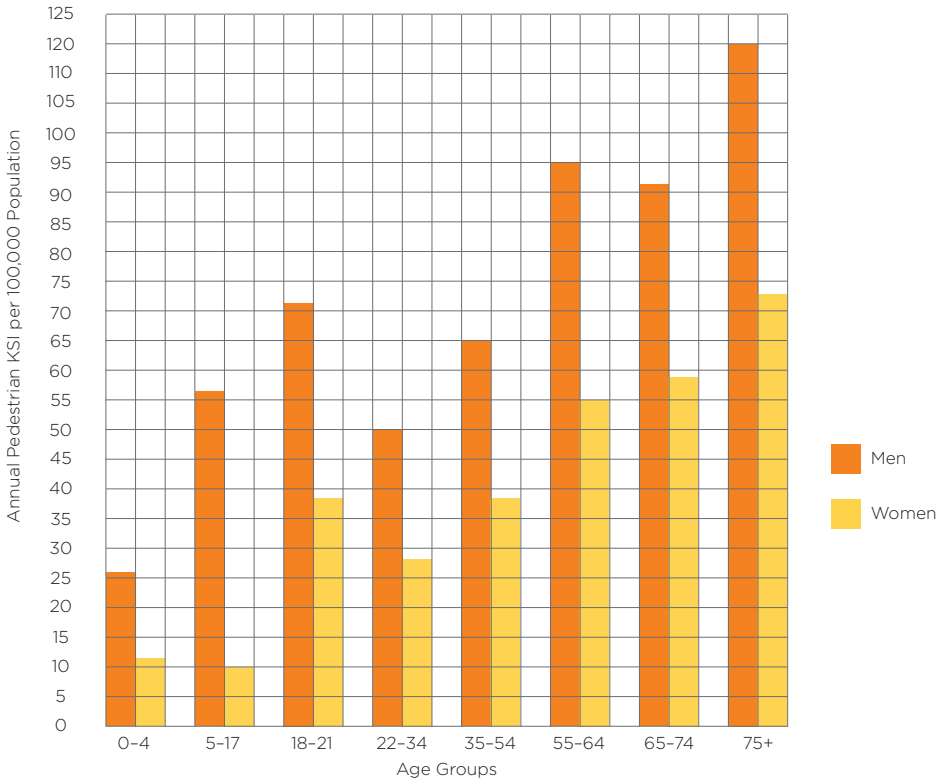
The Safe Routes to School Action Plan and Vision Zero Action Plan contain more information about this program as well as other actions we are taking to protect our youth.

4 *Mortality in Los Angeles County 2012: Leading Causes of Death and Premature Death with Trends for 2003–2012* (Los Angeles: Los Angeles County Department of Public Health, August 2015).

Together, our youth and older adults make up nearly 30 percent of all those killed while walking or bicycling between 2009 and 2013. Vision Zero is our City's mandate to accommodate the unique needs of each age group and to ensure that the design of our streets work for everyone.

Older adults are 11 percent of Los Angeles's population but account for 26 percent of pedestrian fatalities.

Pedestrian KSI by Age and Gender (2009–2013)



Drivers who fail to yield account for 42 percent of motorcycle KSI collisions.

A Spotlight on Motorcycles

Motorcycle riders also belong in the category of vulnerable populations, given their exposure to risk and overrepresentation in the data. They make up only 3 percent of overall collisions but account for 15 percent of all traffic deaths. More than half (52 percent) of all motorcycle KSI collisions were broadside collisions, which typically occur at intersections. An analysis of collision reports shows that a large number of motorcycle KSI collisions are caused by the other party; 42 percent of all motorcycle KSI collisions were the result of drivers failing to yield.

Who: People Who Drive

6 percent of pedestrian and bicycle KSI collisions involved DUIs.

Hit and runs account for 22 percent of pedestrian and bike KSI collisions.

ALCOHOL

In Los Angeles, 22 percent of all fatal crashes involved a driver who had been drinking. These collisions account for a large portion of deaths among people in vehicles (38 percent). Alcohol-related collisions also tend to be more severe; KSI crashes that involved drivers under the influence of alcohol were nearly twice as likely to result in a fatality (27 percent versus 14 percent).

