

Health in Bicycle and Pedestrian Planning

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Healthy Community Design

Increases physical activity

Reduces injury

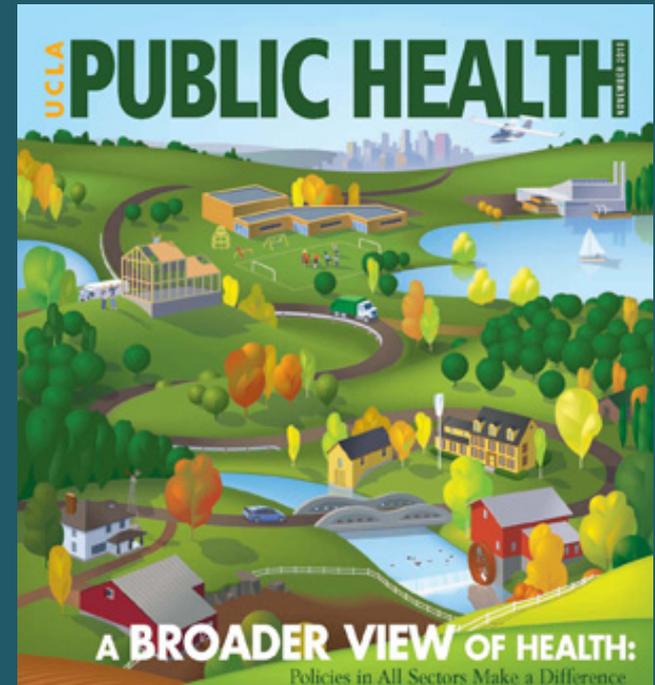
Increases access to healthy food

Improves air and water quality

Minimizes the effects of climate change

Decreases mental health stresses

Strengthens the social fabric of a
community





Injury – ADOT Incident Data

2009, 2010, 2011 & 2012

Google Fusion Map

<http://azbikelaw.org/blog/crashmap-data/>

Descriptive statistics – data isn't adjusted for overall population or number of cyclists



