TAC MEETING #2

December 3, 2015

Revised December 12, 2015

AGENDA

Review of TAC Meeting #1

Vision Statement and Guiding Principles

Data Analysis and Trends

Best Practices

Next Steps

TAC Meeting #1 Review

- TAC member roles

- Vision Zero background

- Vision statement

- Safety analysis to-date

Vision Statement

Working together, we will take equitable and data-driven actions that will eliminate serious injuries and deaths for all who share Portland streets by 2025.

DRAFT Guiding Principles

The plan will be **Equitable**
- It will target gaps in infrastructure that contribute to serious injuries and fatalities
- It will address the disproportionate burden of traffic fatalities and serious injuries on vulnerable communities, including people of color, lower income individuals, seniors, children and people who walk, bike and use transit
- It will not result in racial profiling

Actions in the plan will be **data-driven** to address the factors that lead to serious injury and death on Portland's roadways
- **Safety data** will be gathered from both traditional and innovative sources to identify the location, behaviors, and circumstances—including roadway design issues—related to serious and fatal crashes.
- **Equity data**, including demographics, risk factors, traffic enforcement data and infrastructure gaps linked to crashes, will be used to ensure the plan prioritizes the needs of vulnerable communities

The plan will be **accountable**, setting out clear objectives and measuring performance against them
- Progress will be communicated in annual reports and in an easily accessible dashboard
- Engagement with communities will be an ongoing process
- Success will be measured by the level of investment in underserved communities, equity outcomes and safety metrics

TOP 4 SAFETY TRENDS

City of Portland – Vision Zero
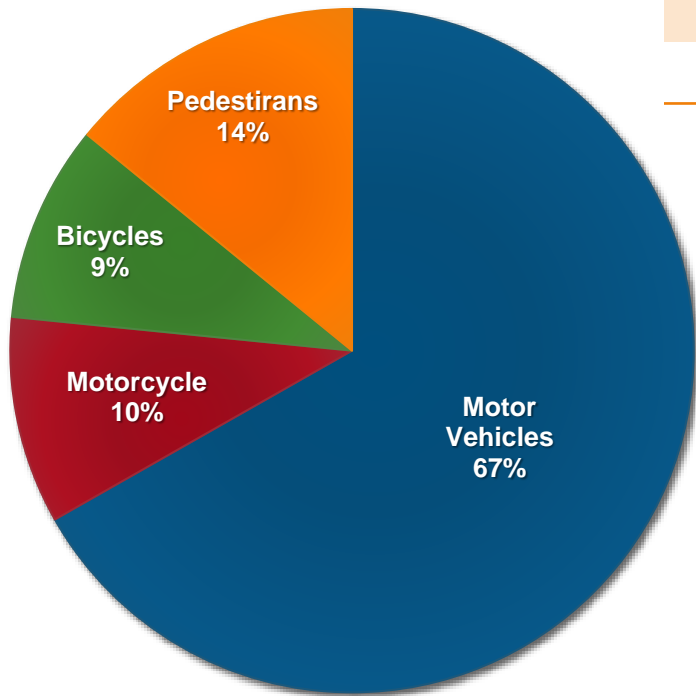
Data Sources

- City of Portland Crash Data
  - 2004-2013 Crash Record

- Fire Incident Reports
  - Trends similar to City of Portland Crash Data

- Trauma Data
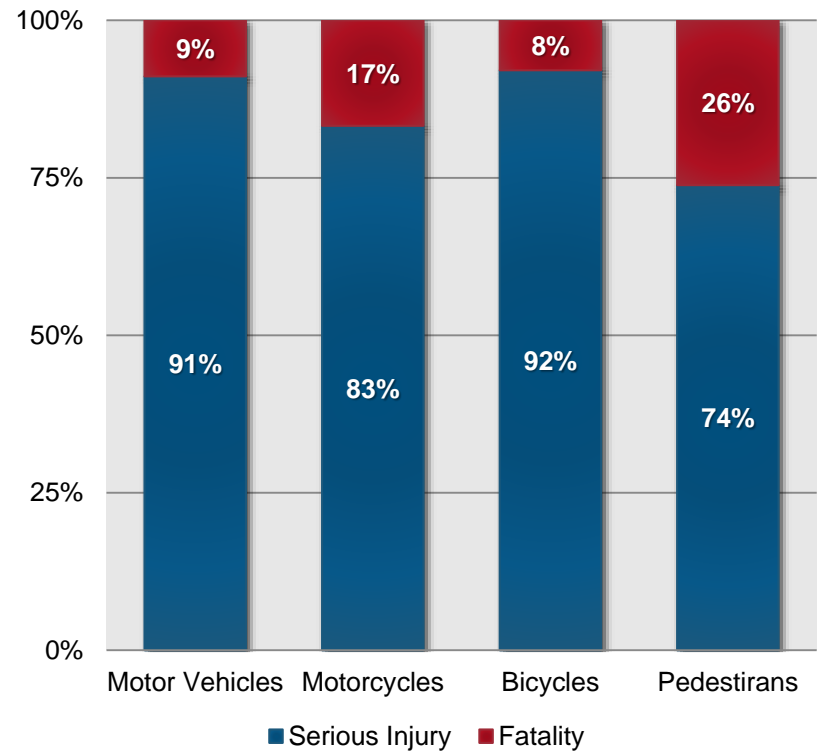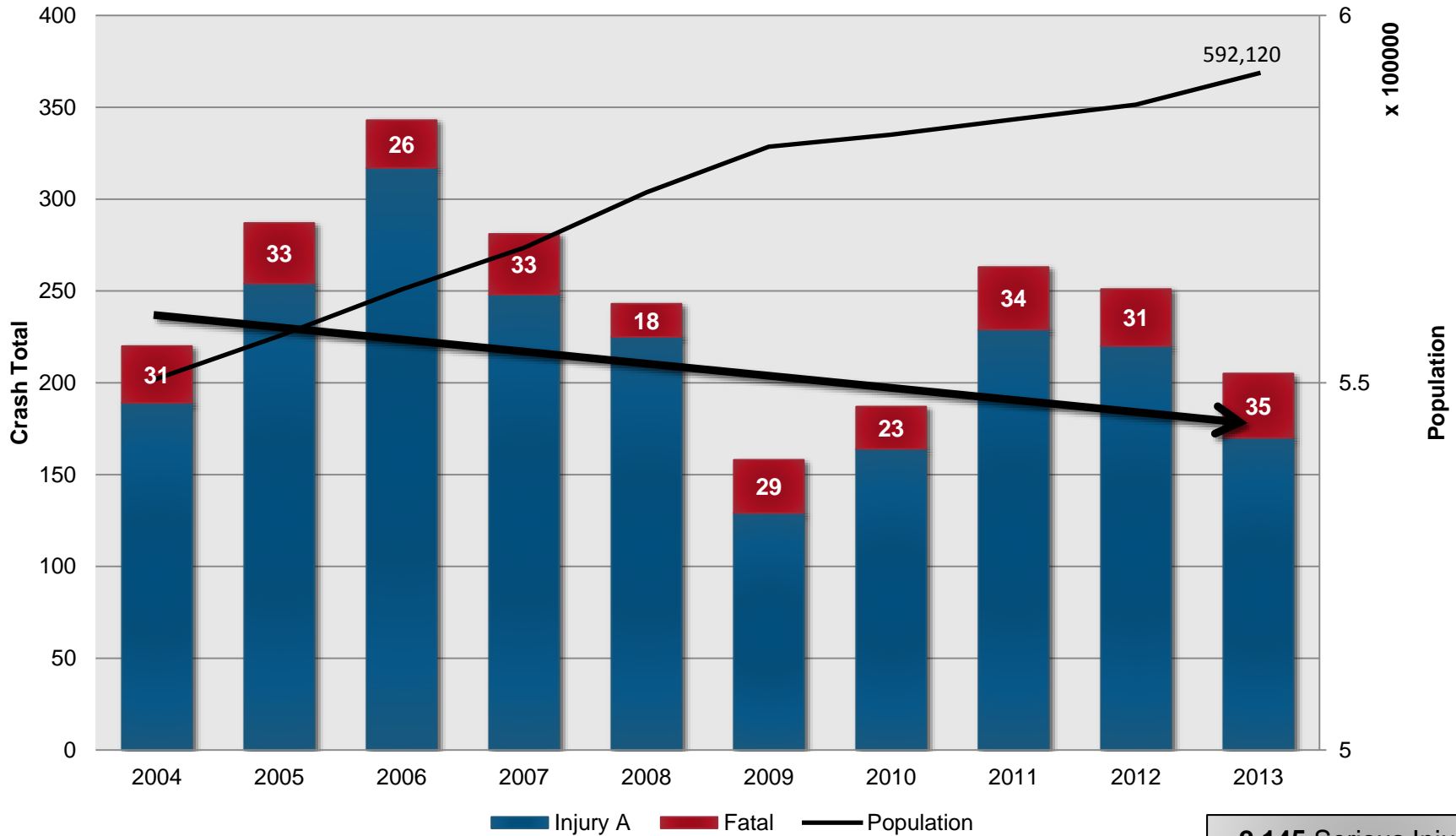 - Status Unknown

LONG TERM TRENDS

Collisions by Mode

	Fatalities	Serious Injuries	Total
Motor Vehicles	185	1682	1,867
Motorcycles	40	199	239
Bicycles	18	209	227
Pedestrians	90	254	344

293 Fatalities   2,145 Serious Injuries

Pedestirans 14%
Bicycles 9%
Motorcycle 10%
Motor Vehicles 67%

Motor Vehicles: 9% / 91%
Motorcycles: 17% / 83%
Bicycles: 8% / 92%
Pedestirans: 26% / 74%

Serious Injury   Fatality

Overall Trends – Yearly

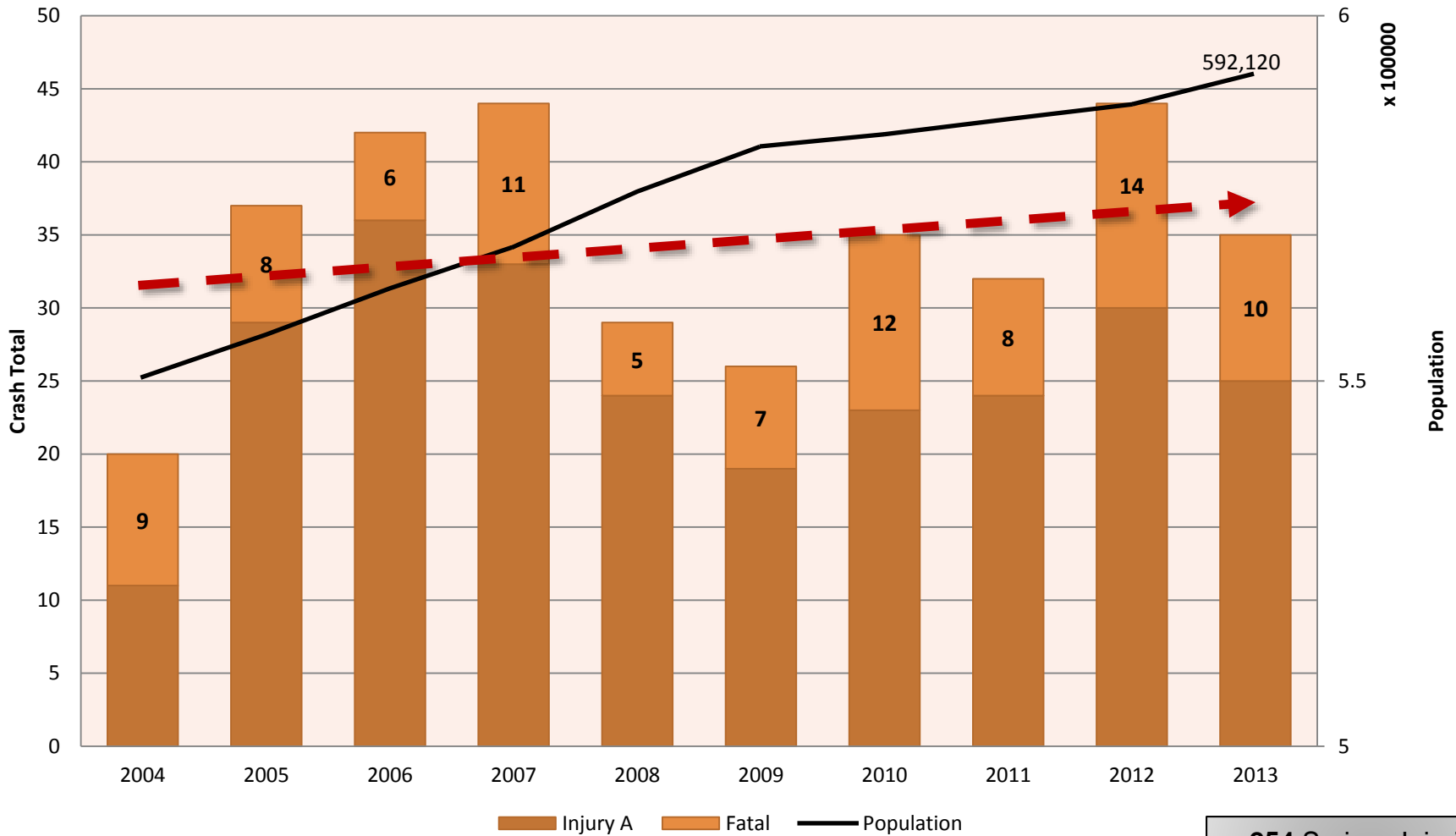**2,145** Serious Injuries
293 Fatalities
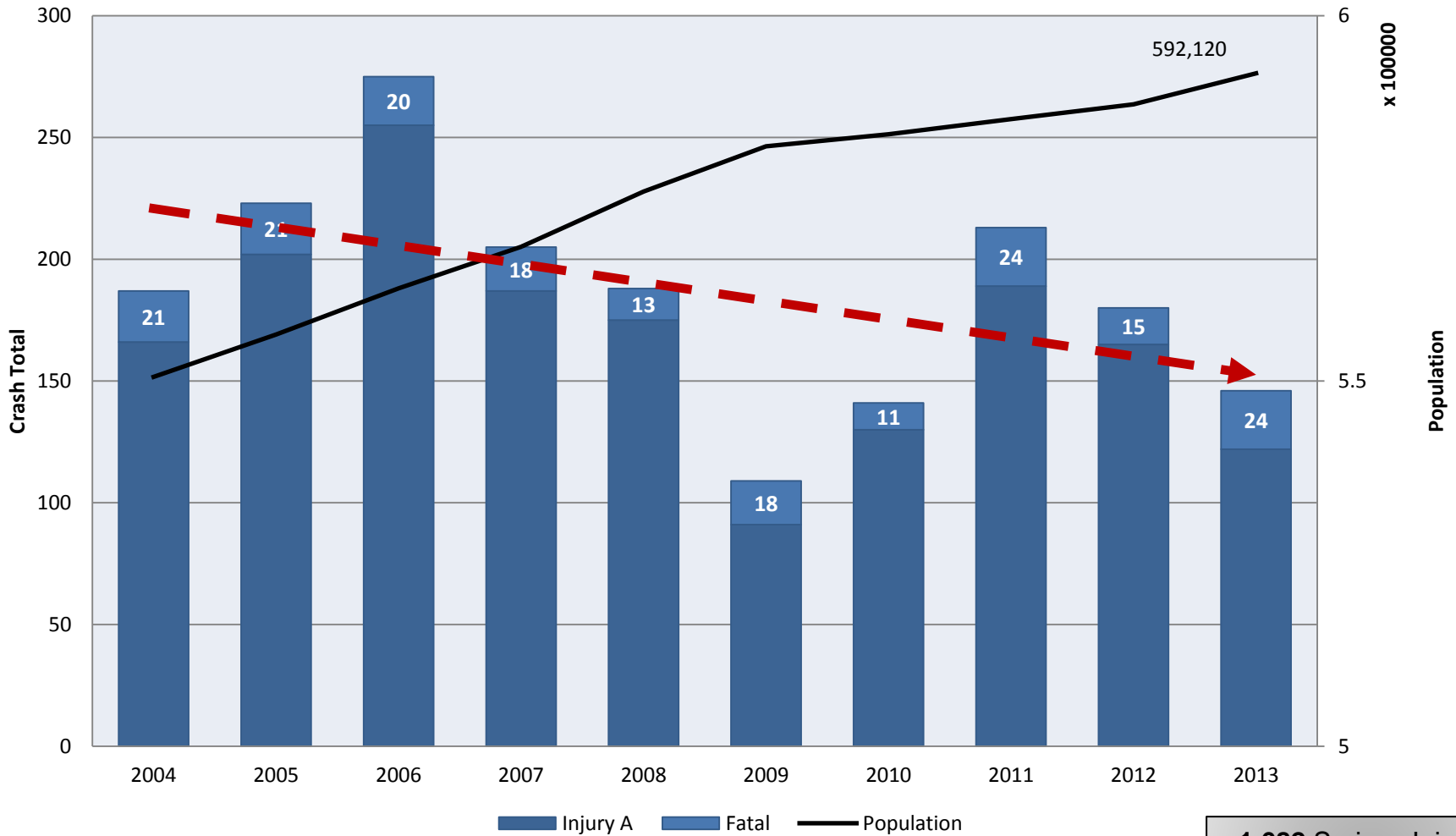
Yearly Bicycle Trends