HIT AND RUNS

Collisions involving drivers who flee the scene are especially tragic because victims are often left helpless to receive needed medical care. More than one in five KSI collisions involving someone walking or on a bicycle is a hit and run. Although hit and runs are also common among vehicle-only collisions, the vast majority of these are minor collisions that result in property damage only.

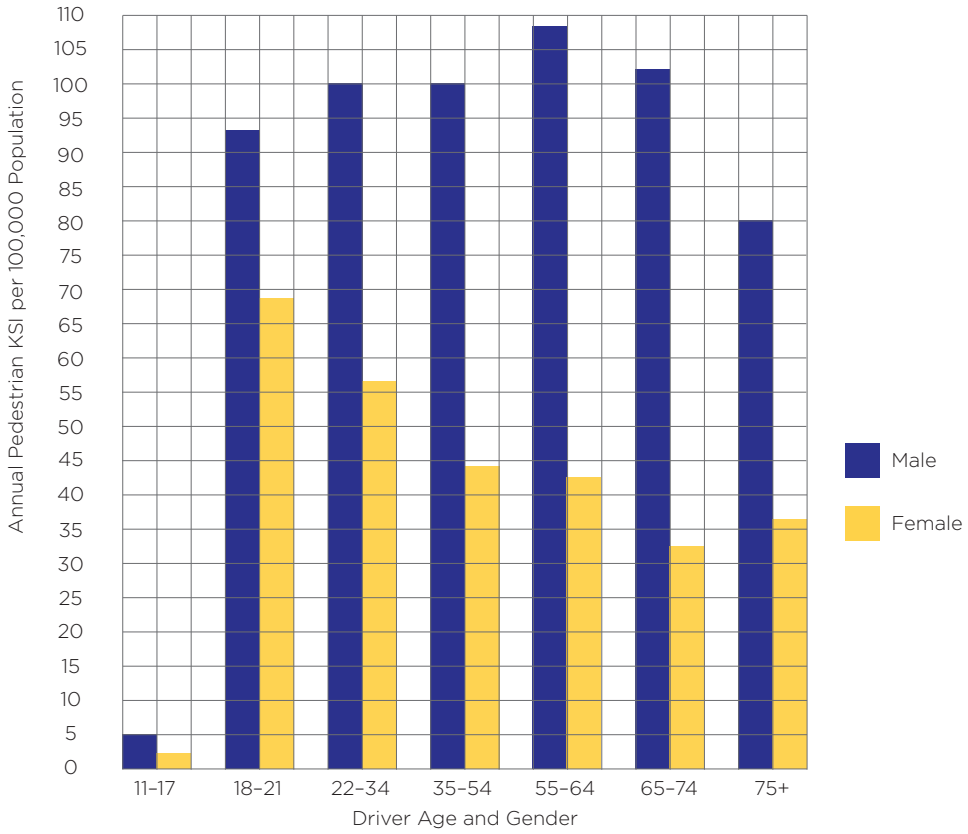
70 percent of pedestrian and bicycle KSI collisions involved male drivers.

33 percent of pedestrian and bicycle KSI collisions involving trucks resulted from a right turn.

GENDER

Similar to the findings in other cities, the drivers that kill and severely injure vulnerable road users are overwhelmingly male. In Los Angeles, 70 percent of pedestrian and bicycle KSI crashes involved male drivers.

Pedestrian and Bicycle KSI by Age and Gender of Driver
(per 100,000 people, 2009–2013)



Where

Major two-way streets account for 92 percent of pedestrian fatalities but only 12 percent of the road network.

THE HIGH-INJURY NETWORK

Los Angeles is a very big city. Despite this, our initial analysis revealed that only a small percentage of our streets account for a large percentage of people killed and severely injured in traffic collisions. Just 6 percent of our streets, which we have designated as the High-Injury Network (HIN), make up nearly two-thirds of all KSIs involving people walking. This network is mostly made up of arterial streets: wide, signalized streets that carry high volumes of traffic and transit ridership, but also serve as commercial corridors where many people run errands or enjoy nightlife on foot. This combination of fast-moving vehicles with many vulnerable people makes collisions not only more frequent but also more deadly—pedestrian KSI collisions on arterial streets in Los Angeles are seven times more deadly compared with collisions on non-arterial streets.

By focusing our efforts on the HIN, we can make the biggest effect in reducing death and severe injury. And, as we make these improvements, we will continue to update the HIN so that it remains a relevant guiding resource.