Injury – ADOT Incident Data

- **Incident**

DateTime: 2011-12-04 10:34:00

City: PHOENIX **County:** MARICOPA

OfficerNcic: 723 **ExtendedNcic:** 723

CollisionManner: OTHER_97

LightCond: DAYLIGHT **TotalNumUnits:** 2

InjurySeverity: FATAL

HitAndRunFlag: 0 **Weather:** CLEAR

OnRoad: Central Ave **Cross St:** Pima St

JuncRelation: INTERSECTION_NON_INTERCHANGE

- **Cyclist Info**

NonMotLoc: AT_INTERSECTION_BUT_NO_CROSSWALK

UnitNum: 1 **Age:** 64/Male

Violation1: FAILED_TO_YIELD_RIGHT_OF_WAY_103

SafetyDevice: NONE_USED

Lane: TWO_WAY_LEFT_TURN_0 **TravelDir:** EAST

UnitAction: CROSSING_ROAD

Driver Info

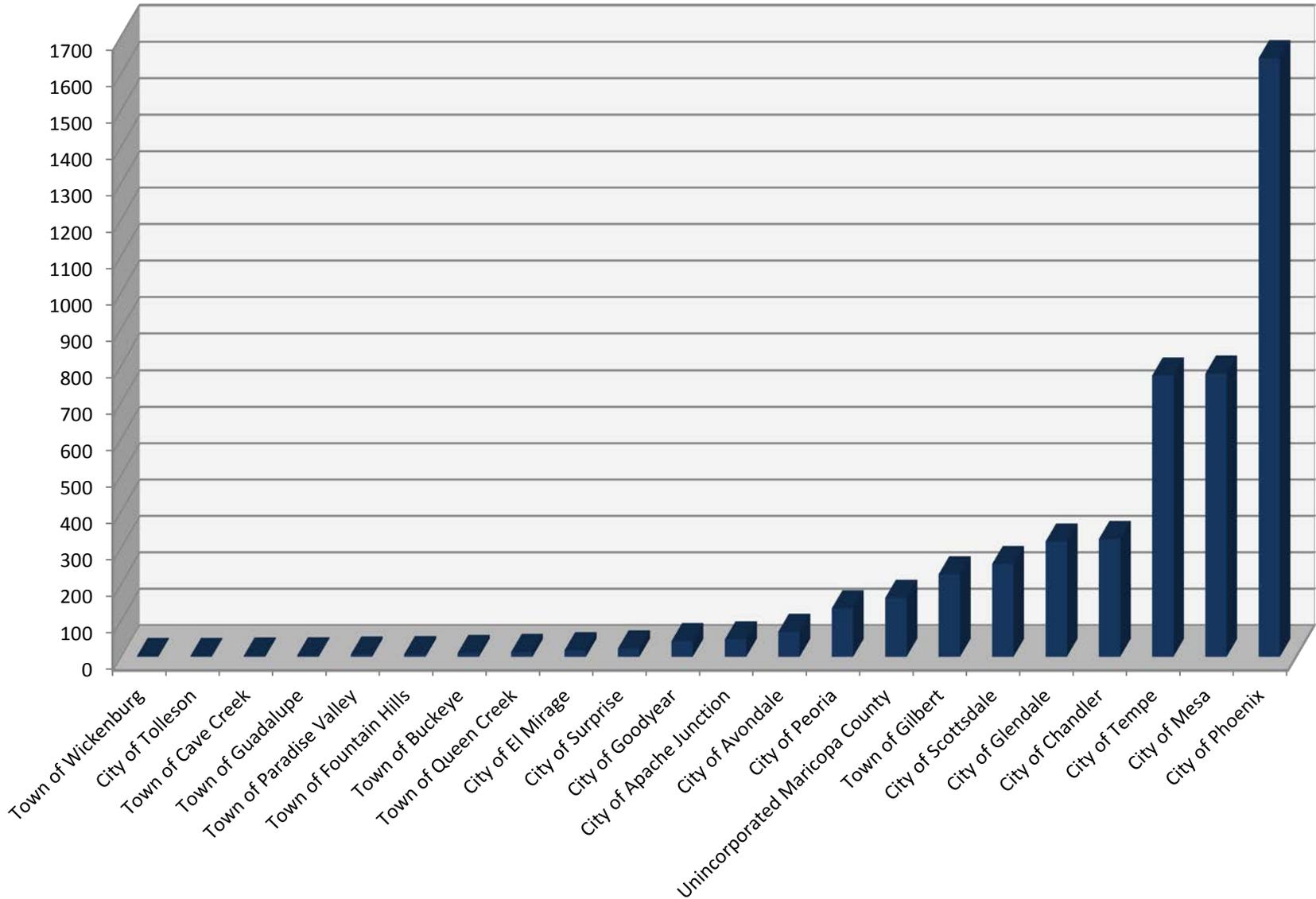
UnitNum: 2 **Age:** 24/Male

Violation1: NO_IMPROPER_ACTION

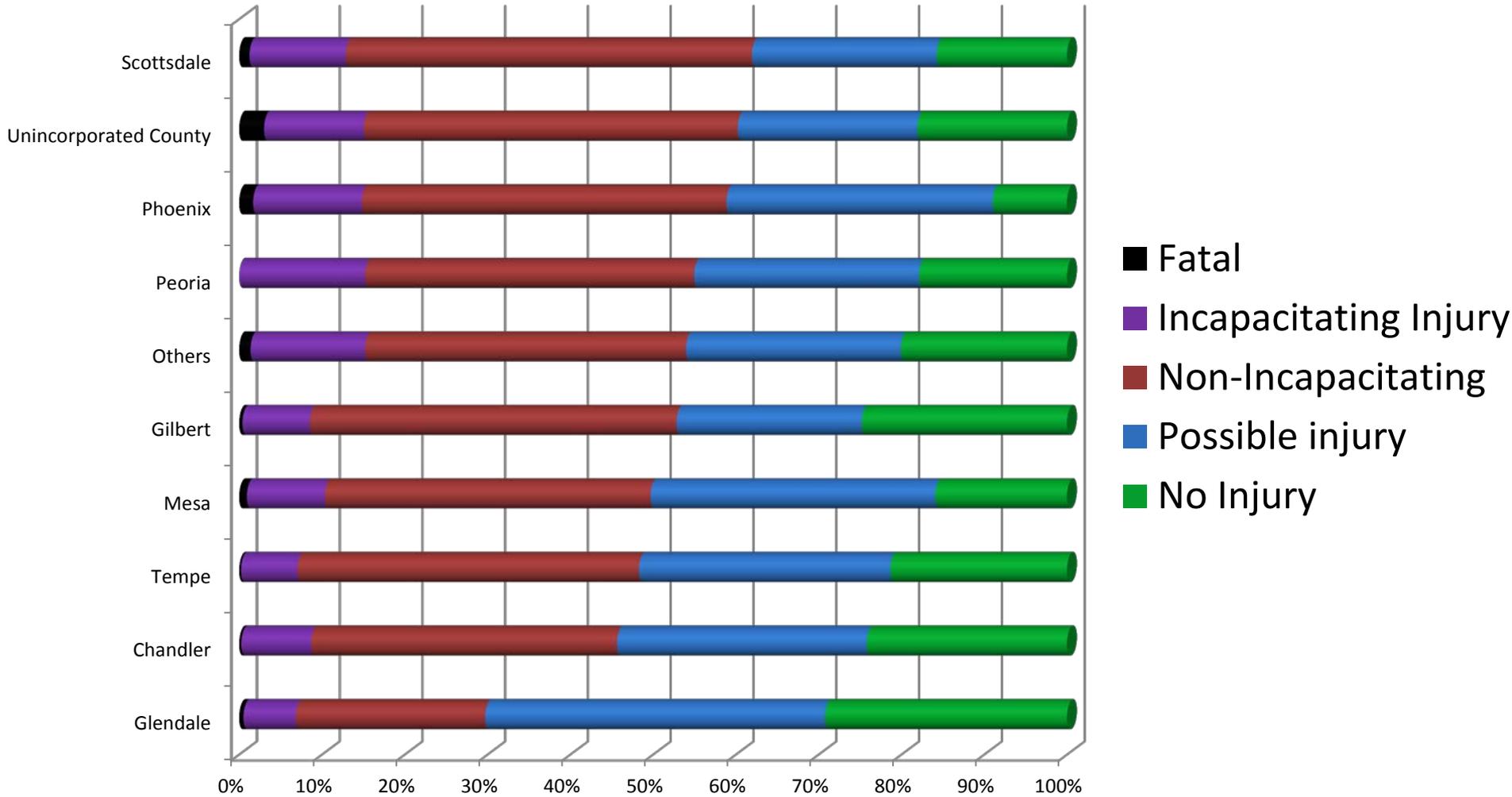
Lane: LANE_1 **TravelDir:** NORTH

UnitAction: GOING_STRAIGHT_AHEAD

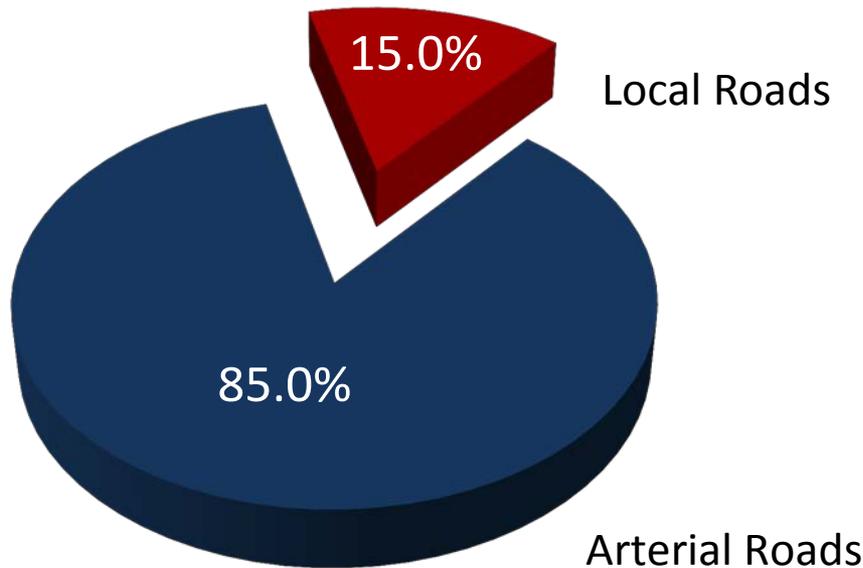
Number of Bicycle-Motor Vehicle Collisions by City