209 Serious Injuries
18 Fatalities

Yearly Pedestrian Trends

254 Serious Injuries
90 Fatalities

Top Four Safety Analysis Indicators

Drug/Alcohol

Speeding

Intersections

High Crash Corridors & Intersections

VISION ZERO
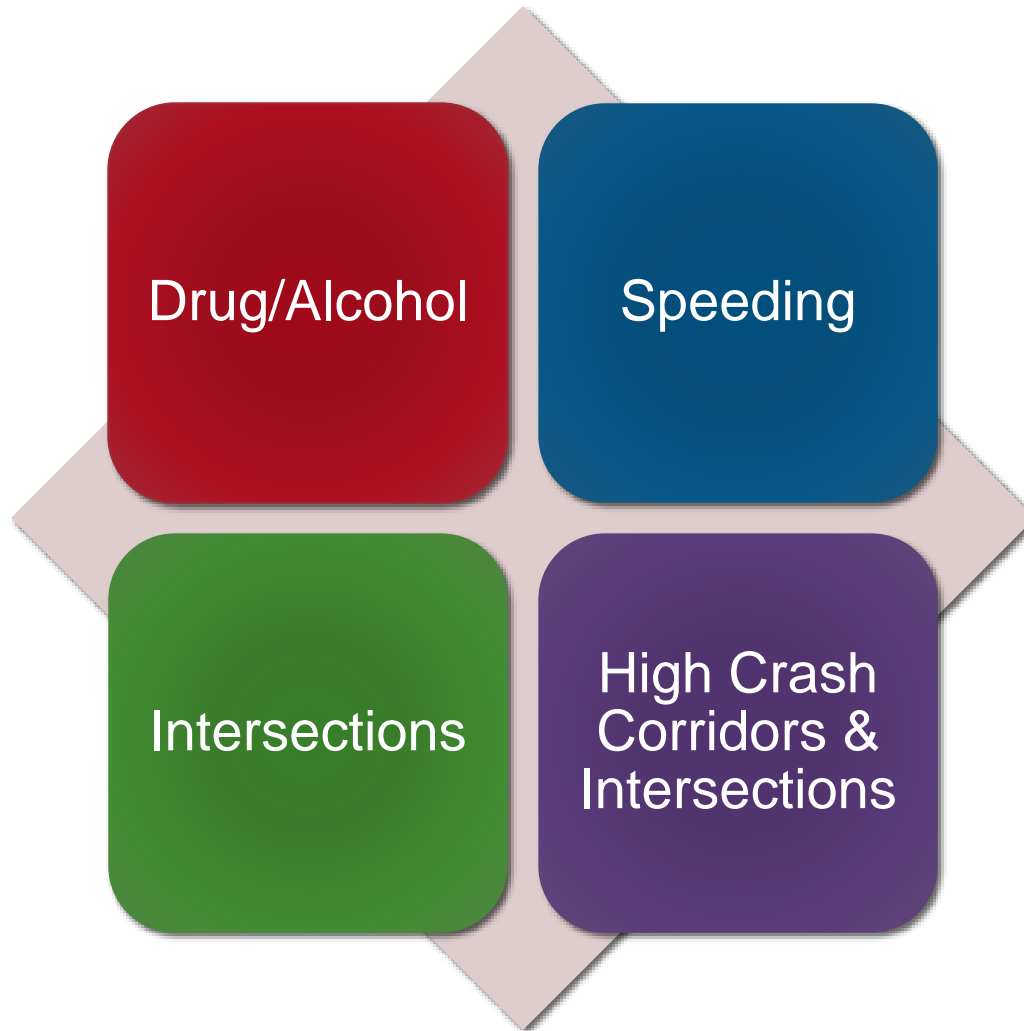
DRUGS & ALCOHOL

Percentage of Fatal Crashes Involving Drugs or Alcohol (All Modes)
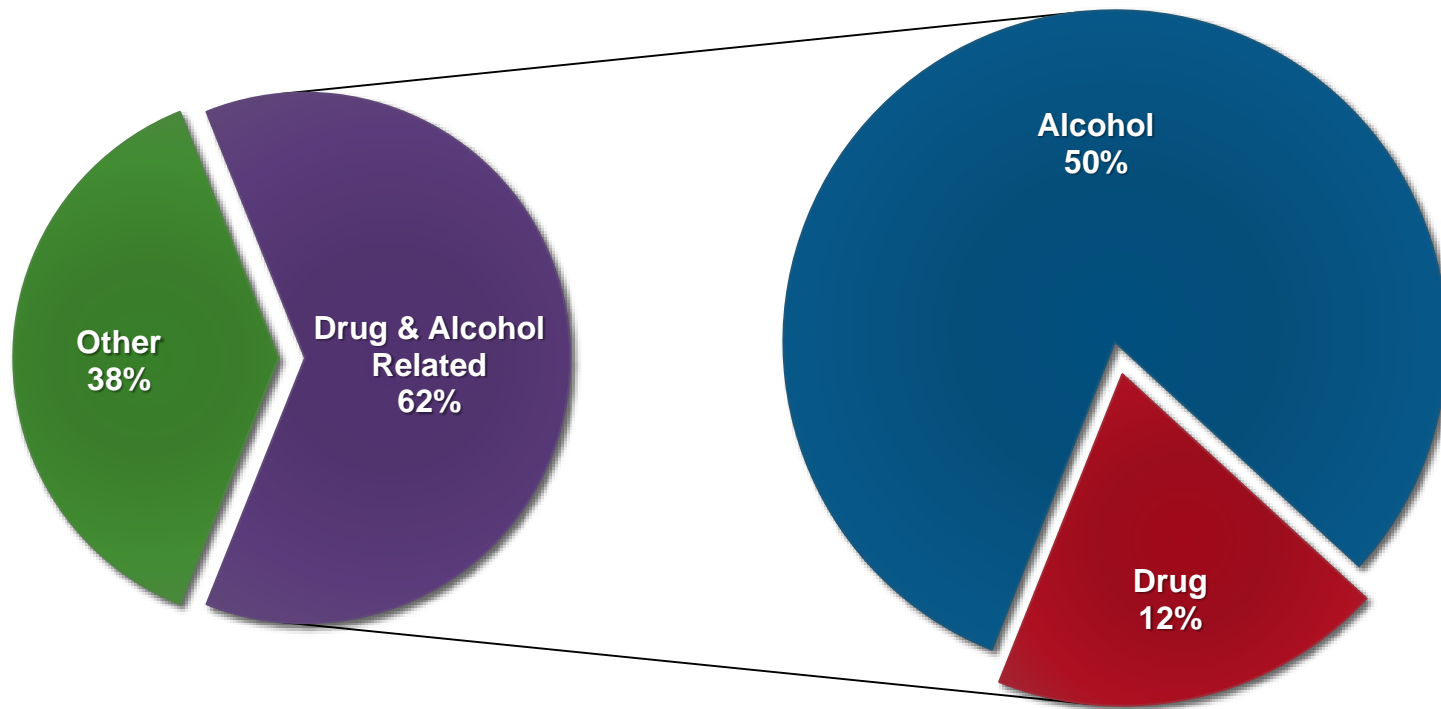
Percentage of Fatal Crashes Involving Drugs or Alcohol (Bikes and Pedestrians)

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Other
41%

Drug & Alcohol Related
59%

Alcohol
43%

Drug
16%

Crashes Involving Drug & Alcohol

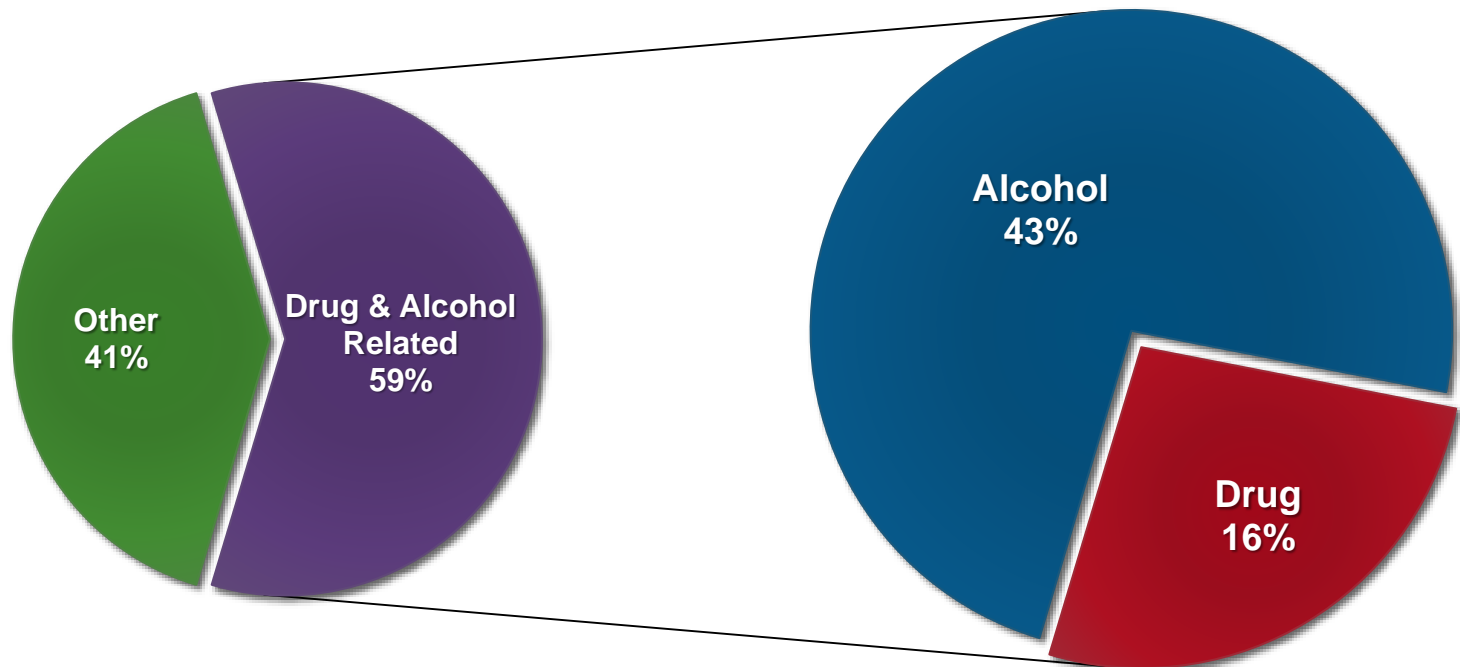## 98 Reported Participants in a Fatal Crash with a BAC Result

- 23 below legal limit of 0.08
- 75 reported BAC of 0.08 or greater

Motor Vehicle	Bicycle	Pedestrians
☐ 15 below legal limit	☐ 1 below legal limit	☐ 7 below legal limit
☐ 50 at or above 0.08	☐ 3 at or above 0.08	☐ 22 at or above 0.08
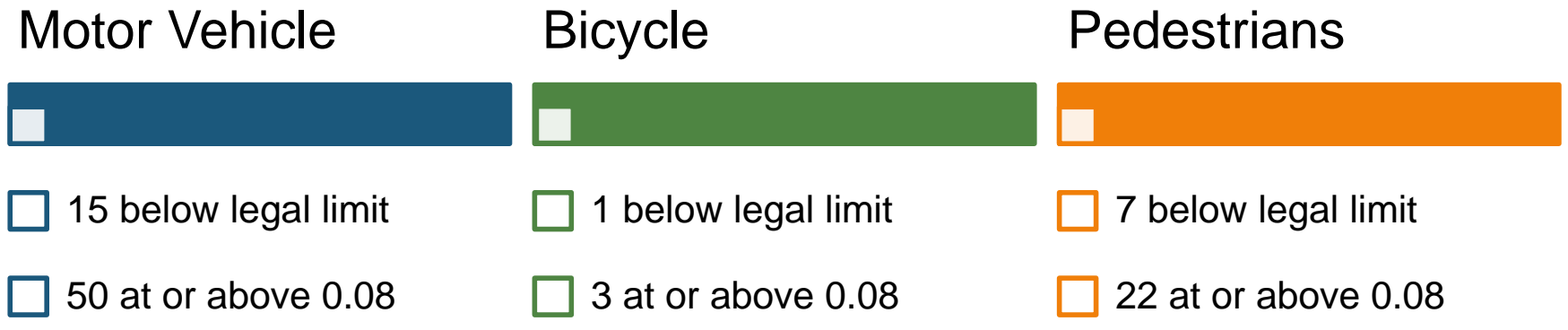
35 Reported Drug-Use Related Fatalities

