2014 Bicycle Collision Summary

City of Phoenix
STREET TRANSPORTATION DEPARTMENT

TRAFFIC SERVICES DIVISION
TRAFFIC SAFETY SECTION
2016
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Introduction

The 2014 Bicycle Collision Summary provides a brief analysis of bicycle collision statistics related to demographics, accident types, and locations. The report also includes collision data from 2010 through 2014 to identify and track bicycle collision trends that have emerged during the past five years. These statistics provide a strong indication of roadway behaviors that negatively impact bicyclists’ safety and helps identify which violations should be prioritized for increased education and enforcement.

The 2014 collision summary includes a reported 457 bicycle-related collisions resulting in 397 injuries and 11 fatalities. These bicycle-related collisions accounted for 2 percent of all collisions, 3 percent of all injuries, and 7 percent of all fatalities occurring on City Streets. Statistics show that the number of collisions is down (5.8 percent) as compared to the 2013 collisions, the 5-year trend is nearly flat. Consistent with previous years, male bicyclists were involved in more collisions at a male:female ratio of 3.3:1. Also, the age groups with the highest number of bicycle-related collisions were adults between the ages of 26 and 45. The majority (74 percent) of collisions occurred within 150 feet of an intersection.

The findings in this report are used to inform and influence the design of new bicycle facilities, the redesign of existing roadways, the development of education programs and enforcement campaigns for bicyclists and motorists. In an effort to identify locations and collision trends that may require special attention, this report also identifies intersections and street segments with the highest annual bicycle injury collisions.

NOTE: Some figures in the 2014 Bicycle Collision Summary differ from the 2013 Traffic Collision Summary due to the detailed analysis of crash reports.
2014 Phoenix Bicycle Collision Facts-at-a-Glance

Important Points to Know About the Bicycle Collision Summary in 2014:

- Bicycle collisions are on a three year decreasing trend.
- Nearly three of four collisions occurred at or within 150 feet of an intersection.
- More than eight of ten non-intersection-related collisions occurred on an arterial street.
- Many collisions occurred while the motorist was making a right-hand turn.
- There is less than one in ten chance for bicyclists not to be injured in a collision.

In 2014,

- Bicycle collisions in 2014 accounted for 2% of all traffic collisions, 3% of all injuries, and 7% of all fatalities.
- 14% of bicyclists were children below the age of 18 (5% lower than 2013).
- 32% of all collisions occurred in an intersection crosswalk and 20% at driveways.
- 37 school-age bicyclists (5 to 18 years old) were hit during school hours (Monday – Friday, 7 AM – 4 PM).
- Only 28% of all bicycle collisions occurred at night, including twilight, but 55% of all bicyclist fatalities occurred at night.
- Bicycle collisions occurred most frequently between the hours of 3 PM and 6 PM and on Wednesdays.
- October had the highest number of bicycle collisions at a total of 59.
- Only 14 bicyclists and no drivers were found to be under the influence of alcohol or drugs.
- 42% of all bicycle collisions occurred at uncontrolled locations.
- There were 49 hit and run collisions involving bicycles.
Five-Year Trend of Bicyclist-Involved Collisions, Injuries, and Fatalities

Key Note: The 10 year average is 474 collisions.
Phoenix named a 2014 Bicycle Friendly Community by the League of American Bicyclists.
### Age and Gender of Bicyclists in Collisions

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Female</th>
<th>Male</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 5</td>
<td>12</td>
<td>5</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>6 - 11</td>
<td>42</td>
<td>7</td>
<td></td>
<td>49</td>
</tr>
<tr>
<td>12 - 17</td>
<td>45</td>
<td>7</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>18 - 25</td>
<td>65</td>
<td>22</td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>26 - 35</td>
<td>59</td>
<td>27</td>
<td></td>
<td>86</td>
</tr>
<tr>
<td>36 - 45</td>
<td>55</td>
<td>18</td>
<td></td>
<td>73</td>
</tr>
<tr>
<td>46 - 55</td>
<td>62</td>
<td>22</td>
<td></td>
<td>84</td>
</tr>
<tr>
<td>56 - 65</td>
<td>36</td>
<td>4</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>66 - Up</td>
<td>16</td>
<td>1</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>397</td>
<td>11</td>
<td>457</td>
</tr>
</tbody>
</table>