Severity of Collisions by City

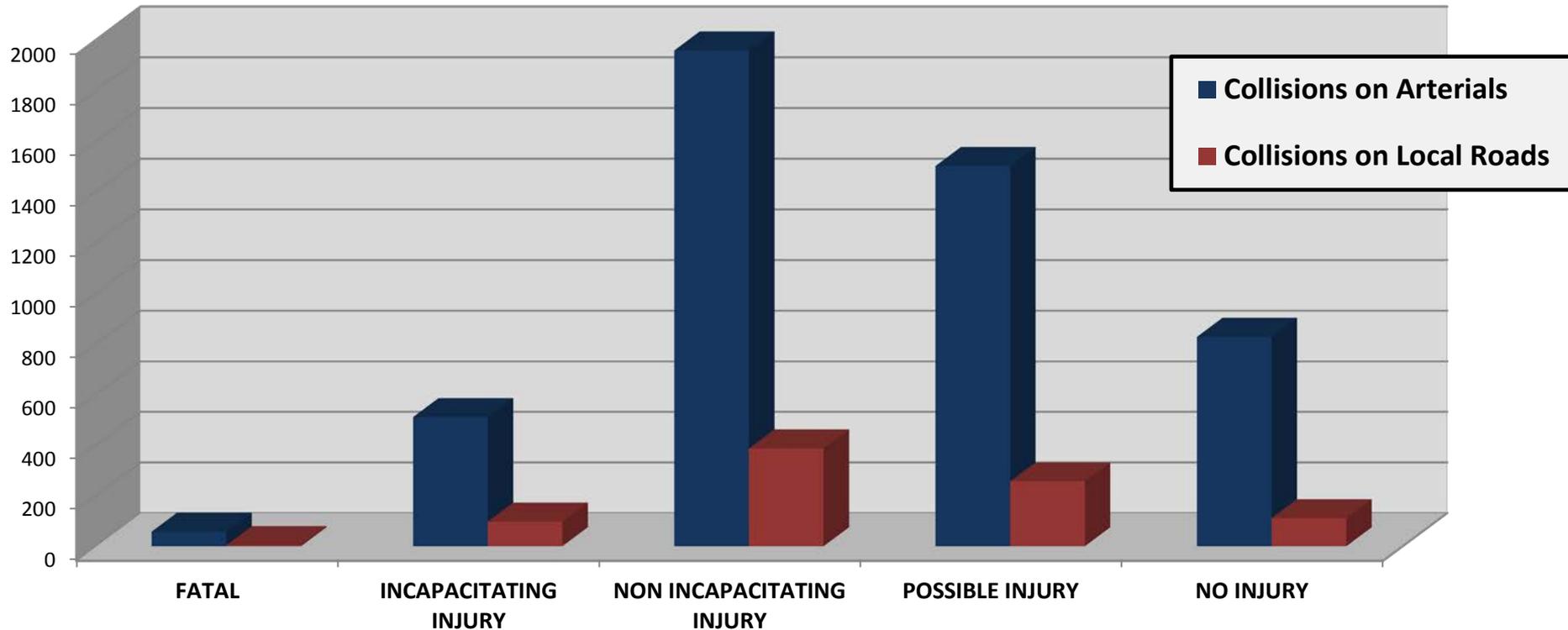


Collision Distribution For Arterial Roads and Local Roads



- *85% of all bicycle collisions happened on arterial roads.*
- *There are ~5K miles of arterial roads and ~18 K miles of local roads in Maricopa County.*
- *There are about **4** bicycle collisions per 100 miles of local roads.*
- *There are about **96** bicycle collisions per 100 miles of arterial roads.*