Reporting issues with Serious Injuries

- Lack of alcohol testing for Serious Injuries

Participant Under the Influence - Fatalities

98 Total Crashes where a BAC level >0.00

29 Fatalities

4 Fatalities

65 Fatalities

Pedestrian 30%

Bicycle 4%
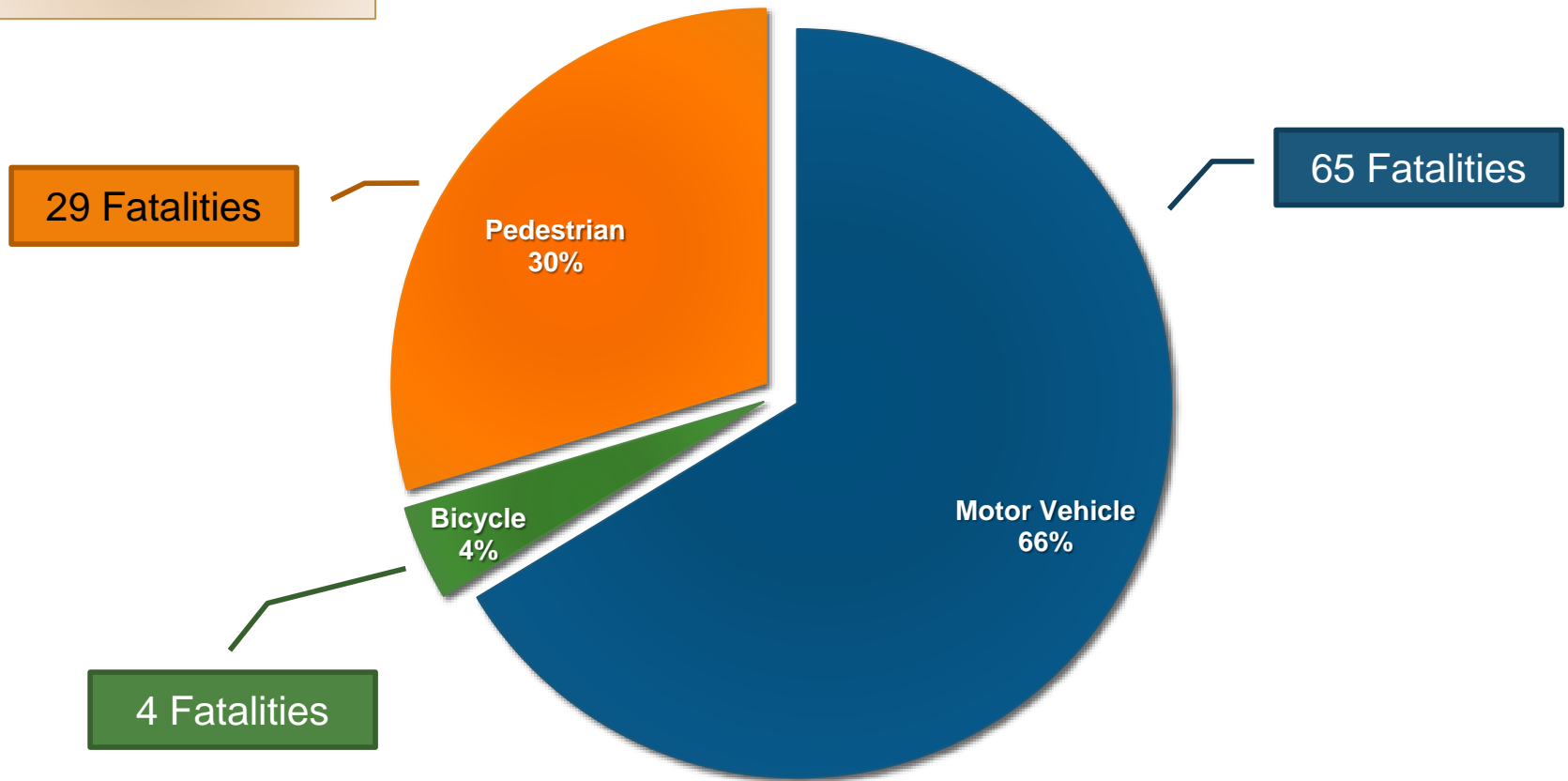
Motor Vehicle 66%

Percent Fatalities – BAC Levels
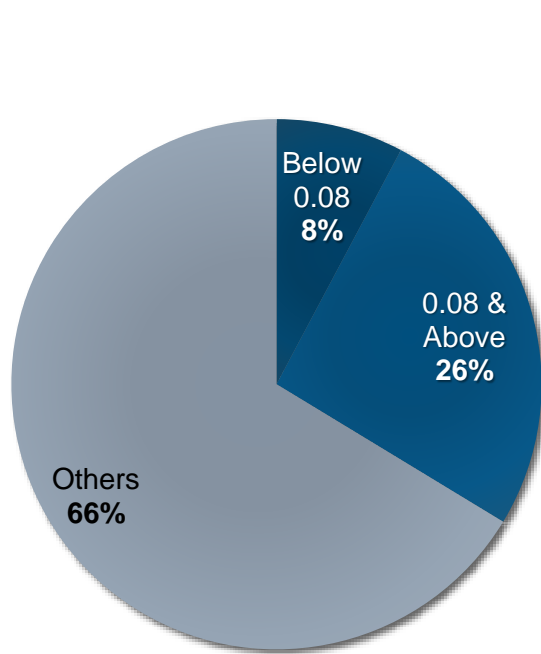
193 Motor Vehicle Fatalities
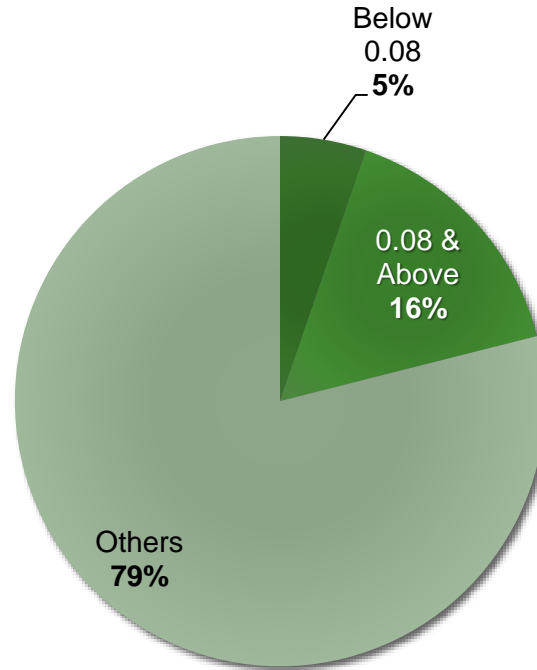
19 Bicycle Fatalities
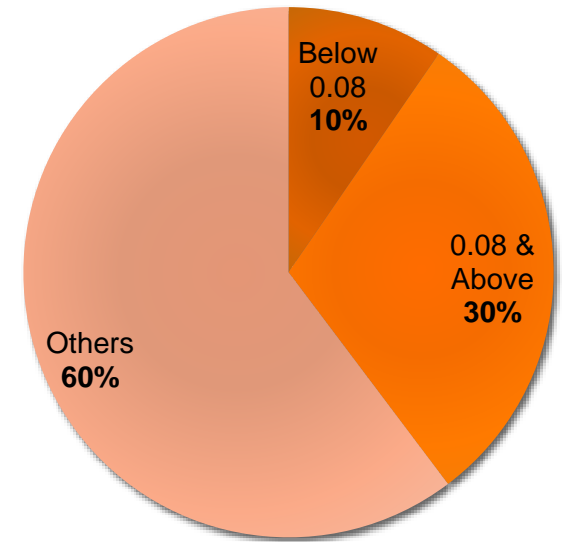
73 Pedestrian Fatalities

Trends of Fatal Crashes by Intoxicated Participant (BAC of 0.08 or more)

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Driver → Speeding (68%) → Roadway Departure (21%)

Bicycle → No clear trends

Pedestrian → Mid-block/non-intersection crossings (45%) → Disregarding traffic signal (disobeying traffic signal) (14%)

Summary

- 62% of all fatal crashes were drug or alcohol related

- For intoxicated **drivers**, speeding is the behavior that leads to the most fatalities.

- For intoxicated **pedestrians**, crossing the street at non-intersections is the behavior that leads to the most fatalities.

SPEEDING

Fatalities Caused by Speeding

293 Fatalities

Other 68%
Speeding Cause 32%
Reckless 3%
Exceeded Posted Speed 16%
Too Fast for Conditions 13%

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Fatalities Caused by Speeding

293 Fatalities

Other 68%

Speeding Cause 32%

Bicycle 6%

Pedestrians 10%

Motor Vehicle 16%

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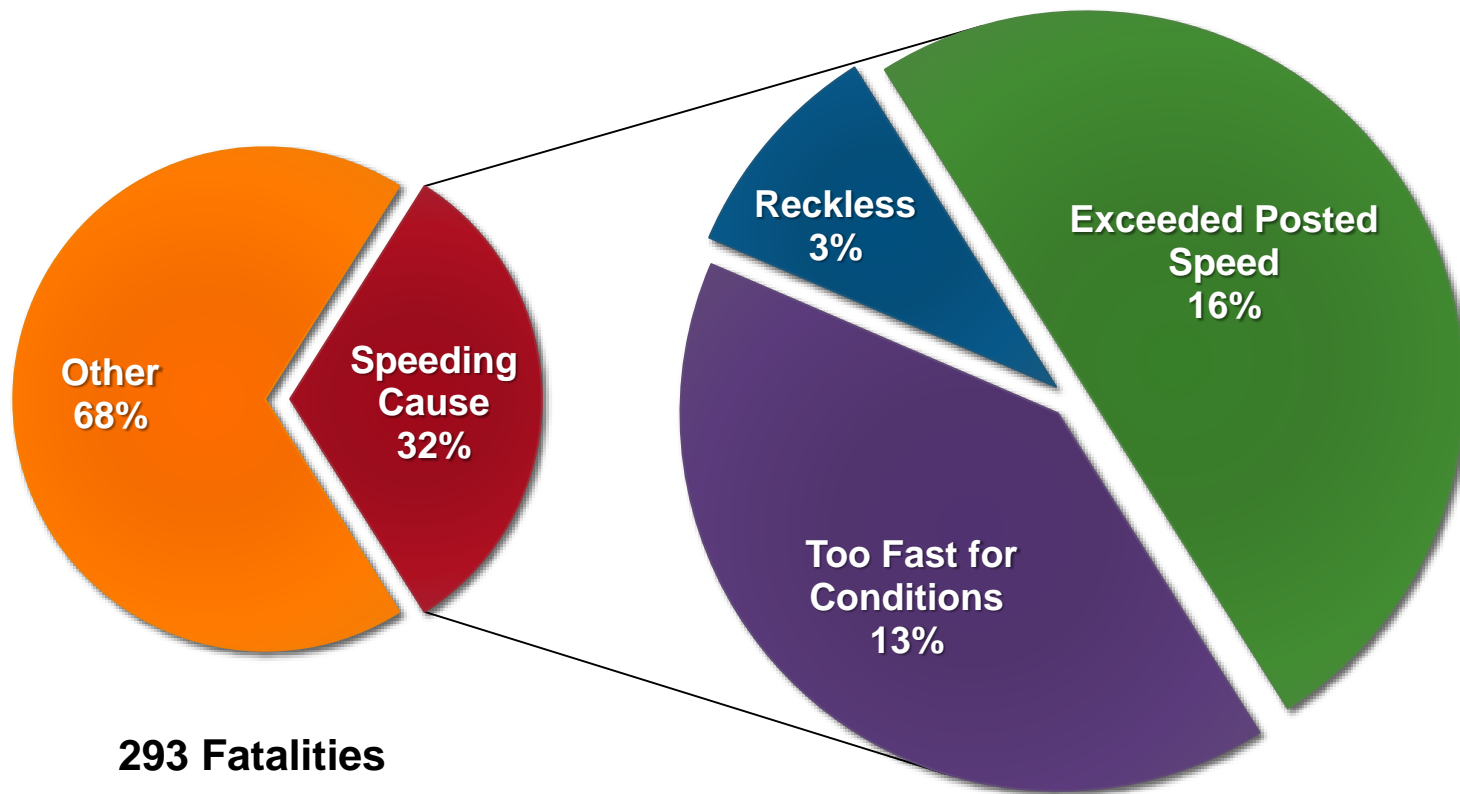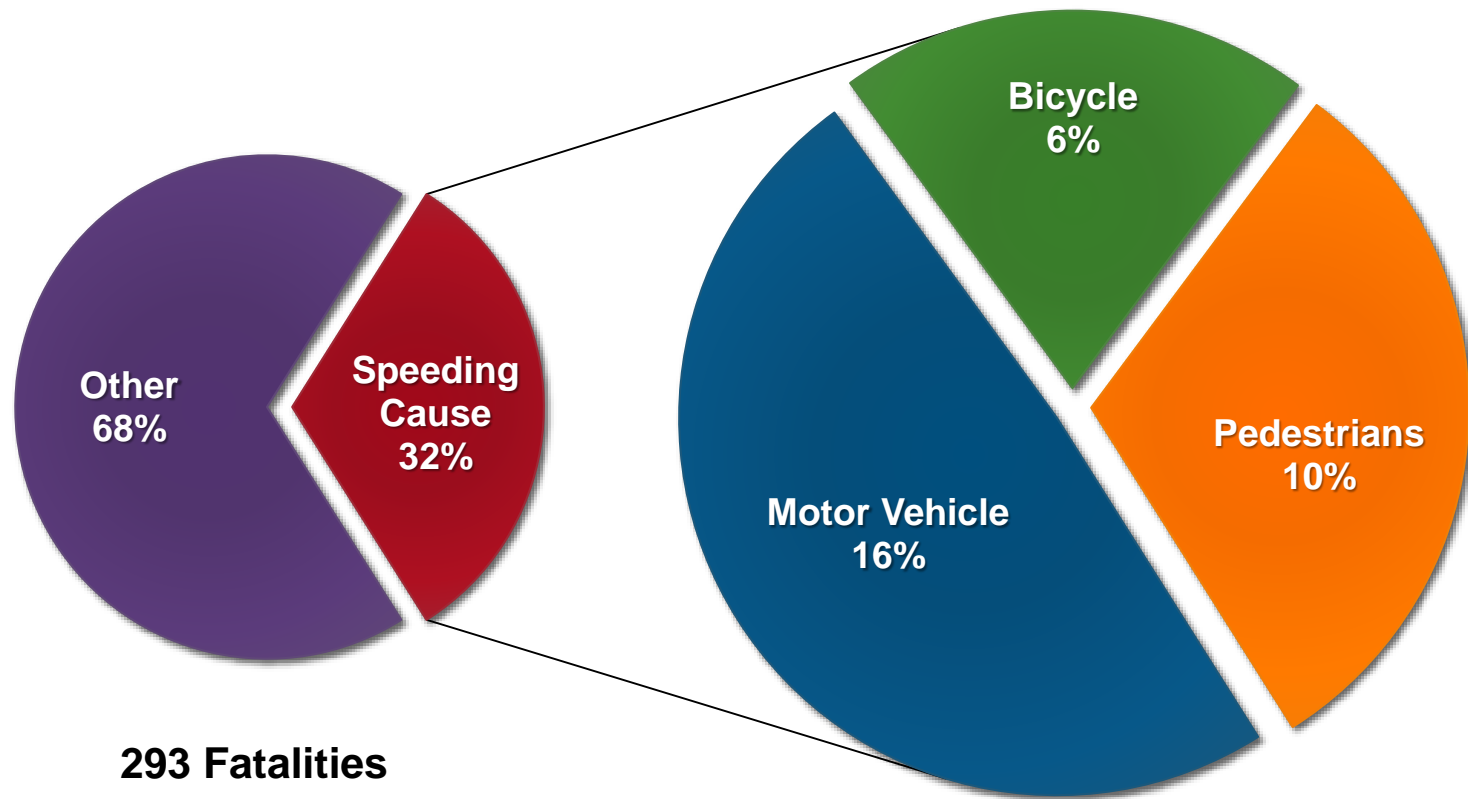
All Modes – Fatal by Posted Speed