#### Key Note:
Children (below 18 years of age) account for 14% of all bicycle collision victims.

Bicyclists

- Male : Female
  - 3.3 : 1
Age and Gender of Drivers in Collisions

Note: There were 100 hit and runs.
Bicyclists in Collisions by Light Conditions

Night
- 6 Fatal Collisions (55%)
- 110 Injury Collisions (28%)
- 127 Total Collisions (28%)

Day
- 5 Fatal Collisions (45%)
- 287 Injury Collisions (72%)
- 330 Total Collisions (72%)

Citywide All Collisions

Collision Severity by Light Conditions 2014

Night
- 100 Fatal Collisions (64%)
- 2,583 Injury Collisions (27%)
- 6,964 Total Collisions (27%)

Day
- 57 Fatal Collisions (36%)
- 6,334 Injury Collisions (73%)
- 18,988 Total Collisions (73%)
Bicyclists in Collisions by Injury Severity

Key Note:
There were 202 minor injuries, 44 serious injuries, and 11 fatalities.
***56% of bicyclists in collisions were minor, serious injured or killed.

Note: This collision summary accounts for bicycle collisions with vehicles, not single bicycle collisions or two-bicycle collisions.
Bicycle to Work day at Phoenix Cityscape April 2014
Bicyclist-Involved Collisions by Time of Day and Age Group

Key Note: 6/11 fatalities occurred after 5PM.
Bicyclist-Involved Collisions by Day of Week

Key Note: Wednesday saw the highest number of collisions and fatalities.
Bicyclist-Involved Collisions by Month

Key Note: 20% increased collisions in October from 2013.
Actions of Bicyclists and Drivers

**Bicyclists**
- Straight riding with traffic, 22%
- Straight riding against traffic, 37%
- Disregarded signal/sign, 9%
- Rode opposing traffic, 13%
- Failed to yield, 14%
- Other, 18%
- No violation, 29%

**Drivers**
- Right turn, 45%
- Straight, 33%
- Left turn, 12%
- Other, 4%
- Unknown, 4%
- Stopped, 2%

Behavior/Violations of Bicyclists and Drivers

**Bicyclists**
- No violation, 60%
- Faulty/missing equipment, 1%
- Speed too fast, 2%
- Inattention, 2%
- Did not use crosswalk, 2%
- Unsafe maneuver, 3%
- Disregarded signal/sign, 9%
- Unknown, 7%

**Drivers**
- No violation, 60%
- Faulty/missing equipment, 2%
- Unsafe maneuver, 2%
- Inattention, 5%
- Disregarded signal/sign, 2%
- Unknown, 11%
- Failed to yield, 16%
- Speed too fast, 3%
- Other, 1%
Who Was Cited?

Most frequent citations issued to...

**Bicyclists**
- Failure to keep to the right-hand curb
- No lights at night
- Unsafe rail road crossing

**Drivers**
- Driving without proof of insurance
- Driving without proof of valid drivers license
- Making an improper turn

Key Note: 41 bicyclists were issued 45 citations and 64 drivers were issued 93 citations.
Phoenix buffered bike lanes on 15th Avenue near Encanto Boulevard August 2014
Physical Conditions of Bicyclists and Drivers

Key Note:
There were 5 minor injuries, no serious injury, and 3 fatalities involving drugs and/or alcohol.

Injury Severity of Bicyclists under the Influence

Under the Influence
Male:Female
5.5 : 1
Five-Year Trend of Drug or Alcohol Use in Bicyclist-Involved Collisions

- **Intoxicated Incidents**
  - **2010**: 19
  - **2011**: 24
  - **2012**: 23
  - **2013**: 25
  - **2014**: 14

- **Trend Line**: Showing a decreasing trend over the years.