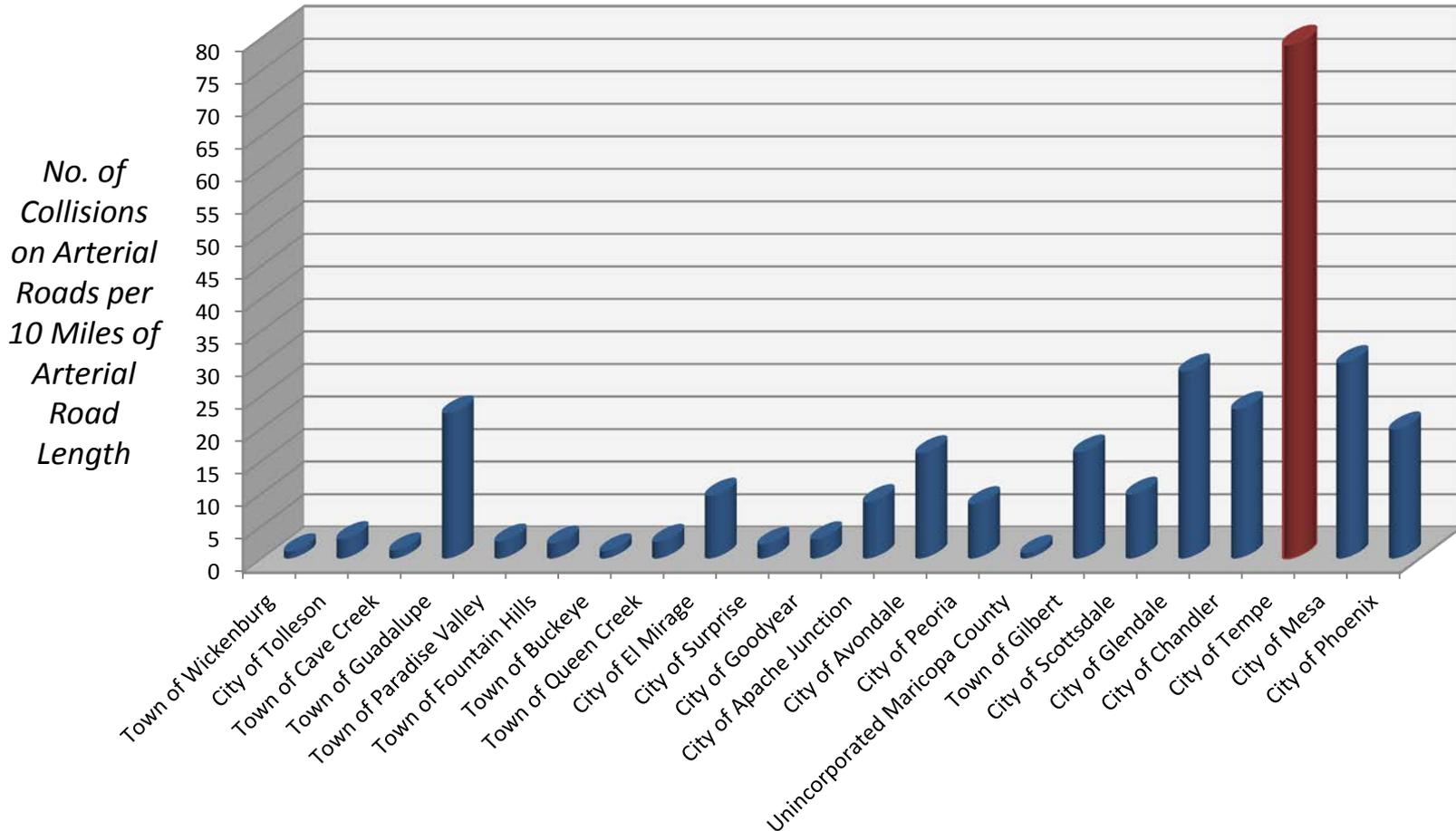
Collision Distribution by Type of Injury For Arterial Roads and Local Roads



- *Even though there are fewer collisions on local roads, the severity of the injuries that happened on local roads seem to follow a similar distribution to the collisions that happened on arterial roads.*