Nearly three times as many collisions occur at intersections than at mid-block locations.

PRIORITY CORRIDORS

The vast majority (70 percent) of KSI collisions occur at intersections rather than mid-block locations. These intersection-based collisions tend to be along high-collision corridors rather than focused at a few locations, suggesting that corridor-level treatments, especially those targeted at reducing speeding, are likely to be more effective at eliminating fatalities compared with spot-level treatments scattered throughout the City.

Based on this finding, we have identified 39 high-priority corridors within the HIN to begin our work; these are detailed in our Vision Zero Action Plan. If we are successful at eliminating bicycle and pedestrian KSIs along these corridors, we will be on track to meet our first Vision Zero goal: a 20-percent reduction in traffic deaths by 2017 compared with 2016.

Pedestrian KSI collisions on arterial streets are seven times more deadly than collisions on non-arterial streets.

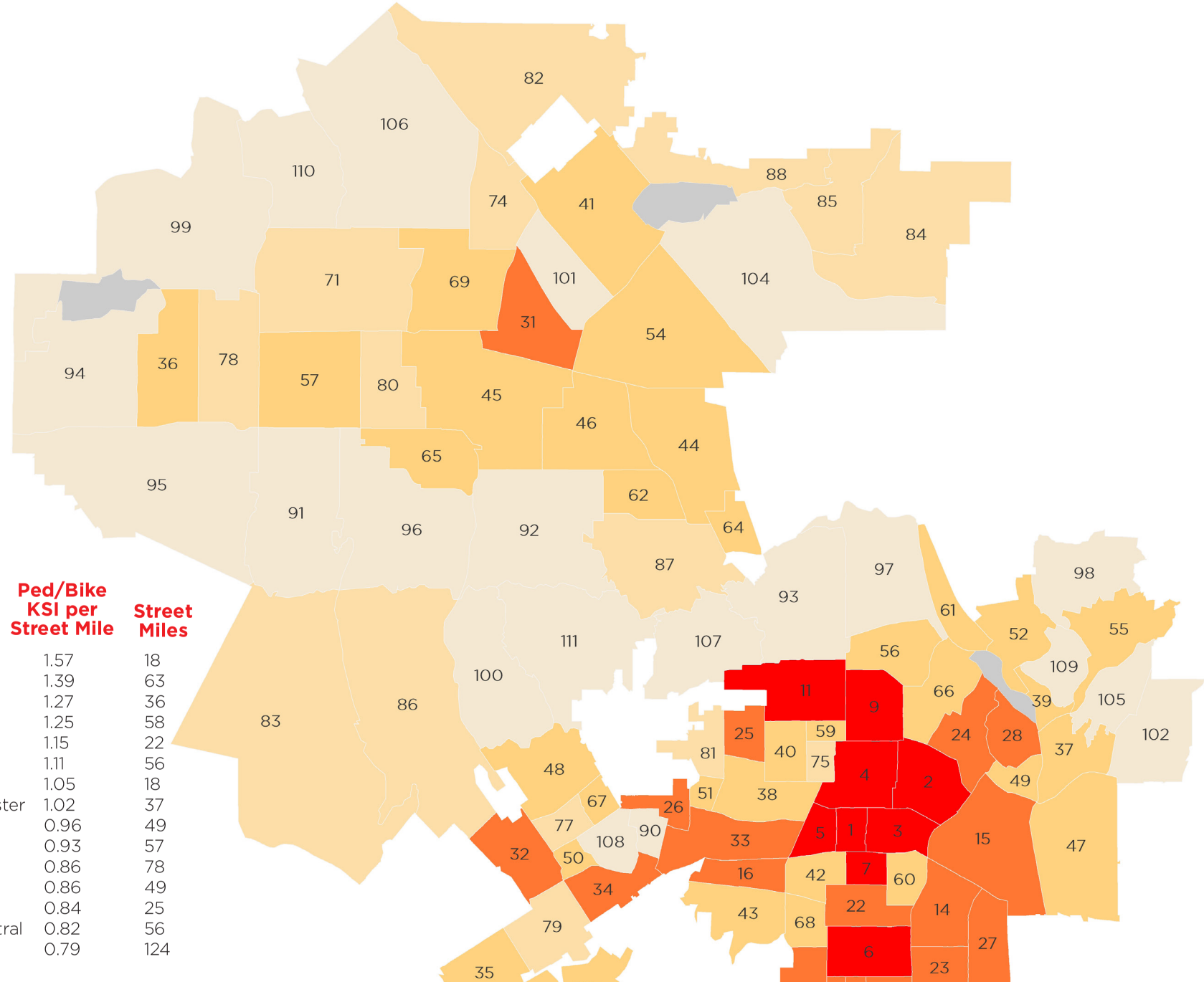
Road safety, like reduced crime rates, is a key factor in attracting and retaining residents to the City.