75% of Fatalities occurred on roads 35 mph or higher
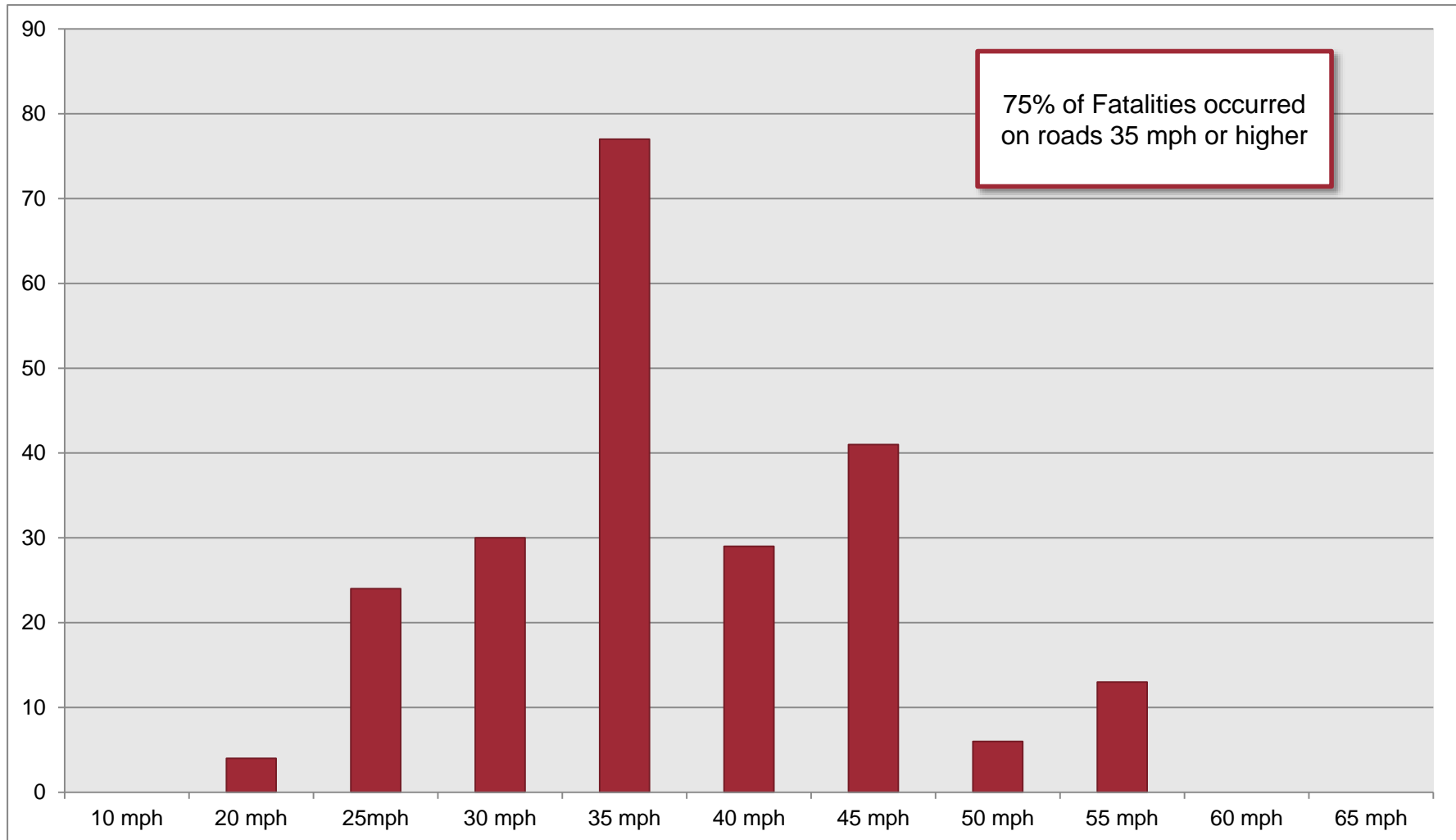
Motor Vehicle – Fatal by Posted Speed

Bicycle – Fatal by Posted Speed

42% of Bicycle Fatalities occurred on roads 35 mph or higher
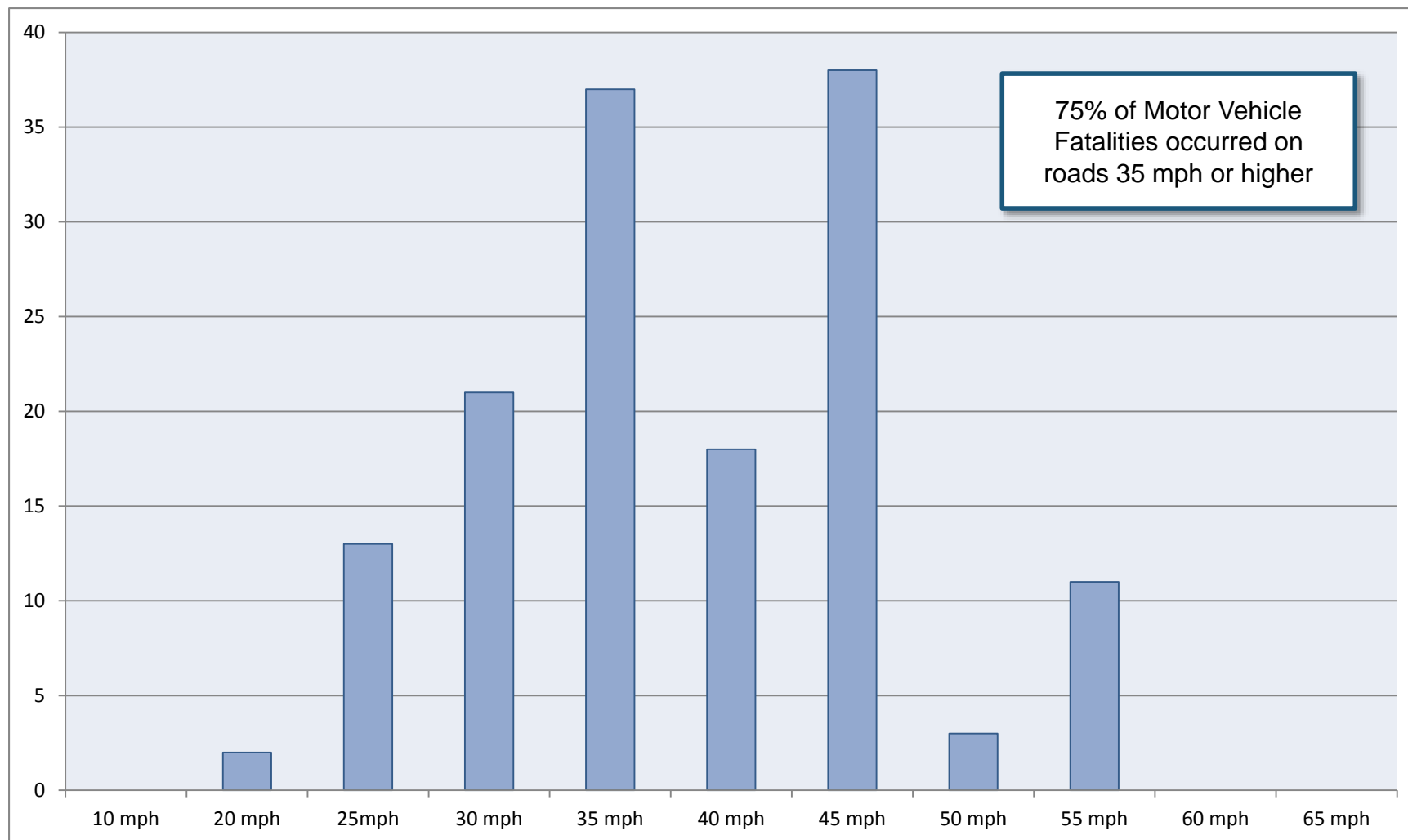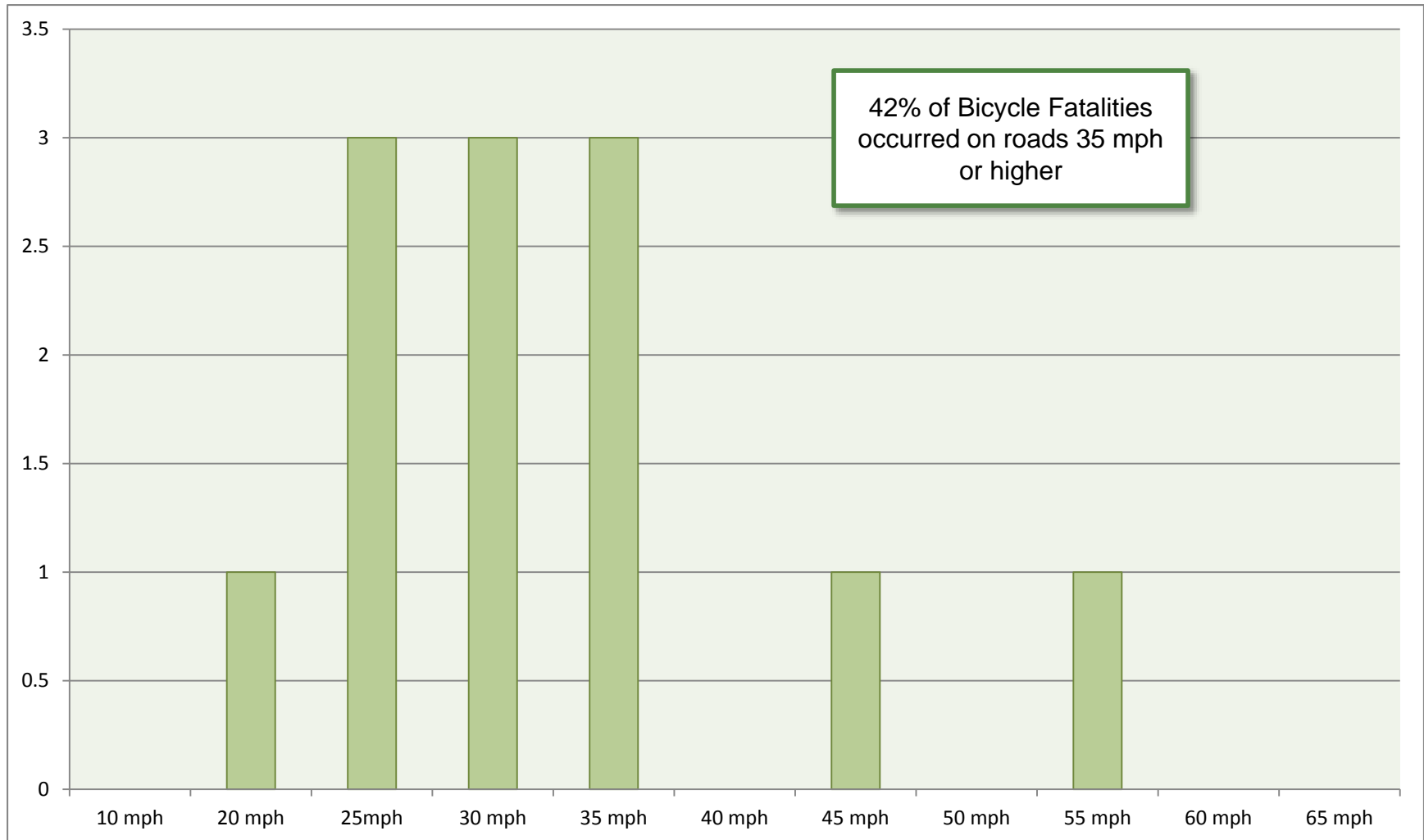
Pedestrian – Fatal by Posted Speed

78% of Pedestrian Fatalities occurred on roads 35 mph or higher
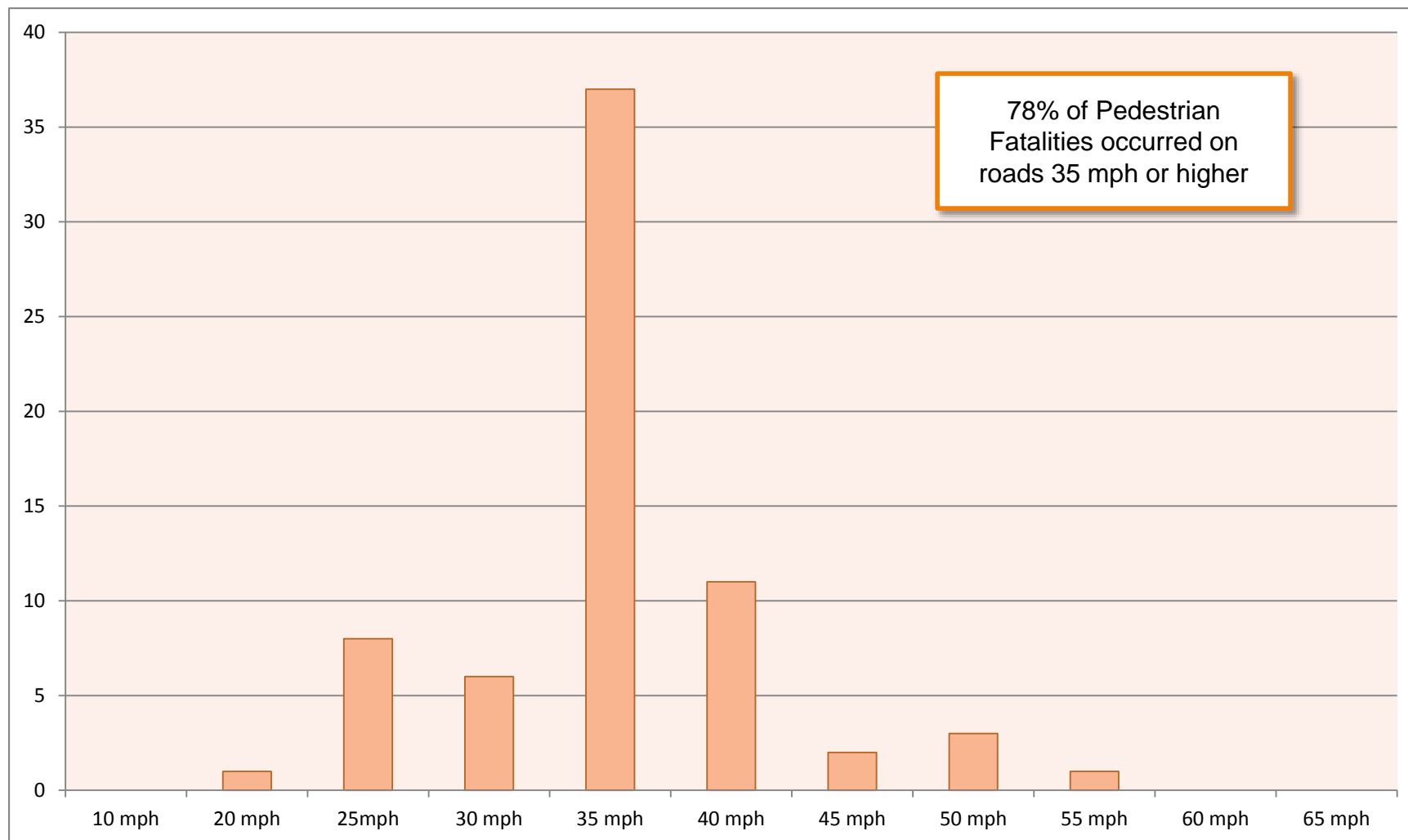
Summary