Collision Distribution by City

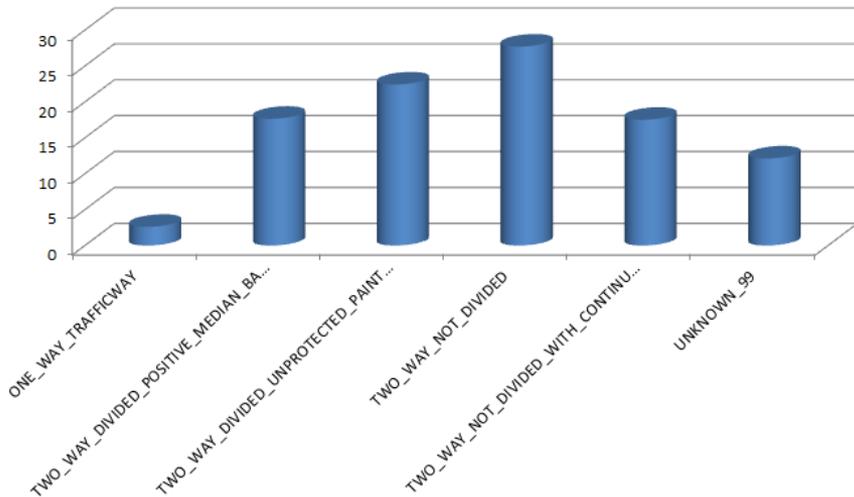
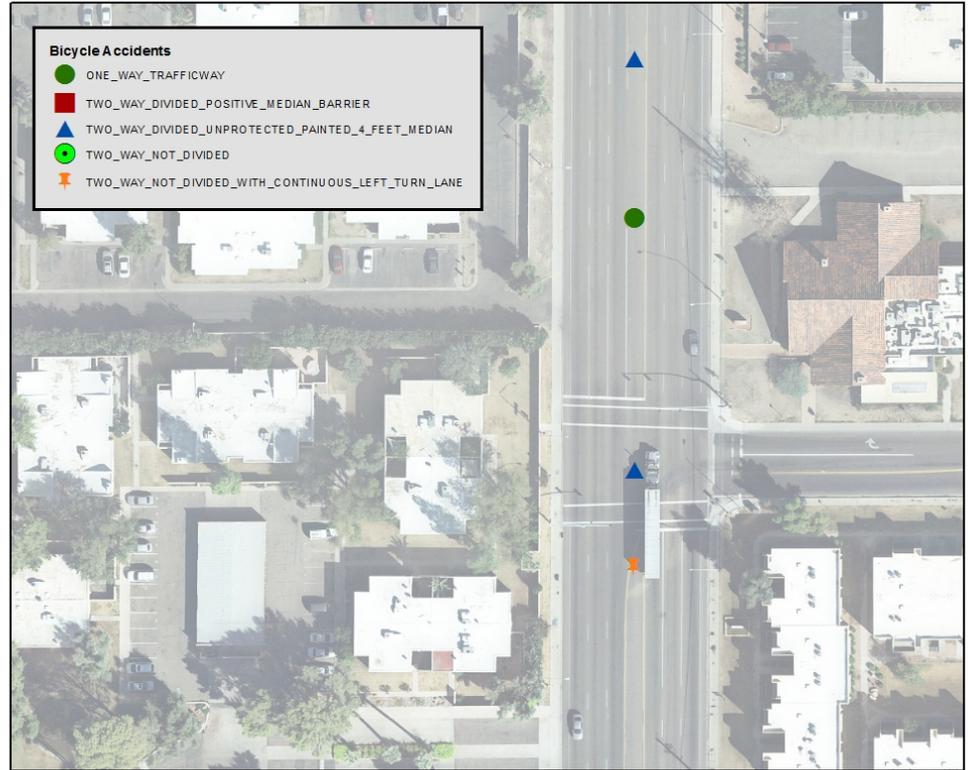
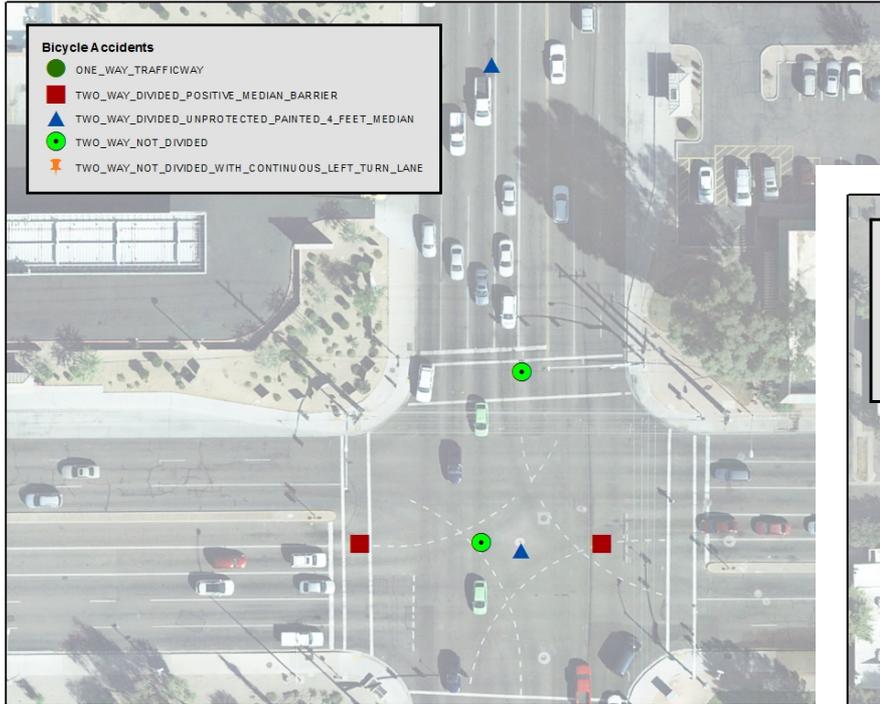
Normalized by Miles of Arterials within City Limits