NEIGHBORHOODS

Not all neighborhoods are equally affected by traffic violence. Unfortunately, many of the areas with the poorest health outcomes also have a disproportionate share of severe and fatal injuries from traffic collisions. Nearly half of the HIN falls within the communities most disadvantaged in terms of health outcomes, as defined by the Los Angeles's Community Health and Equity Index in the Plan for a Healthy Los Angeles.

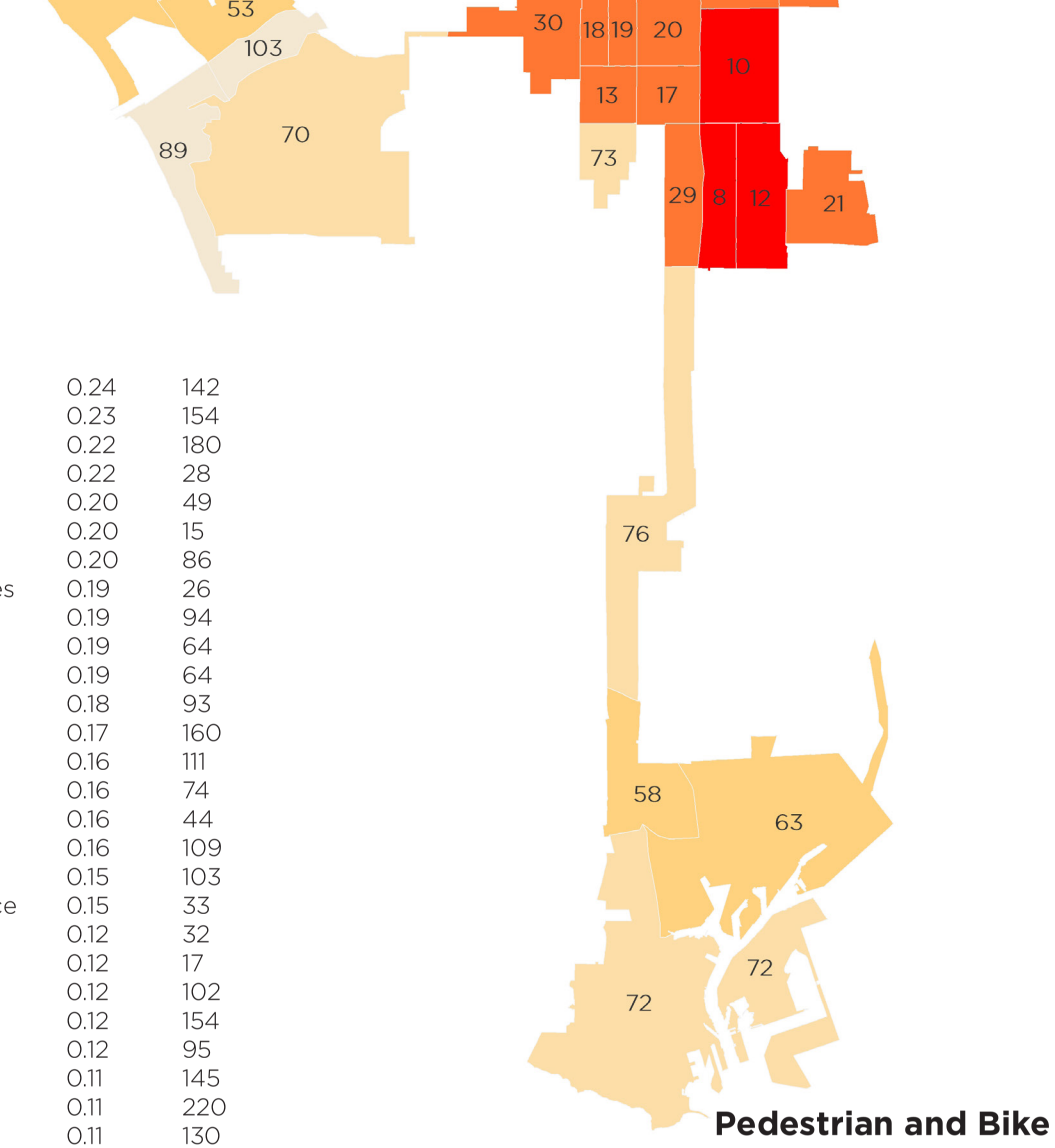
Explore the map on the next page to see how your neighborhood is affected by traffic violence.