- Vehicle fatalities are 3 times more frequent on roads with posted speeds of 35 mph or greater

- Pedestrian fatalities are nearly 4 times more frequent on roads with posted speed of 35 mph or greater

- Bicycle fatalities are 1.5 times more frequent on roads with posted speeds less than 35 mph

- **All fatalities are 3 times more frequent on roads with posted speeds of 35 mph or greater**

INTERSECTIONS

Fatal and Serious Injury Crashes at Intersections

Intersection Fatalities

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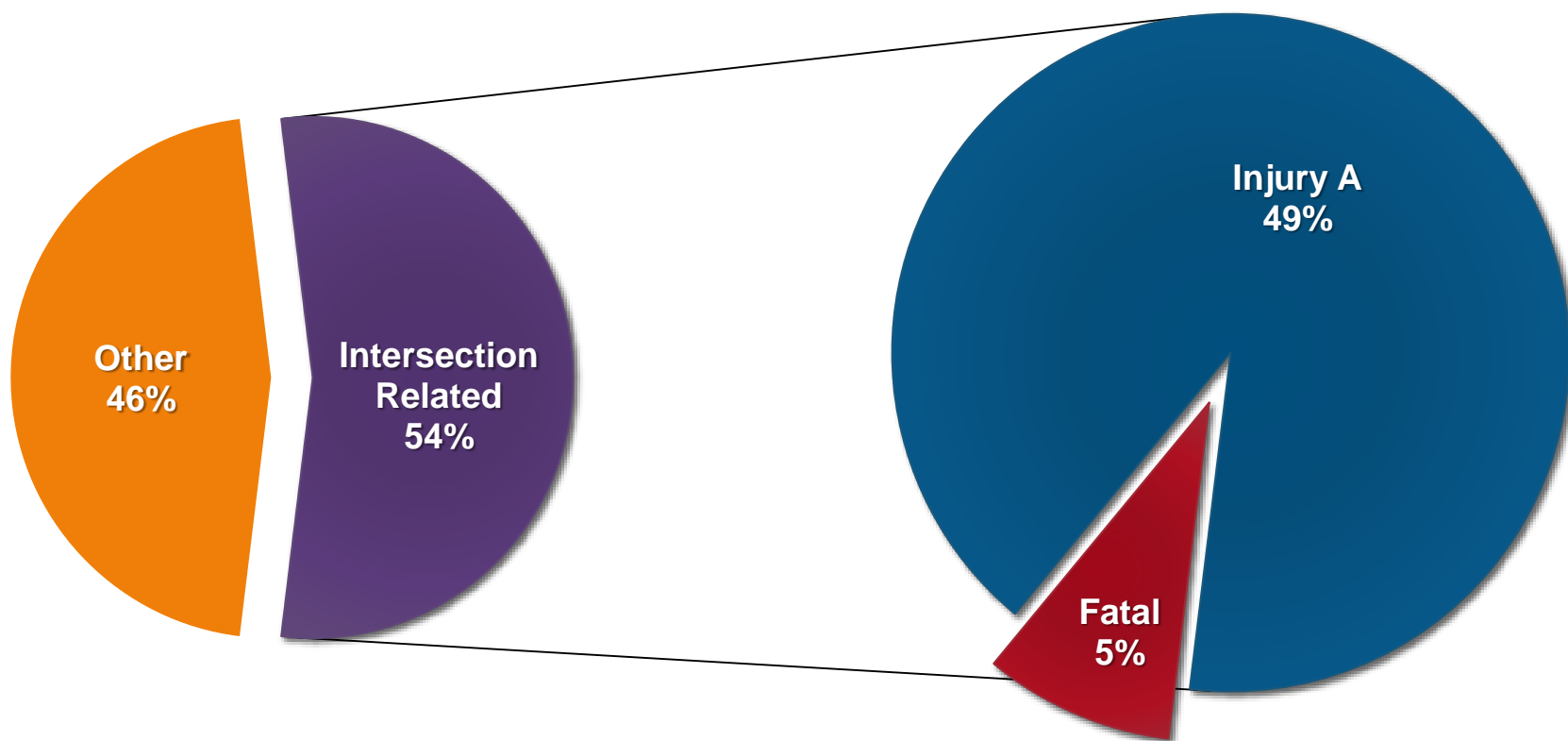
Causes			Time of Day	
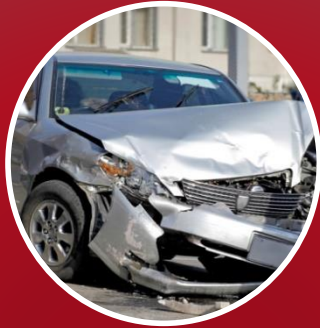
30%
Failure to Yield

26%
Speeding

16%
Red Light Running

55%
Night

45%
Day

(119 fatal intersection crashes)

Top Causes for Fatal Crashes at Intersections

Motor Vehicles

Failure to yield

Speeding

Red light running

Bicycles

Failure to yield

Running stop signs or traffic signals

Pedestrian

In roadway at unmarked intersection crossing (including high percentage during dark/nighttime conditions)

Disregarded pedestrian signal

Intersection Fatalities: Types

Failure to Yield	Pedestrian Involved (64%)	Bicycle Involved (14%)	Angle Crash (14%)
Speeding	Roadway Departure (48%)	Pedestrian Involved (20%)	Angle Crash (14%)
Red Light Running	Angle Crash (53%)	Pedestrian Involved (32%)	
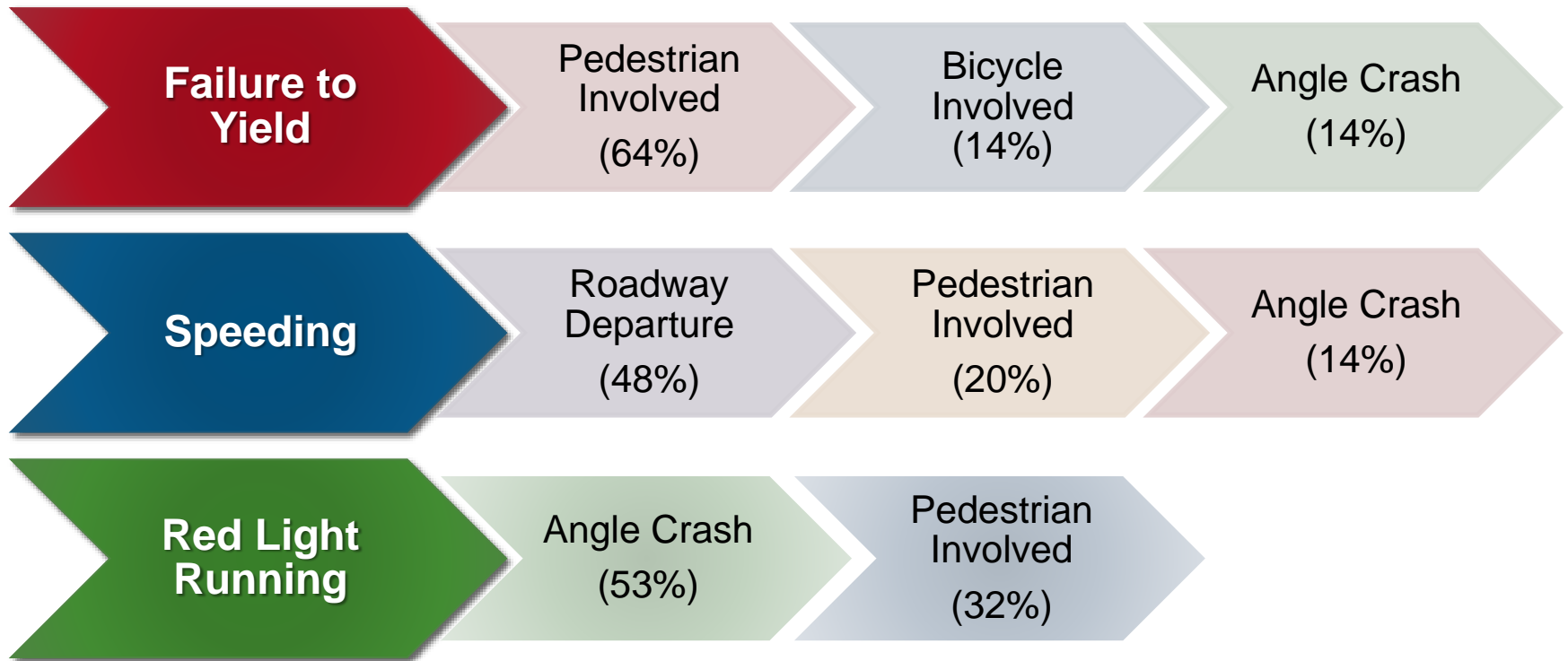
Intersection Fatalities: Time of Day

| Day | Pedestrian Involved (41%) | Road Departure (12%) |

| Night | Pedestrian Involved (59%) | Road Departure (26%) |
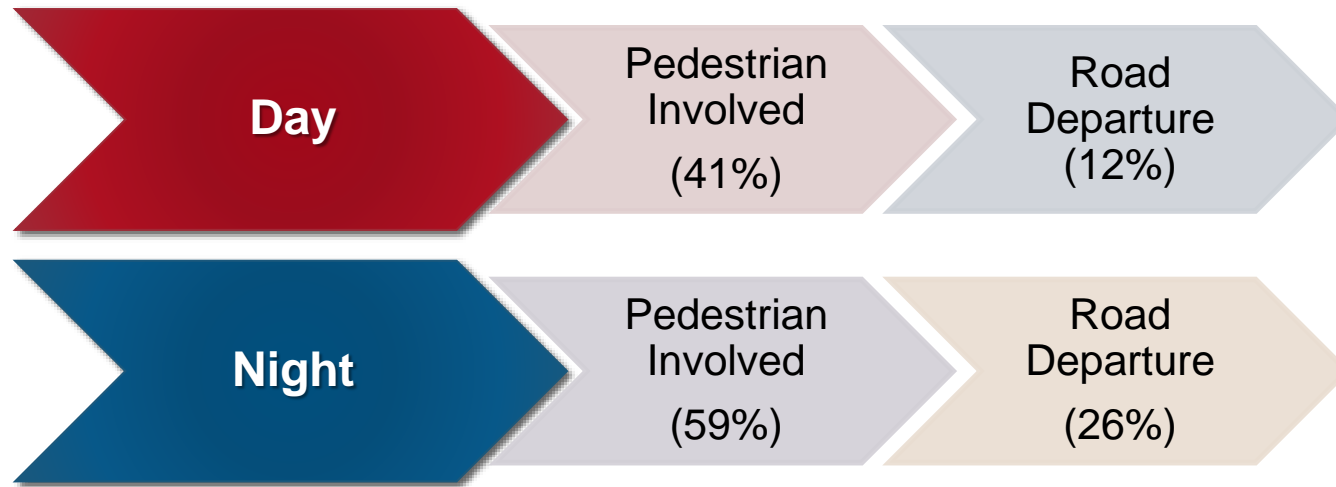
Summary

- 54% of crashes were at an intersection or intersection related

- 30% of intersection crashes were caused by a failure to yield
  - 78% of those involved a pedestrian or bicycle

- Speeding and red light running were 42% of crashes

- 55% of intersection crashes occurred at night
  - 59% of those involved a pedestrian
  - 26% were roadway departure

HIGH CRASH CORRIDORS

High Speed, High Volume, 2+ Lanes, etc…

Top 25 Crash Intersections – All Modes

Data: 2010-2013, all crash severities

Crashes all uniquely associated with one intersection

Rank by total number of crashes

Rank by collision rate
(crashes per million entering vehicles)

Rank by value of injuries based on severity
(dollars)

Rank by value rate
(dollars per million entering vehicles)

Overall Ranking

The individual metric ranks were added to together and sorted in ascending order to create overall ranking.