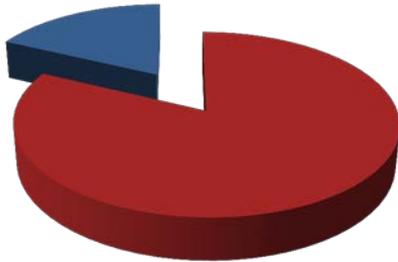
- *Looking at length of arterials, the density of collisions within Tempe City limits more than double the density of the next ranking city.*

Road Type / Traffic Way

- When looking at the coding for traffic way, from the location where the collisions are placed, the coding appears to be subject to interpretation or the points are not located correctly.



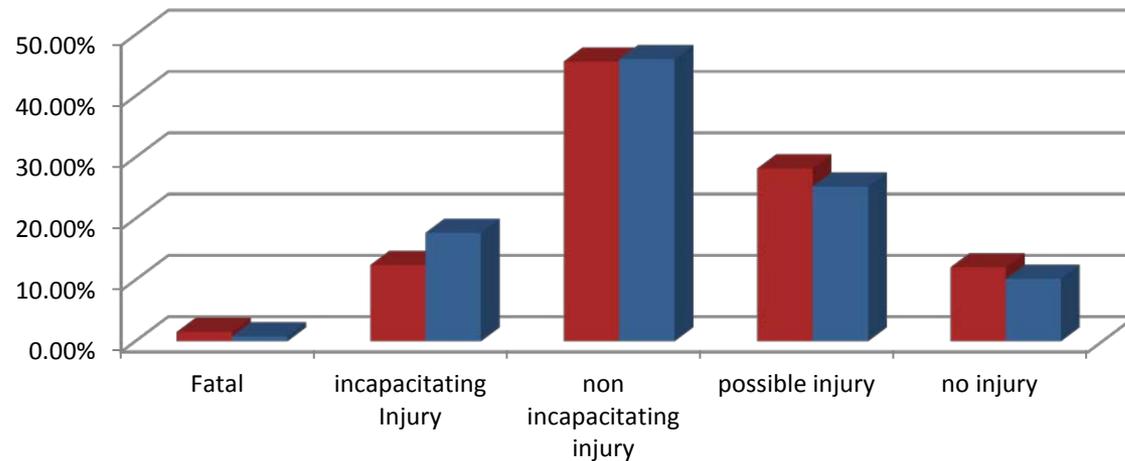
Helmet Use



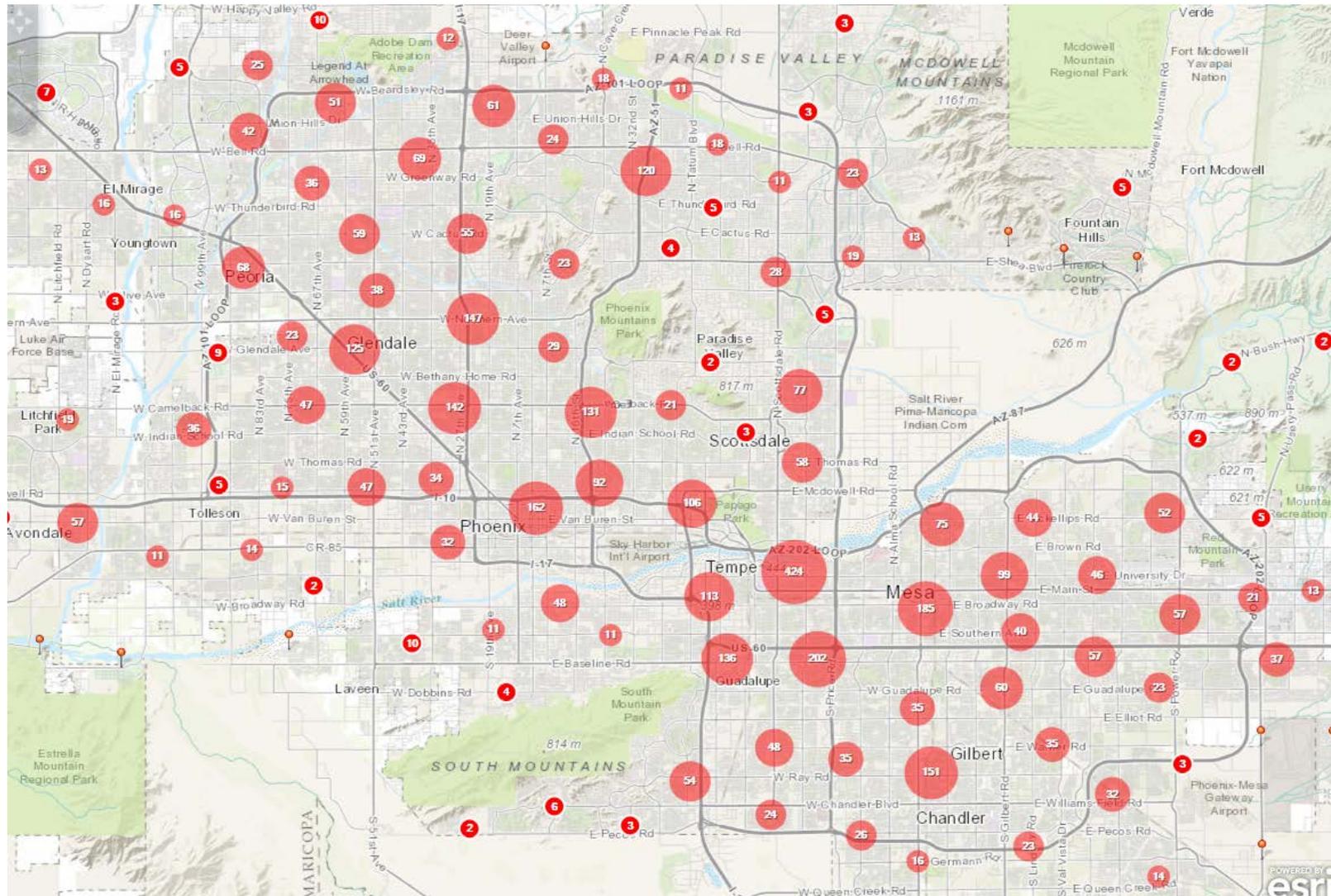
- *When reported, only 18% of the bicycle riders were wearing a helmet.*
- *People wearing a helmet experienced:*
 - *A lower rate of fatalities.*
 - *Higher rate of incapacitating injuries.*
 - *Lower rate of possible injuries*