PEDESTRIAN AND BIKE KSI PER NEIGHBORHOOD STREET MILE



	Neighborhood	Ped/Bike KSI per Street Mile	Street Miles
1	Harvard Heights	1.57	18
2	Westlake	1.39	63
3	Pico-Union	1.27	36
4	Koreatown	1.25	58
5	Arlington Heights	1.15	22
6	Vermont Square	1.11	56
7	Adams-Normandie	1.05	18
8	Broadway-Manchester	1.02	37
9	East Hollywood	0.96	49
10	Florence	0.93	57
11	Hollywood	0.86	78
12	Green Meadows	0.86	49
13	Manchester Square	0.84	25
14	Historic South-Central	0.82	56
15	Downtown	0.79	124

16	West Adams	0.79	34
17	Vermont Knolls	0.74	26
18	Chesterfield Square	0.71	14
19	Harvard Park	0.70	16
20	Vermont-Slauson	0.65	35
21	Watts	0.65	46
22	Exposition Park	0.63	41
23	South Park	0.62	32
24	Echo Park	0.58	60
25	Fairfax	0.58	28
26	Pico-Robertson	0.58	26
27	Central-Alameda	0.56	48
28	Elysian Park	0.56	11
29	Vermont Vista	0.55	37
30	Hyde Park	0.54	70
31	Panorama City	0.54	68
32	Sawtelle	0.54	60
33	Mid-City	0.51	82
34	Palms	0.50	42
35	Venice	0.48	100
36	Canoga Park	0.46	76
37	Lincoln Heights	0.45	40
38	Mid-Wilshire	0.44	64
39	Cypress Park	0.43	16
40	Hancock Park	0.42	29
41	Pacoima	0.40	111
42	Jefferson Park	0.40	27
43	Baldwin Hills/Crenshaw	0.39	52
44	North Hollywood	0.38	113
45	Van Nuys	0.38	139
46	Valley Glen	0.38	90
47	Boyle Heights	0.38	122
48	Westwood	0.38	56
49	Chinatown	0.37	16
50	Rancho Park	0.33	12
51	Carthay	0.32	12
52	Glassell Park	0.32	46
53	Del Rey	0.32	44
54	Sun Valley	0.32	146
55	Highland Park	0.32	81
56	Los Feliz	0.32	57
57	Reseda	0.30	116
58	Harbor City	0.30	47
59	Larchmont	0.30	10
60	University Park	0.30	23
61	Atwater Village	0.28	28
62	Valley Village	0.28	42
63	Wilmington	0.28	118
64	Toluca Lake	0.26	23
65	Sepulveda Basin	0.26	8
66	Silver Lake	0.26	65
67	Century City	0.26	15
68	Leimert Park	0.25	32
69	North Hills	0.25	87
70	Westchester	0.24	142
71	Northridge	0.23	154
72	San Pedro	0.22	180
73	Gramercy Park	0.22	28
74	Mission Hills	0.20	49
75	Windsor Square	0.20	15
76	Harbor Gateway	0.20	86
77	West Los Angeles	0.19	26
78	Winnetka	0.19	94
79	Mar Vista	0.19	64
80	Lake Balboa	0.19	64
81	Beverly Grove	0.18	93
82	Sylmar	0.17	160
83	Pacific Palisades	0.16	111
84	Tujunga	0.16	74
85	Sunland	0.16	44
86	Brentwood	0.16	109
87	Studio City	0.15	103
88	Lake View Terrace	0.15	33
89	Playa del Rey	0.12	32
90	Beverlywood	0.12	17
91	Tarzana	0.12	102
92	Sherman Oaks	0.12	154
93	Hollywood Hills	0.12	95
94	West Hills	0.11	145
95	Woodland Hills	0.11	220
96	Encino	0.11	130
97	Griffith Park	0.11	28
98	Eagle Rock	0.10	76
99	Chatsworth	0.10	157
100	Bel-Air	0.09	34
101	Arleta	0.08	59
102	El Sereno	0.08	83
103	Playa Vista	0.08	24
104	Shadow Hills	0.08	65
105	Montecito Heights	0.07	42
106	Granada Hills	0.07	162
107	Hollywood Hills West	0.05	86
108	Cheviot Hills	0.04	24
109	Mount Washington	0.02	41
110	Porter Ranch	0.02	93
111	Beverly Crest	0.02	50