- **Legend**:
  - Green: Both
  - Navy: Driver
  - Blue: Bicyclist
Bicyclist-Involved Collisions by Street Classification

**Intersection-Related**
76% of all bicycle collisions

**Non-Intersection-Related**
24% of all bicycle collisions

**Street Classification Examples**

- Freeways are I-17 (Black Canyon Freeway), I-10, Loop 202, on-ramps, access roads, etc.
- Arterial streets are typically the mile-line streets such as 7th Ave, 16th St, Camelback Rd, and Union Hills Dr as defined on the Phoenix Street Classification Map.
- Collector streets are typically the half-mile-line streets such as 39th Ave, 28th St, Roeser Rd, and Maryland Ave as defined on the Phoenix Street Classification Map.
- Local streets are typically the neighborhood streets such as 88th Ln, Dromedary Rd, Holly St, 21st St, and Glenn Dr and are not defined as arterial or collector streets.
Bicyclist-Involved Roadway Collisions

Total Roadway Related Crashes

**Unmarked Crosswalks**
- 56 Collisions
- 45 Injuries - 1 Fatality
- 12% of all collisions

**Travel Lanes**
- 45 Collisions
- 35 Injuries – 5 Fatalities (45%)
- 10% of all collisions

**Mid-Block**
- 32 Collisions
- 29 Injuries - 1 Fatality
- 7% of all collisions

**Intersection Crosswalks**
- 146 Collisions
- 133 Injuries - 1 Fatality
- 32% of all collisions

**Driveways**
- 94 Collisions
- 83 Injuries – 0 Fatalities
- 20% of all collisions

**Within Intersection**
- 45 Collisions
- 39 Injuries – 3 Fatalities
- 10% of all collisions

**Bike Lanes**
- 19 Collisions
- 16 Injuries - 0 Fatalities
- 4% of all collisions

**NOTE:** There were 6 bicyclists hit on sidewalks and 14 in other/unknown locations resulting in 17 injuries, 5% of all collisions
Bicyclist-Involved Collisions and Traffic Control

Uncontrolled Locations
190 collisions
42% of all collisions
163 injuries – 6 fatalities

STOP Sign Controlled Locations
92 collisions
20% of all collisions
81 injuries – 3 fatalities

Signalized Locations
161 collisions
35% of all collisions
141 injuries – 2 fatalities

NOTE: There were 2 bicyclists hit in a construction zone and 12 at unknown controls (3% of all collisions) resulting in 12 injuries.
Key Note:
Bicyclists struck riding against traffic were 37% of all crashes.

Direction of the Vehicle Impact with Bicyclist

250
100 – Intersections
79 – Driveways
39 – Unmarked crosswalks
20 – Mid-block
5 – Bike Lane
4 – Travel Lanes
3 – Sidewalk

77
50 – Intersections
8 – Mid-block
8 – Unmarked crosswalks
4 – Driveways
4 – Bike Lane
1 – Travel Lanes
1 – Sidewalk

NOTE: 17 unknown
Mayor Greg Stanton launches Phoenix GRiD Bike Share November 2014
Total Bicyclist-Involved Collisions by Zip Code of Bicyclist

Bicyclists Hit per 10,000 Resident
- 0 to 1
- 2 to 3
- 4 to 5
- 6 to 7
- 8 and Up
Bicyclist-Involved Collisions by Zip Code of Collisions Location and High Bicyclist-Involved Collision Intersections
(Within 150 feet of the intersection)

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>16th St &amp; Thomas Rd</td>
<td>3</td>
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</tbody>
</table>

Bike Collision Locations per 10,000 Resident

- 0 to 1
- 2 to 3
- 4 to 5
- 6 - 7
- 8 and Up
The 2014 Phoenix Bicycle Collision Summary documents the collisions involving bicyclists in the City of Phoenix throughout the 2014 calendar year. Collision data utilized for this report was acquired through Phoenix Police records and the database maintained by the Arizona Department of Transportation (ADOT) known as Safety Data Mart (SDM). The 2014 Phoenix Bicycle Collision Summary was prepared by Traffic Safety Section staff Richard Russ (Principal Engineering Technician), Jacob Martinez (Senior Engineering Technician) and Kerry Wilcoxon (PE, Traffic Engineer III) with assistance from Joseph Perez (Traffic Engineer II) and Joel Davidson (Signal Technician).

The SDM database includes motor vehicle crashes involving bicyclists that occurred on public right of way where someone was injured or killed or where property damage exceeded $1,000.

Cover photograph: Lowell Elementary Bike to School Event, September 2014
Photograph courtesy Don Cross (School Safety Program)

Presentation photographs courtesy Joseph Perez (Bicycle Coordinator)

This publication can be made available in an alternative format upon request. Contact the Street Transportation Department at 602-262-6284 if you would like any of these services. Our TTY phone number is 711.
Questions?

Please contact Street Transportation Department at 602-262-6284 or TTY 711