[1]Intersection rankings provided by PBOT using data from 2010 – 2013 and all crash severities

Top 25 Intersections – All Modes

| Rank[1]	Location	Crashes	Fatalities	Serious Injuries	Jurisdiction
1	SE 122ND AVE / SE STARK ST	165	1	2	PBOT
2	SE 122ND AVE / SE DIVISION ST	188	0	5	PBOT
3	SE 174TH AVE / SE POWELL BLVD	136	0	2	ODOT
4	SE 82ND AVE / SE POWELL BLVD	192	0	2	ODOT
5	NE 122ND AVE / NE GLISAN ST	143	0	2	PBOT
6	SE 122ND AVE / SE POWELL BLVD	119	0	1	ODOT
7	SE 82ND AVE / SE DIVISION ST	123	0	2	ODOT
8	NE 122ND AVE / NE HALSEY ST	116	1	4	PBOT
9	SE 148TH AVE / SE STARK ST	103	0	2	PBOT
10	SE 7TH AVE / SE POWELL BLVD	107	1	4	ODOT
11	SE 92ND AVE / SE POWELL BLVD	116	0	0	ODOT
12	SW BARBUR BLVD / SW CAPITOL HWY	80	1	1	ODOT
13	SE 148TH AVE / SE DIVISION ST	81	2	2	PBOT
14	SE CESAR E CHAVEZ BLVD / SE POWELL BLVD	106	2	0	ODOT
15	SE 92ND AVE / SE HOLGATE BLVD	79	0	2	PBOT
16	NE 102ND AVE / NE GLISAN ST	101	0	0	PBOT
17	NE COLUMBIA BLVD / NE I-205 SB / COLUMBIA BLVD RAMPS	117	0	0	ODOT
18	NE 82ND AVE / NE GLISAN ST	96	0	0	ODOT
19	SE 162ND AVE / SE DIVISION ST	88	0	2	PBOT
20	NE GLISAN ST / NE GLISAN ST TO I-205 NB RAMP	97	0	3	ODOT
21	SE DIVISION ST / SE DIVISION ST-I205 FWY RAMP / SE I205 FWY-DIVISION S	90	0	0	ODOT
22	SE 136TH AVE / SE POWELL BLVD	80	0	1	ODOT
23	SE HOLGATE BLVD / SE MCLOUGHLIN BLVD / SE MCLOUGHLIN BLVD-HOLGATE BLVD	84	2	2	ODOT
24	SE 112TH AVE / SE POWELL BLVD	66	1	1	ODOT
25	N INTERSTATE AVE / N LOMBARD ST	67	1	3	ODOT

[1]Intersection rankings provided by PBOT using data from 2010 – 2013 and all crash severities

Top 25 Intersections – All Modes
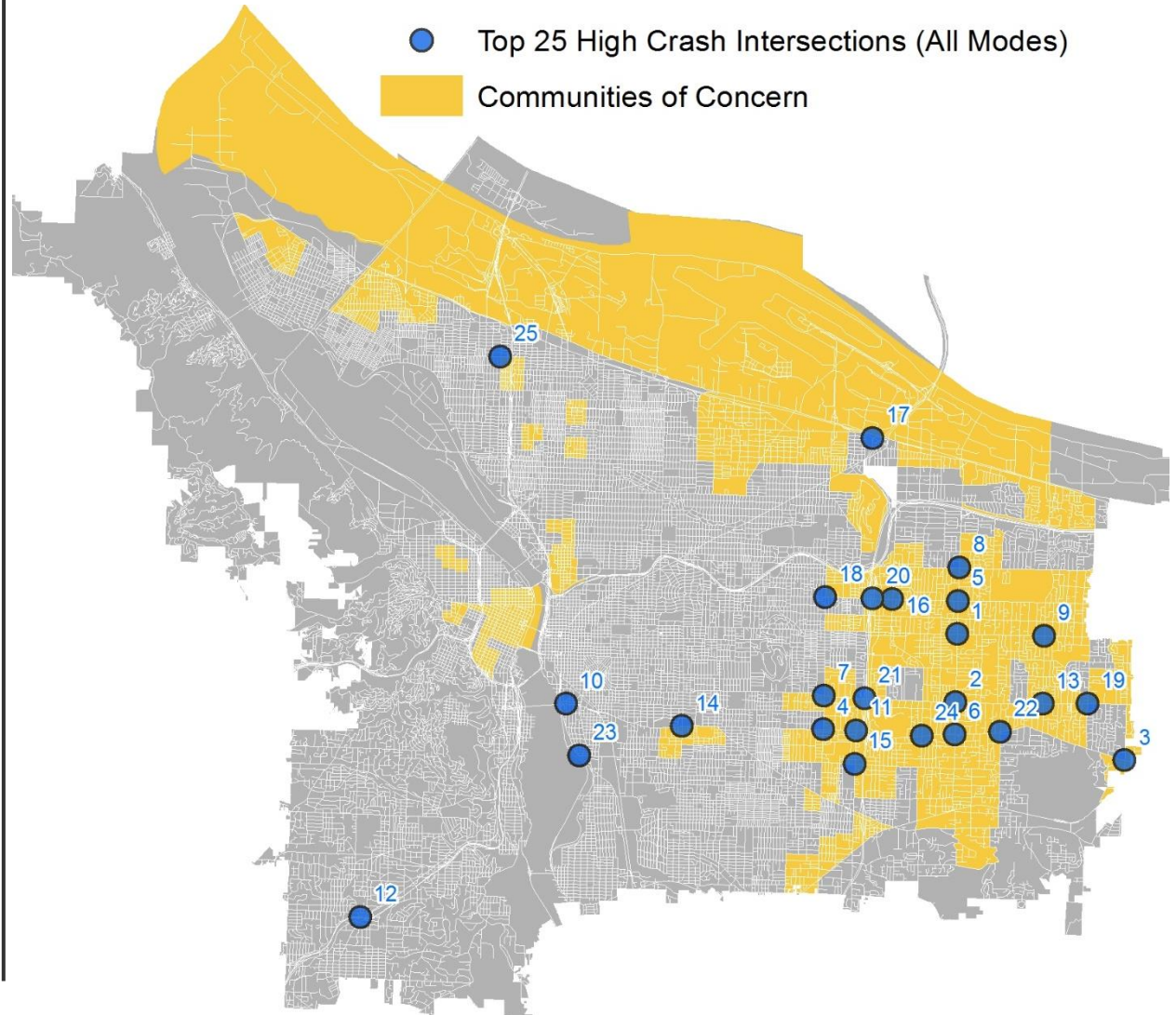
Top 25 Intersections – Bicycle

Data: 2010-2013, all crash severities

Crashes all uniquely associated with one intersection.

Filter: Bicycle-involved crashes only

Rank by total number of crashes

Rank by value of injuries based on severity (dollars)

Overall Ranking

The individual metric ranks were added to together and sorted in ascending order to create overall ranking.

Note: Some intersections have tied rankings.

Top 25 Intersections – Bicycle

Rank	Location	Crashes	Fatalities	Serious Injuries	Jurisdiction	All Modes HCL Top 25
1	SE 11TH AVE / SE HAWTHORNE BLVD	11	0	0	PBOT	No
1	SW 3RD AVE / SW MADISON ST	10	1	1	PBOT	No
3	NE COUCH ST / NE GRAND AVE	9	0	0	PBOT	No
4	N GRAHAM ST / N VANCOUVER AVE	7	0	0	PBOT	No
5	N BROADWAY / N FLINT AVE / N WHEELER AVE	7	0	0	PBOT	No
6	NE 1ST AVE / NE BROADWAY	6	0	1	PBOT	No
7	SW CAPITOL HWY / SW VERMONT ST	6	0	0	PBOT	No
8	SW BEAVERTON HILLSDALE HWY / SW BERTHA CT / SW CAPITOL HWY	5	0	0	ODOT	No
9	NE GLISAN ST / NE GLISAN ST TO I-205 NB RAMP	4	0	2	ODOT	Yes
10	NE 28TH AVE / NE BROADWAY	5	0	0	PBOT	No
11	SE GRAND AVE / SE HAWTHORNE BLVD	4	0	1	PBOT	No
12	N INTERSTATE AVE / N LOMBARD ST	5	0	0	ODOT	Yes
12	SE 7TH AVE / SE HAWTHORNE BLVD	5	0	0	PBOT	No
14	NE AINSWORTH ST / NE MARTIN LUTHER KING JR BLVD	5	0	0	PBOT	No
14	NE BROADWAY / NE VICTORIA AVE	5	0	0	PBOT	No
16	NE 122ND AVE / NE GLISAN ST	5	0	0	PBOT	Yes
17	NE 122ND AVE / NE MARINE DR	3	0	1	PBOT	No
17	SE 17TH AVE / SE MCLOUGHLIN BLVD	3	0	1	PBOT	No
19	NW BROADWAY / NW EVERETT ST	4	0	0	PBOT	No
19	NW BROADWAY / NW FLANDERS ST	4	0	0	PBOT	No
19	SW TERWILLIGER BLVD / SW CONDOR LN	4	0	0	PBOT	No
22	SE 111TH AVE / SE HOLGATE BLVD	3	0	1	PBOT	No
22	SE 50TH AVE / SE DIVISION ST	3	0	1	PBOT	No
24	NE 16TH AVE / NE IRVING ST	4	0	0	PBOT	No
24	SE 112TH AVE / SE DIVISION ST	4	0	0	PBOT	No
24	SW BARBUR BLVD / SW HAMILTON ST	4	0	0	ODOT	No

Top 25 Intersections - Bicycle

Top 25 Intersections – Pedestrian

Data: 2010-2013, all crash severities

Crashes all uniquely associated with one intersection.

Filter: Pedestrian-involved crashes only

Rank by total number of crashes

Rank by value of injuries based on severity (dollars)

Overall Ranking

The individual metric ranks were added to together and sorted in ascending order to create overall ranking.
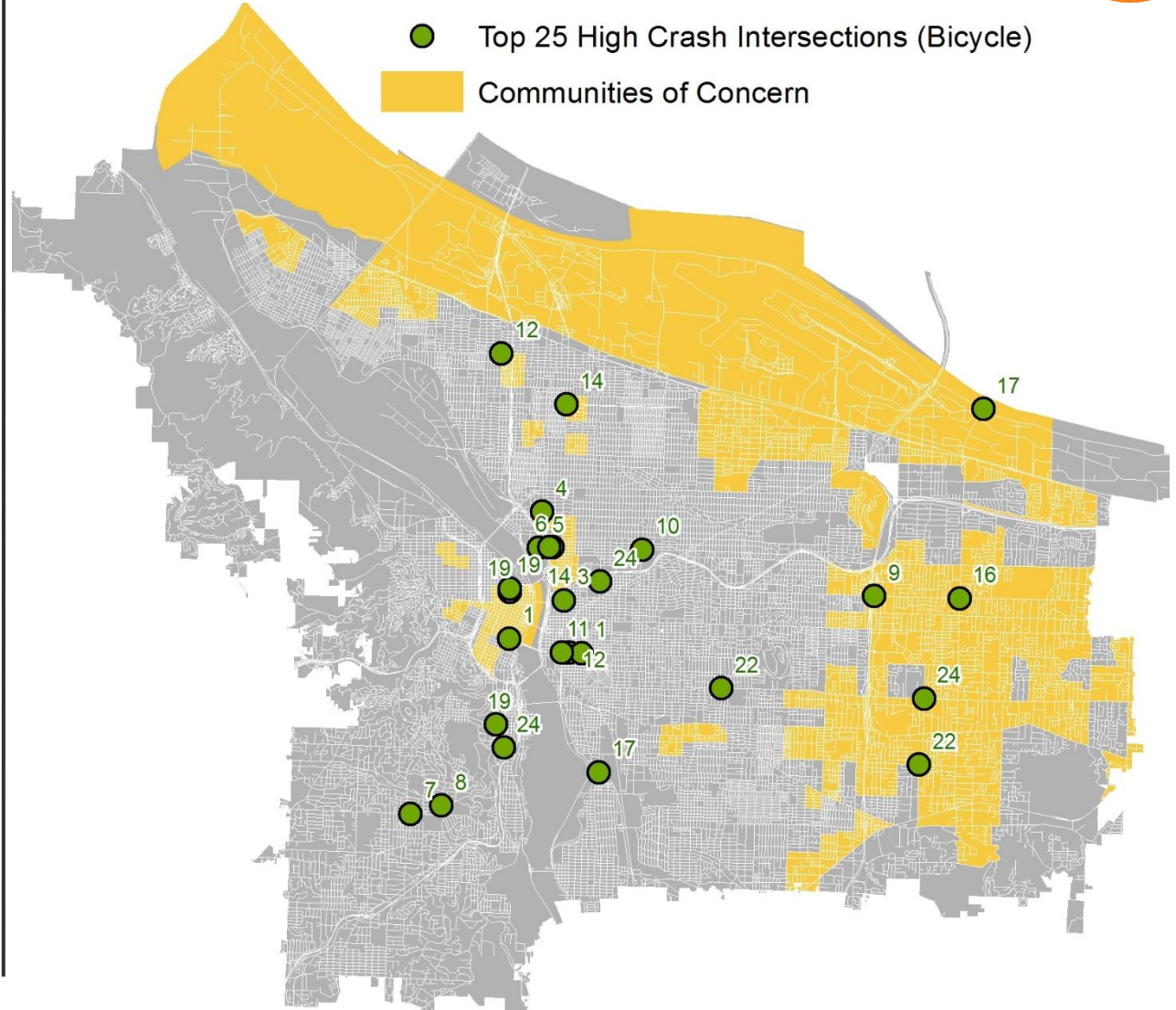
Note: Some intersections have tied rankings.
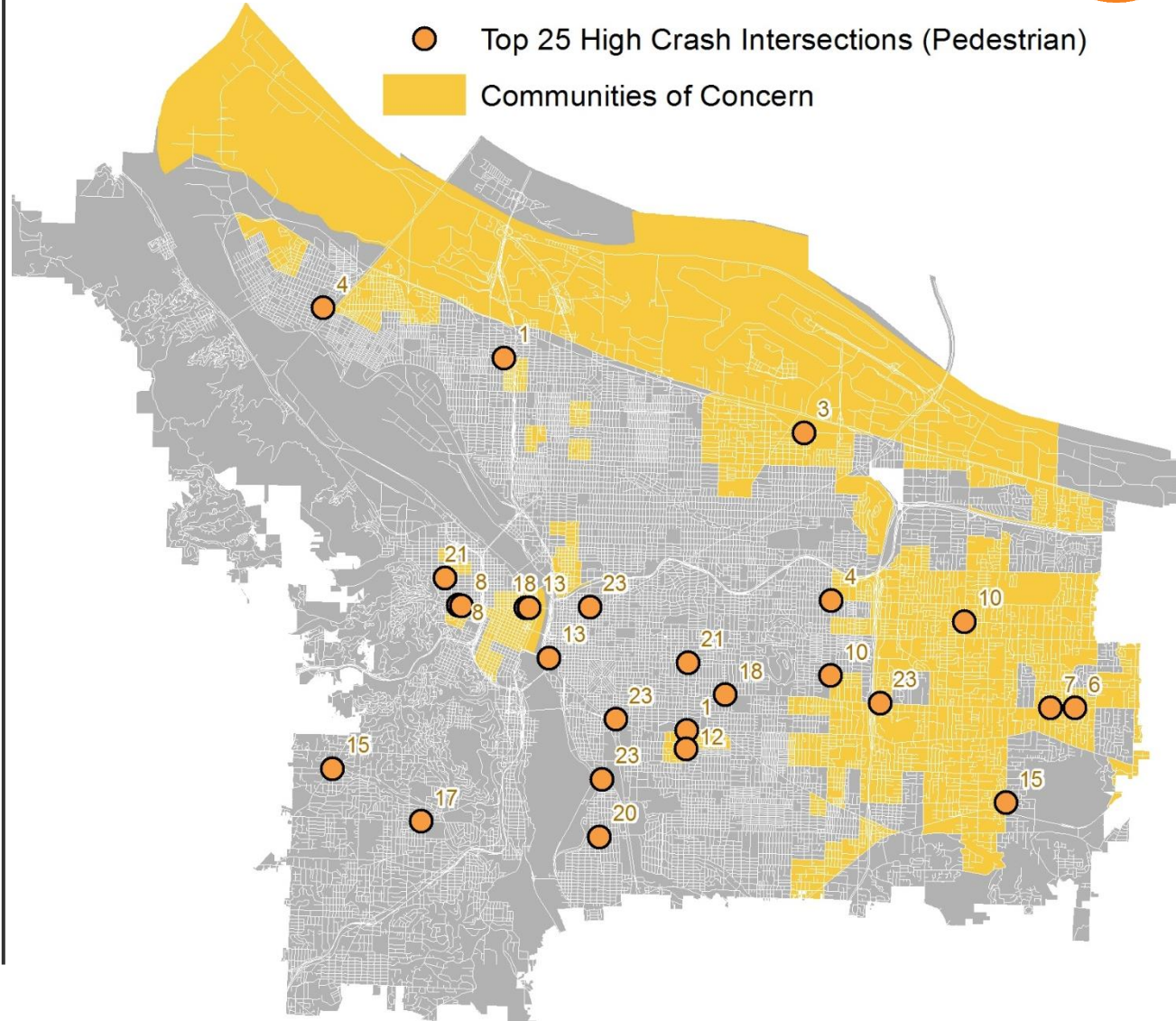
Top 25 Intersections – Pedestrian