■ No Helmet Used

■ Helmet Used

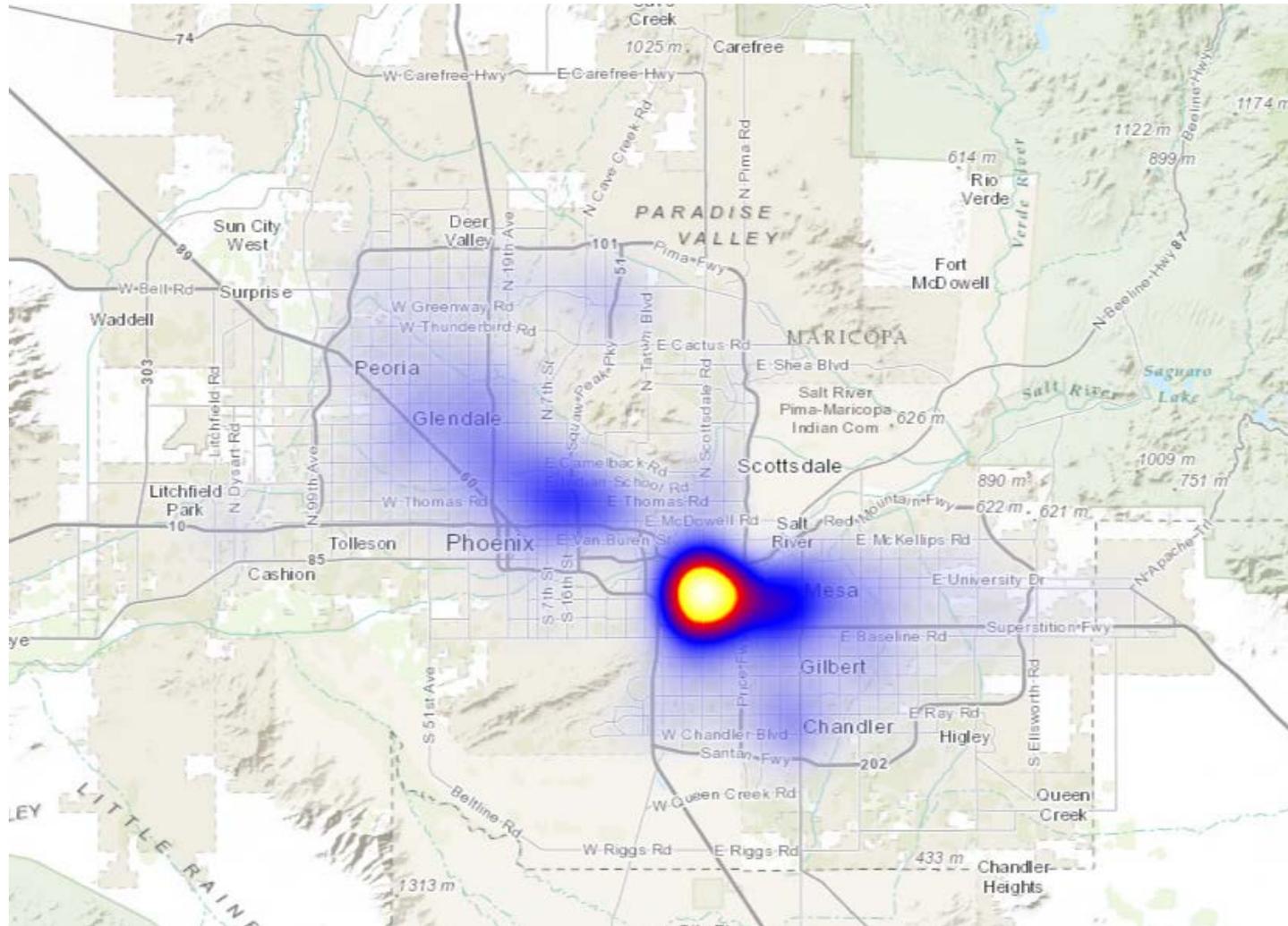


Cluster Map of Bicycle-Motor Vehicle Collisions



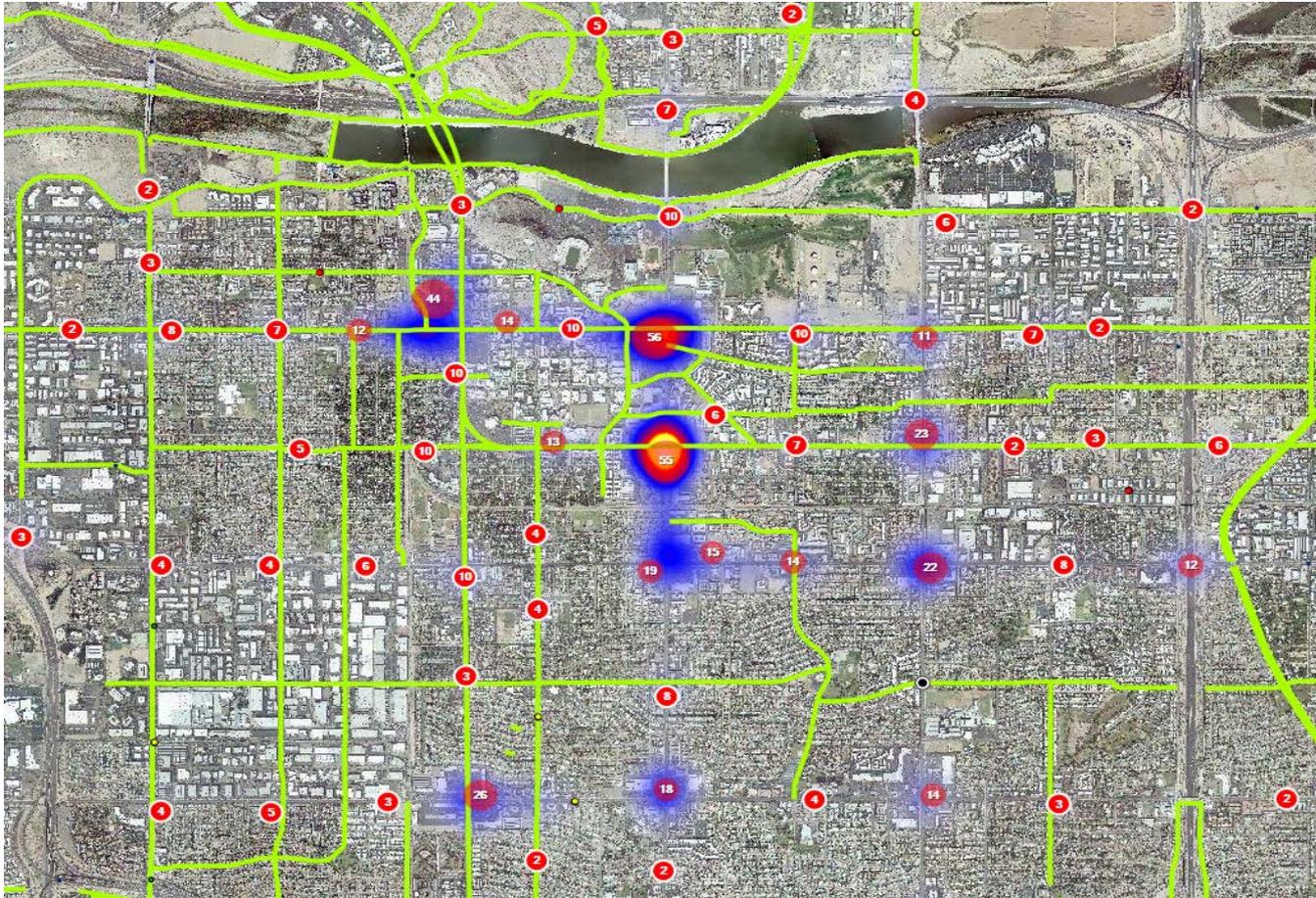
- *The cluster map summarizes the occurrence of collisions by area.*

Heat Map Of Bicycle Collisions Along Arterial Roads In Maricopa County



- Heat map illustrating the worst area for bicycle collisions.

Within Tempe, Rural Road between University & Broadway Have the Highest Incident Rate of Bicycle/Motor-vehicle Collisions



- *Green lines show areas with bicycle lanes.*
- *Reducing traffic speeds and adding bike lanes should reduce bicycle collisions along this high risk area.*



Department of Public Health Capabilities

- Office of Epidemiology
- Office of Nutrition and Physical Activity
- Geographic Information Officer – Marta Dent
- Collaboration with other hospitals – e-codes
- Statistical analysis
- Point you in the right direction for existing data sources



Health Impact Assessment

- 6 step process of bringing health and health disparities into policies, programs, plans and proposals
- HIP2 – Health in Policies and Practice
- www.Azhip2.org
- Tentative next training: January 24, 2014 – Arizona Chapter of American Planning Association



The Future





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