Pedestrian and Bike KSI per Neighborhood Street Mile (2009–2013)

- 0.2–0.15
- 0.16–0.25
- 0.26–0.50
- 0.51–0.85
- 0.86–1.57
- No KSI

How

Vehicle-pedestrian collisions are the most common type of KSI collision in Los Angeles.

The most common type of KSI collision in Los Angeles is a vehicle-pedestrian collision, accounting for 31 percent of KSI collisions Citywide. The fact that vehicle-pedestrian collisions make up only 6 percent of all collisions underscores the vulnerability of people walking. Broadside (or T-bone) collisions, where the front or rear of one vehicle collides with the side of another vehicle, bicycle, or motorcycle, account for another 29 percent of KSI collisions.

When looking at the driver behavior just prior to a pedestrian KSI collision, the vast majority of drivers (71 percent) were proceeding straight. This makes sense; it is much more difficult to sustain lethal speeds while making a turn. The following section ("Why") includes more information about the effect of vehicle speed on collisions. Among pedestrian KSI collisions that involved a turn, left turns were three times as common compared with right turns (12 percent versus 4 percent).

Left-turning pedestrian KSI crashes outnumber right turning crashes three to one.

Engineering safety countermeasures, detailed in our Vision Zero Action Plan, will specifically target the driving behaviors and collision types that are most likely to result in severe and fatal injury. For example, scramble crosswalks, which restrict vehicle turns for a brief period while allowing people to cross the street in all directions, prevent collisions between turning vehicles and people walking. We installed a scramble crosswalk at the intersection of Hollywood and Highland, which had an average of 13 transportation injuries per year. In the six-month period following installation of the scramble crosswalk, there was not a single transportation-related injury.

Why

Unsafe speed was a factor in 35 percent of all fatal collisions Citywide.

As driver speed increases, the field of vision narrows.

SPEEDING

High Speeds Increase the Likelihood of Collisions

Vehicle speed affects a driver's peripheral vision. As speed increases, the visual field narrows, limiting the ability of the driver to see other activity on the periphery, such as a person riding a bicycle on the side of the street or a person entering the crosswalk.[5]

In addition to limiting the field of vision, higher speeds also increase the distance required for a driver to stop in time to avoid a collision. In general, doubling the speed of a car increases the total braking distance nearly four times.[6] This combination of limited vision and longer braking distance explains why unsafe speed is the most common violation category among all collisions in Los Angeles.