Rank	Location	Crashes	Fatalities	Serious Injuries	Jurisdiction	All Modes HCI Top 25
1	N INTERSTATE AVE / N LOMBARD ST	8	1	3	ODOT	Yes
1	SE CESAR E CHAVEZ BLVD / SE POWELL BLVD	6	2	0	ODOT	Yes
3	NE 72ND AVE / NE KILLINGSWORTH ST	5	1	1	ODOT	No
4	NE 82ND AVE / NE GLISAN ST	7	0	0	ODOT	Yes
4	N IDA AVE / N LOMBARD ST	5	0	2	ODOT	No
6	SE 156TH AVE / SE DIVISION ST	3	2	0	PBOT	No
7	SE 148TH AVE / SE DIVISION ST	3	1	1	PBOT	Yes
8	NW 20TH PL / SW 20TH PL / W BURNSIDE ST	6	0	0	PBOT	No
8	NW 21ST AVE / SW 21ST AVE / W BURNSIDE ST	3	1	1	PBOT	No
10	E BURNSIDE ST / NE 122ND AVE / SE 122ND AVE	4	0	1	PBOT	No
10	SE 82ND AVE / SE MILL ST	3	1	1	ODOT	No
12	SE CESAR E CHAVEZ BLVD / SE GLADSTONE ST	4	0	1	PBOT	No
13	NW 2ND AVE / W BURNSIDE ST / SW 2ND AVE	4	0	1	PBOT	No
13	SE HAWTHORNE BLVD / SE WATER AVE	3	1	0	PBOT	No
15	SE 136TH AVE / SE HAROLD ST	3	1	0	PBOT	No
15	SW BEAVERTON HILLSDALE HWY / SW SHATTUCK RD	3	1	0	ODOT	No
17	SW 26TH AVE / SW CAPITOL HWY	4	0	0	PBOT	No
18	NW 3RD AVE / W BURNSIDE ST / SW 3RD AVE	5	0	0	PBOT	No
18	SE 50TH AVE / SE DIVISION ST	3	0	1	PBOT	No
20	SE BYBEE BLVD / SE MILWAUKIE AVE	3	0	1	PBOT	No
21	NW 23RD AVE / NW KEARNEY ST	3	0	1	PBOT	No
21	SE CESAR E CHAVEZ BLVD / SE HAWTHORNE BLVD	3	0	1	PBOT	No
23	NE 12TH AVE / NE COUCH ST	3	0	1	PBOT	No
23	SE 17TH AVE / SE MCLOUGHLIN BLVD	3	0	1	ODOT	No
23	SE 21ST AVE / SE POWELL BLVD	3	0	1	ODOT	No
23	SE 96TH DR / SE DIVISION ST / SE I-205 NB TO DIVISION ST RAMP	3	0	1	ODOT	No

VISION ZERO

Top 25 Intersections - Pedestrians

Top 25 Intersections – Multimodal Comparison

Top 25 Crash Corridors – All Modes

Data: 2004-2013, fatal and injury A crashes only

Crashes all uniquely associated with one street name*

Rank by collision rate
(crashes per centerline mile)

Rank by value rate of fatalities and injury-A's
(dollars per centerline mile)

Exclude: freeways and ramps, streets less than ½
mile long, missing street name data.

Overall Ranking

The individual metric ranks were added to together and sorted in ascending order to create overall ranking.

*Street identification based on ordinal (NW, SE...), name (Powell, Division...) and type (Boulevard, Court...)
Note: Some segments have tied rankings.

Top 25 Corridors – All Modes

Rank	Location	Crashes	Fatalities	Serious Injuries	Jurisdiction
1	W BURNSIDE ST	20	3	18	PBOT
2	SE POWELL BLVD	83	11	83	ODOT
3	SE 82ND AVE	48	6	47	ODOT
4	SE 122ND AVE	25	6	26	PBOT
5	SE DIVISION ST	88	7	89	PBOT
6	BR ST JOHNS BRIDGE	4	2	4	ODOT
7	SE CHERRY BLOSSOM DR	4	1	3	PBOT
8	NE PORTLAND HWY	8	2	7	PBOT
9	NW GLISAN ST	10	2	12	PBOT
10	MORRISON BRIDGE	4	2	5	PBOT
11	SE FOSTER RD	47	12	38	PBOT
12	NW 14TH AVE	5	1	5	PBOT
13	NE LOMBARD ST	13	3	15	ODOT
14	NE 102ND AVE	18	1	21	PBOT
15	NE 82ND AVE	31	1	37	PBOT
16	NE COLUMBIA BLVD	28	5	25	PBOT
17	NE MARTIN LUTHER KING JR BLVD	26	5	26	PBOT
18	SW BROADWAY	7	1	6	PBOT
19	N GREELEY AVE	13	2	13	PBOT
20	SW BARBUR BLVD	22	9	14	PBOT
21	SW NAITO PKY	6	2	4	PBOT
22	NE GLISAN ST	52	5	54	PBOT
23	SE CESAR E CHAVEZ BLVD	20	2	22	PBOT
24	NW YEON AVE	7	2	5	ODOT
25	NE LLOYD BLVD	5	0	8	PBOT

Note: Draft high crash corridor analysis, results are under revision.

Top 25 Corridors – All Modes
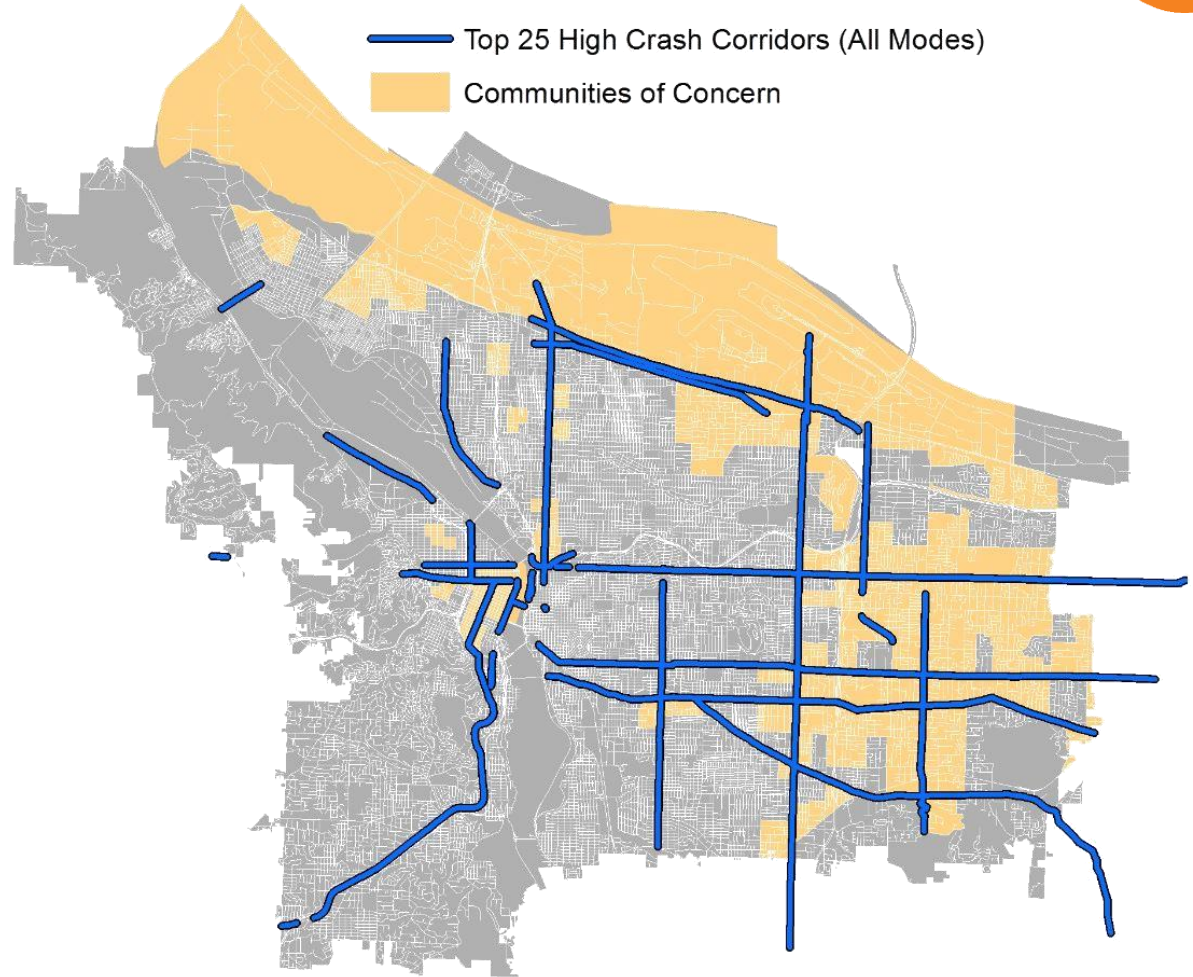
Top 25 High Crash Corridors (All Modes)

Communities of Concern

Note: Preliminary draft high crash corridor analysis, results are under revision.

Top 25 Corridors – Bicycle

Data: 2004-2013, fatal and injury A crashes only

Crashes all uniquely associated with one street name*

Filter: bicyclist-involved crashes only

Rank by collision rate
(crashes per centerline mile)

Rank by value rate of bicyclist fatalities and injury-A's
(dollars per centerline mile)

Exclude: freeways and ramps, streets less than ½ mile long, missing street name data.

Overall Ranking

The individual metric ranks were added to together and sorted in ascending order to create overall ranking.

*Street identification based on ordinal (NW, SE...), name (Powell, Division...) and type (Boulevard, Court...)
Note: Some segments have tied rankings.

VISION ZERO

Top 25 Corridors – Bicycle

Rank	Location	Crashes	Fatalities	Serious Injuries	Jurisdiction	All Mode HCI Top 25
1	SW BROADWAY	2	1	1	PBOT	Yes
2	NW 14TH AVE	1	1	0	PBOT	Yes
3	SW CLAY ST	2	0	2	PBOT	No
4	NW COUCH ST	2	0	2	PBOT	No
5	N GRAHAM ST	1	0	1	PBOT	No
6	SW MAIN ST	2	0	2	PBOT	No
7	SW 3RD AVE	2	1	1	PBOT	No
8	N VICTORY BLVD	1	1	0	PBOT	No
9	SW 20TH AVE	1	0	1	PBOT	No
10	SE CHERRY BLOSSOM DR	1	0	1	PBOT	Yes
11	NW EVERETT ST	2	0	2	PBOT	No
12	SW MADISON ST	1	0	1	PBOT	No
13	N WABASH AVE	1	0	1	PBOT	No
14	N GREELEY AVE	2	1	1	PBOT	Yes
15	SE 7TH AVE	3	0	3	PBOT	No
16	NE 1ST AVE	1	0	1	PBOT	No
17	NE WEBSTER ST	1	1	0	PBOT	No
18	SE LADD AVE	1	0	1	PBOT	No
19	NE 115TH AVE	1	0	1	PBOT	No
20	N ROSA PARKS WAY	2	0	2	PBOT	No
21	SE WATER AVE	2	0	1	PBOT	No
22	SW HARRISON ST	1	0	1	PBOT	No
23	NW GLISAN ST	2	0	2	PBOT	Yes
24	NE 15TH AVE	4	0	4	PBOT	No
25	SW MARKET ST	1	0	1	PBOT	No

Note: Preliminary draft high crash corridor analysis, results are under revision.

Top 25 Corridors - Bicycle

Top 25 High Crash Corridors (Bicycle)

Communities of Concern
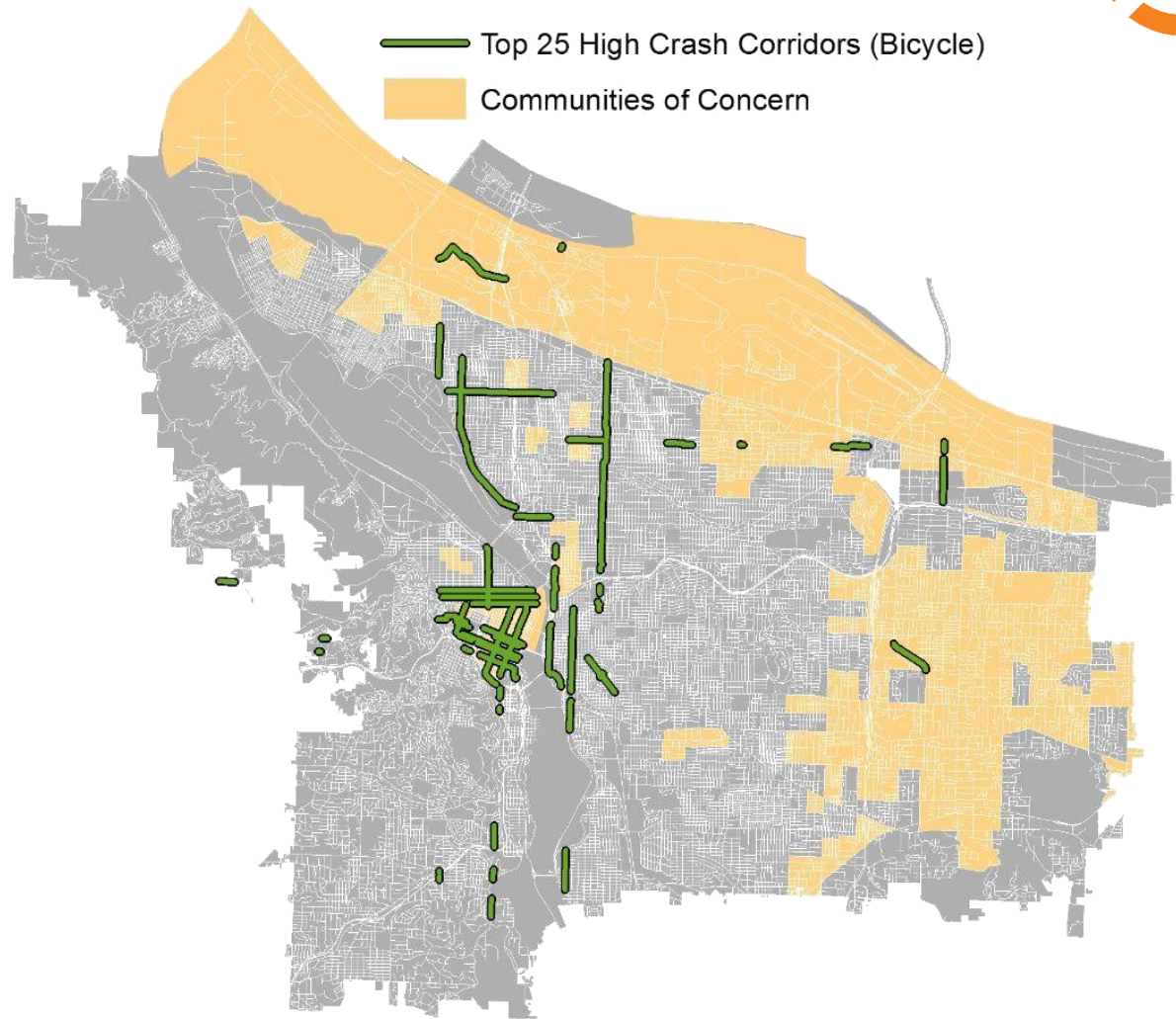
Note: Preliminary draft high crash corridor analysis, results are under revision.