FIELD OF VISION AT:
20 MPH
10%
DEATH RISK

FIELD OF VISION AT:
40 MPH
80%
DEATH RISK

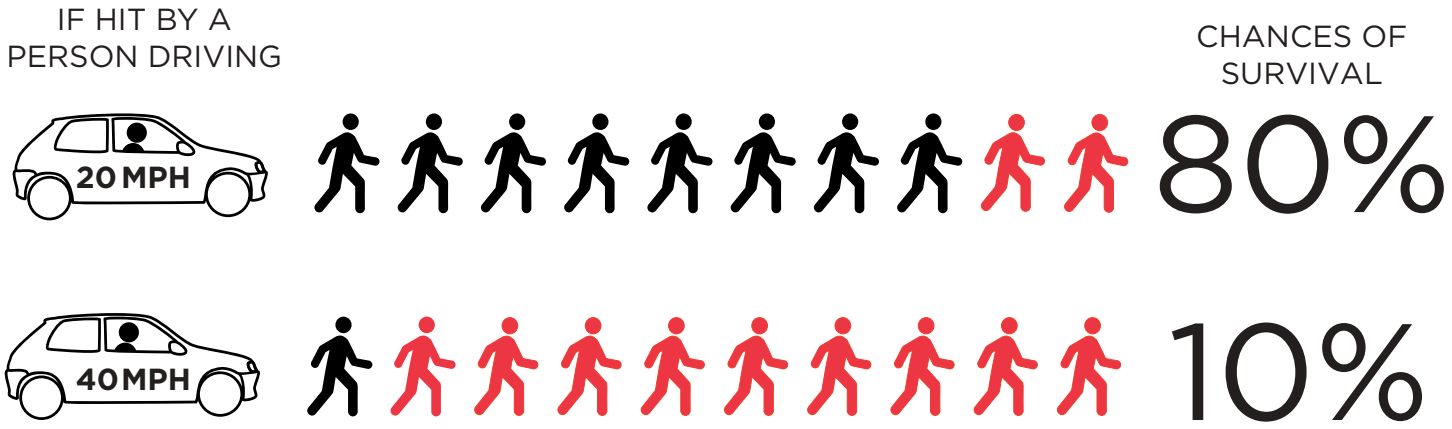
5 Astrid Bartmann, William Spijkers, and Manfred Hess, "Street Environment, Driving Speed, and Field of Vision," in *Vision in Vehicles III* (Evanston, Illinois: Northwestern University, 1991), 381–389.
6 Road Safety Authority, "Stopping distances for cars," in *Rules of the Road* (Dublin, Ireland: The O'Brien Press Ltd, March 2015, 115–19, accessed November 3, 2016, http://www.rotr.ie/Rules_of_the_road.pdf.

High Speeds Dramatically Increase the Severity of Collisions
Research consistently shows the destructive potential of vehicles traveling at high speeds. Our Los Angeles data confirm these findings: Unsafe speed contributed to 35 percent of all fatal collisions Citywide.

The effect of vehicle speed on the likelihood of survival depends on the transportation mode of the other party involved in the collision. For vehicle-to-vehicle collisions, numerous technological advances in vehicle design have improved the likelihood of survival. Unfortunately, people walking or bicycling do not have many of the same protective features, making them more vulnerable when hit by vehicles traveling at speeds greater than 20 miles per hour. A U.S. Department of Transportation review of studies to date found that increasing vehicle speed from 20 miles per hour to 40 miles per hour increases the likelihood of a pedestrian death when hit from 10 percent to 80 percent.[7]

Speed is especially lethal for vulnerable users like people walking and biking.

This explains why arterial streets, which combine a high number of vulnerable people with cars moving at relatively high speeds, are so deadly and make up a high proportion of the HIN.



7 W. A. Leaf and D. F. Preusser, *Literature Review on Vehicle Travel Speeds and Pedestrian Injuries* (Washington, D.C.: U.S. Department of Transportation, National Highway Traffic Safety Administration, October 1999).

Failure to Yield

After speeding, another important factor causing KSI collisions is failing to yield. Drivers must yield to pedestrians crossing with a light at a signalized intersection or within a crosswalk elsewhere. This includes unmarked crosswalks: crossing locations at intersections without markings specifically delineating a space for crossing. Drivers failing to yield to pedestrians account for 26 percent of all pedestrian KSI crashes. Intersection engineering treatments—such as leading pedestrian intervals, which give a pedestrian a "head start" when entering the intersection—improve the yielding rate of drivers at signalized intersections.

When

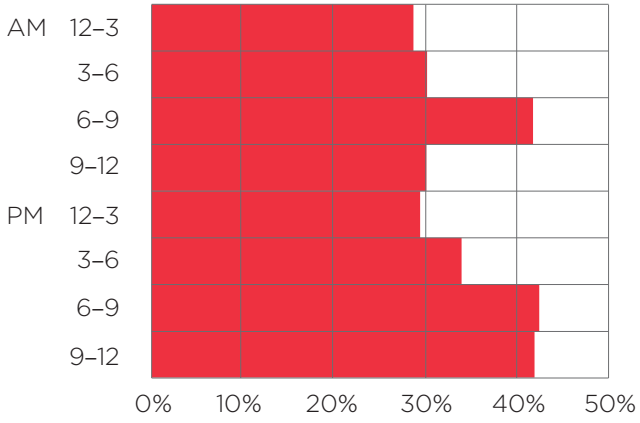
MONTH/SEASON

Owing to our year-round temperate climate, the strong seasonal patterns for traffic collisions found in other cities are far less apparent in Los Angeles. Collisions involving someone on a bicycle tend to be somewhat more common during the summer months, while those involving someone walking are more frequent in the fall and winter months.

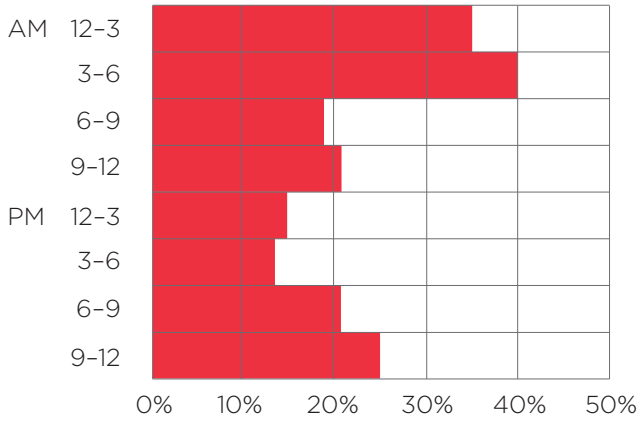
DAY OF THE WEEK

While there were no large differences between days of the week, Fridays experience the highest number of KSI collisions involving trucks, motorcycles, and people walking or bicycling. KSI collisions involving only passenger vehicles were most common on weekends.

Pedestrian KSI by Time of Day (2009–2013)



Pedestrian KSI by Time of Day Percentage Fatal (2009–2013)



KSI collisions are highest between 6:00 p.m. and 9:00 p.m.

TIME OF DAY

The time of day is an important factor in the incidence of collisions and the severity of any resulting injuries. Although the highest number of all collisions occurred between 3:00 p.m. and 6:00 p.m., KSI collisions peak between 6:00 p.m. and 9:00 p.m., a difference explained by a large increase in the number of people killed or severely injured while walking. As many Angelenos return from work and opt to run errands or enjoy nightlife on foot, our streets have more vulnerable people than at other times. Although the 3:00 a.m. to 6:00 a.m. period sees the least overall number of collisions, those collisions are the most likely to result in death.


SOUVENIRS
OF
HOLLYWOOD
GIFTS & SOUVENIRS
½ HOUR PHOTO
GIFTS &
½ HOUR
Hollywood
DO NOT
BLOCK
INTERSECTION
CAPITAN

NEXT STEPS TOWARD ZERO

It's Time for Action

With the recognition that our first Vision Zero target—a 20-percent reduction in deaths by the end of 2017—is right around the corner, we have prioritized locations where we will be focusing our engineering, education, and enforcement strategies. The City of Los Angeles's Vision Zero Action Plan, informed by the findings in this report, presents our comprehensive Citywide approach to make traffic deaths obsolete by 2025.

The Hollywood Boulevard and Highland Avenue intersection saw an average of 13 crashes per year before the installation of a scramble crosswalk in November 2015. In one year after implementation, zero pedestrian collisions have occurred at the busy intersection: a dramatic improvement.

ACKNOWLEDGMENTS

Los Angeles Department of Transportation

Seleta Reynolds
Daniel Mitchell
Nader Asmar
Pauline Chan
Tim Black
Jacqui Swartz
Nat Gale
Brian Oh
Valerie Watson

Los Angeles County Department of Public Health

Jean Armbruster
Chandini Singh
Kim Porter

For information on Vision Zero
visit **visionzero.lacity.org**
e-mail **visionzero@lacity.org**

IMAGE CREDITS

Cover Page: LADOT
Page 2: LADOT
Page 6: LADOT
Page 8: Todd Shaffer
Page 12: LADOT
Page 14: Mike Meadows
Page 17: LADOT
Page 18: LADOT
Page 19: LADOT
Page 20: LADOT
Page 23: Rosa Trieu/Neon Tommy
Page 27: LADOT
Page 29: LADOT
Page 30: LADOT
Page 32: LADOT
BACK COVER: LADOT

For information on Vision Zero
visit **visionzero.lacity.org**
email **visionzero@lacity.org**