Top 25 Corridors – Pedestrian

Data: 2004-2013, fatal and injury A crashes only

Crashes all uniquely associated with one street name*

Filter: Pedestrian-involved crashes only

Rank by collision rate
(crashes per centerline mile)

Rank by value rate of pedestrian fatalities and injury-A's
(dollars per centerline mile)

Exclude: freeways and ramps, streets less than ½ mile long, missing street name data.

Overall Ranking

The individual metric ranks were added to together and sorted in ascending order to create overall ranking.

*Street identification based on ordinal (NW, SE...), name (Powell, Division...) and type (Boulevard, Court...)
Note: Some segments have tied rankings.

Top 25 Corridors – Pedestrian

Rank	Location	Crashes	Fatalities	Serious Injuries	Jurisdiction	All Mode HCI Top 25
1	W BURNSIDE ST	7	2	5	PBOT	Yes
2	SE CHERRY BLOSSOM DR	2	1	1	PBOT	Yes
3	SE 82ND AVE	16	5	13	ODOT	Yes
4	SE POWELL BLVD	24	8	18	ODOT	Yes
5	SE 108TH AVE	2	1	2	PBOT	No
6	SE 156TH AVE	2	2	0	PBOT	No
7	NW 23RD AVE	2	1	2	PBOT	No
8	SW NAITO PKY	3	1	2	PBOT	No
9	SE DIVISION ST	21	4	20	PBOT	Yes
10	SE FOSTER RD	11	7	6	PBOT	Yes
11	NE JONESMORE ST	2	0	2	PBOT	No
12	SE CESAR E CHAVEZ BLVD	5	2	3	PBOT	Yes
13	NE 122ND AVE	5	1	5	PBOT	No
14	N INTERSTATE AVE	5	2	6	PBOT	No
15	N SKIDMORE ST	1	1	0	PBOT	No
16	SE HAWTHORNE BLVD	5	2	3	PBOT	No
17	NE KILLINGSWORTH ST	6	2	4	ODOT	No
18	SW BROADWAY	3	0	3	PBOT	Yes
19	SE 153RD AVE	1	1	0	PBOT	No
20	SW PENDLETON ST	1	1	0	PBOT	No
21	SE 148TH AVE	2	1	2	PBOT	No
22	SE 111TH AVE	2	1	1	PBOT	No
23	N ST LOUIS AVE	2	0	2	PBOT	No
24	NE SANDY BLVD	10	3	8	PBOT	No
25	NE 117TH AVE	1	1	0	PBOT	No

Note: Preliminary draft high crash corridor analysis, results are under revision.

Top 25 Corridors - Pedestrian

Top 25 High Crash Corridors (Pedestrian)

Communities of Concern
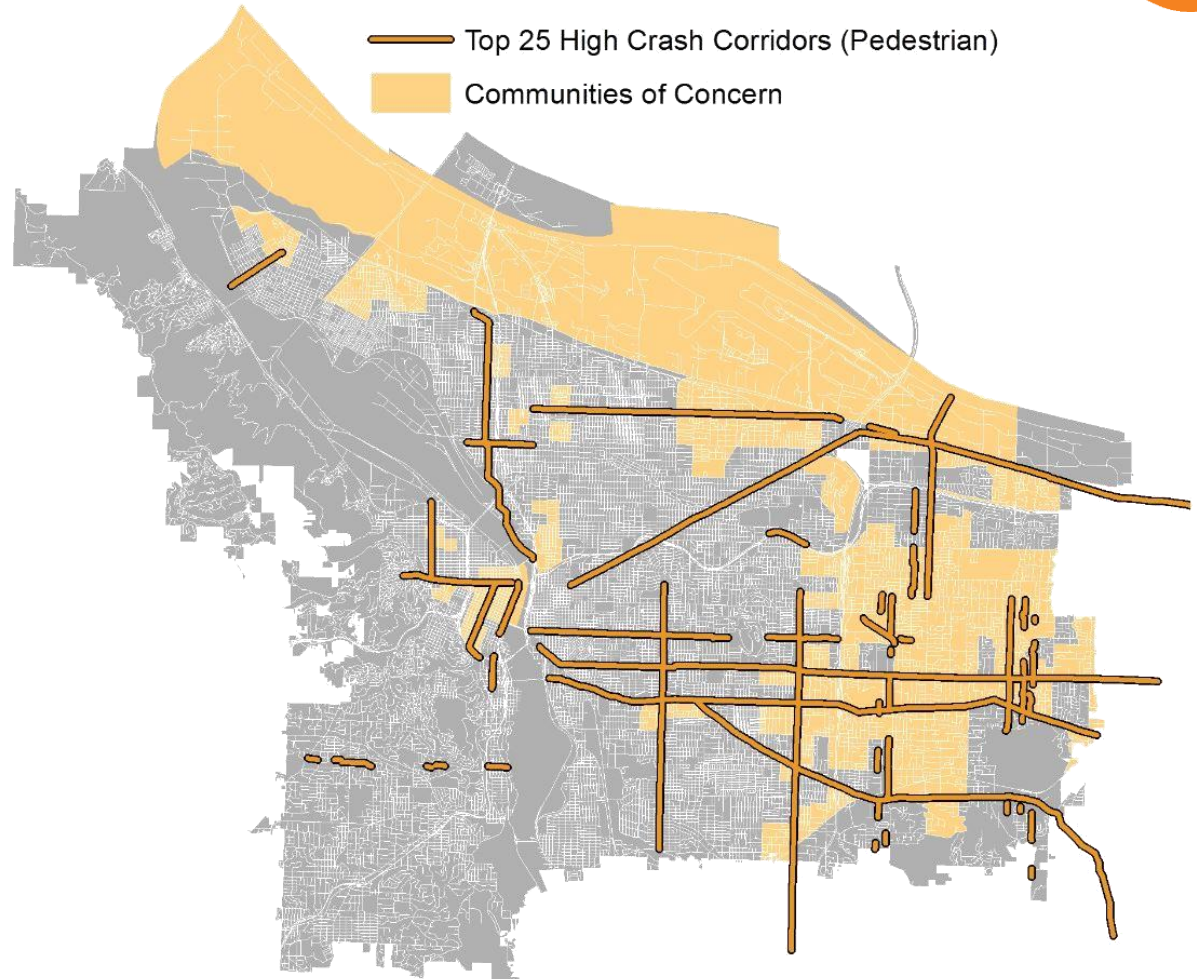
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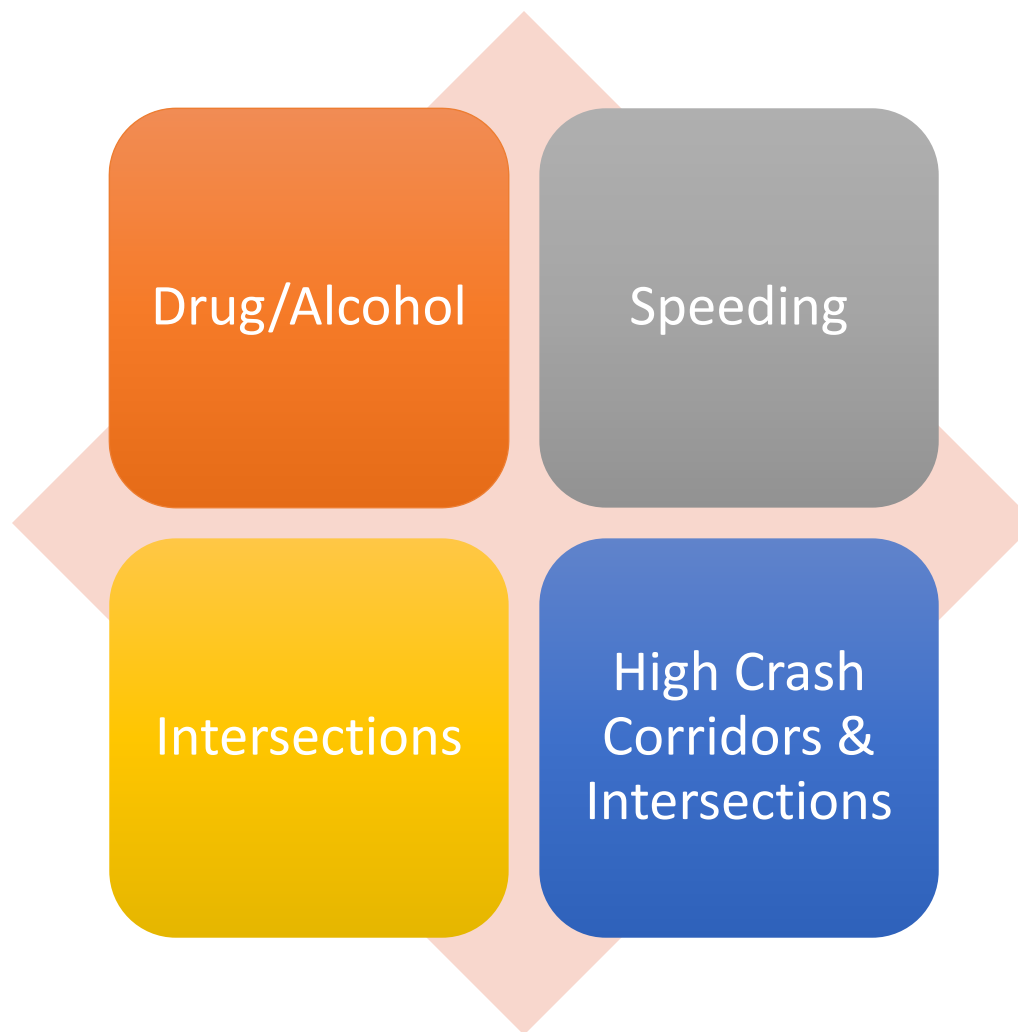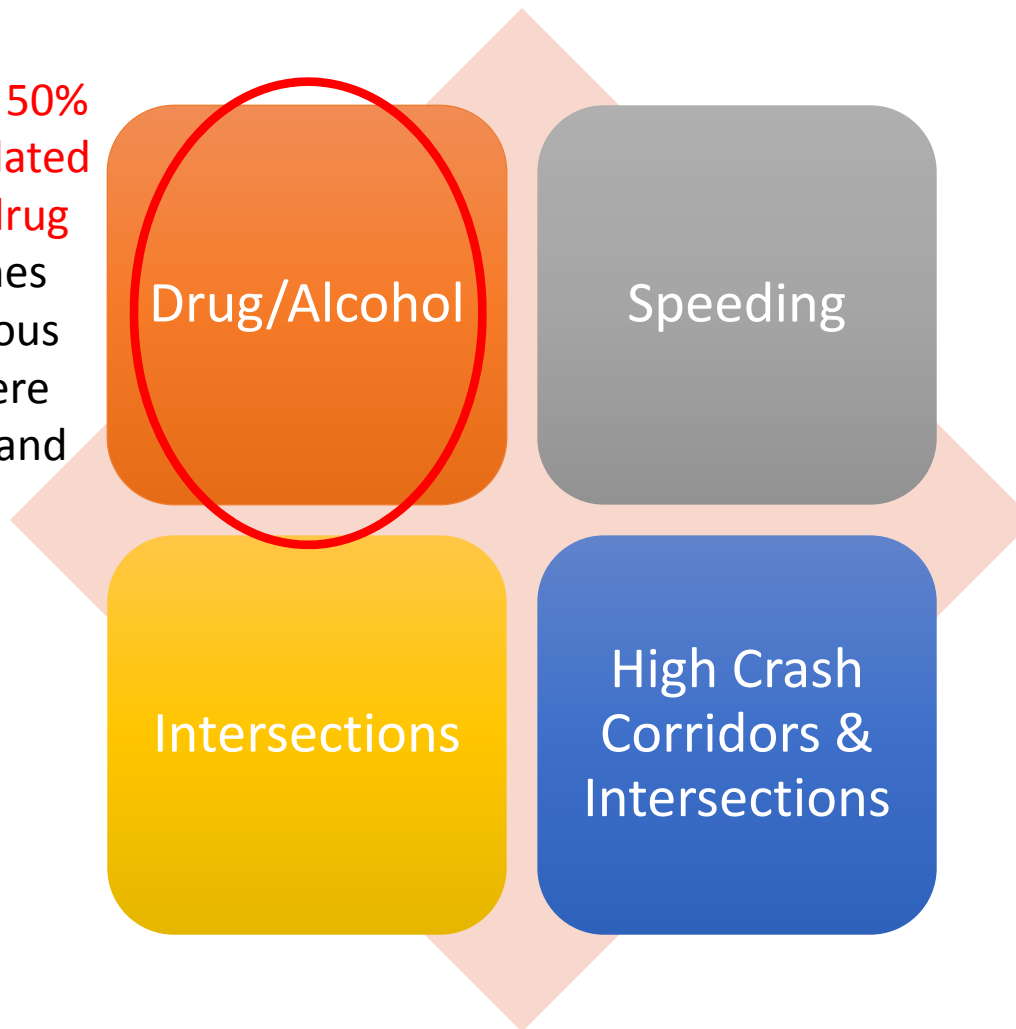# BEST PRACTICES

City of Portland – Vision Zero

Top Four Safety Trends: Impairment

In fatal crashes, 50% were alcohol related and 12% were drug related. In crashes resulting in serious injuries, 14% were related to drug and alcohol.

Drug/Alcohol

Speeding

Intersections

High Crash Corridors & Intersections

VISION ZERO

Drug and Alcohol Impairment: Best Practices

Education and Enforcement

- High school-based educational programs teaching kids not to ride with drunk drivers (CDC)

- Training for officers to recognize marijuana impairment

- Stronger enforcement in over-serve areas

Drug and Alcohol Impairment: Best Practices

Engineering and Design Best Practices

- Physical separation of users on roadways posted at 35 MPH or higher

- Better lighting on high crash corridors, particularly near intersections or marked pedestrians crossings
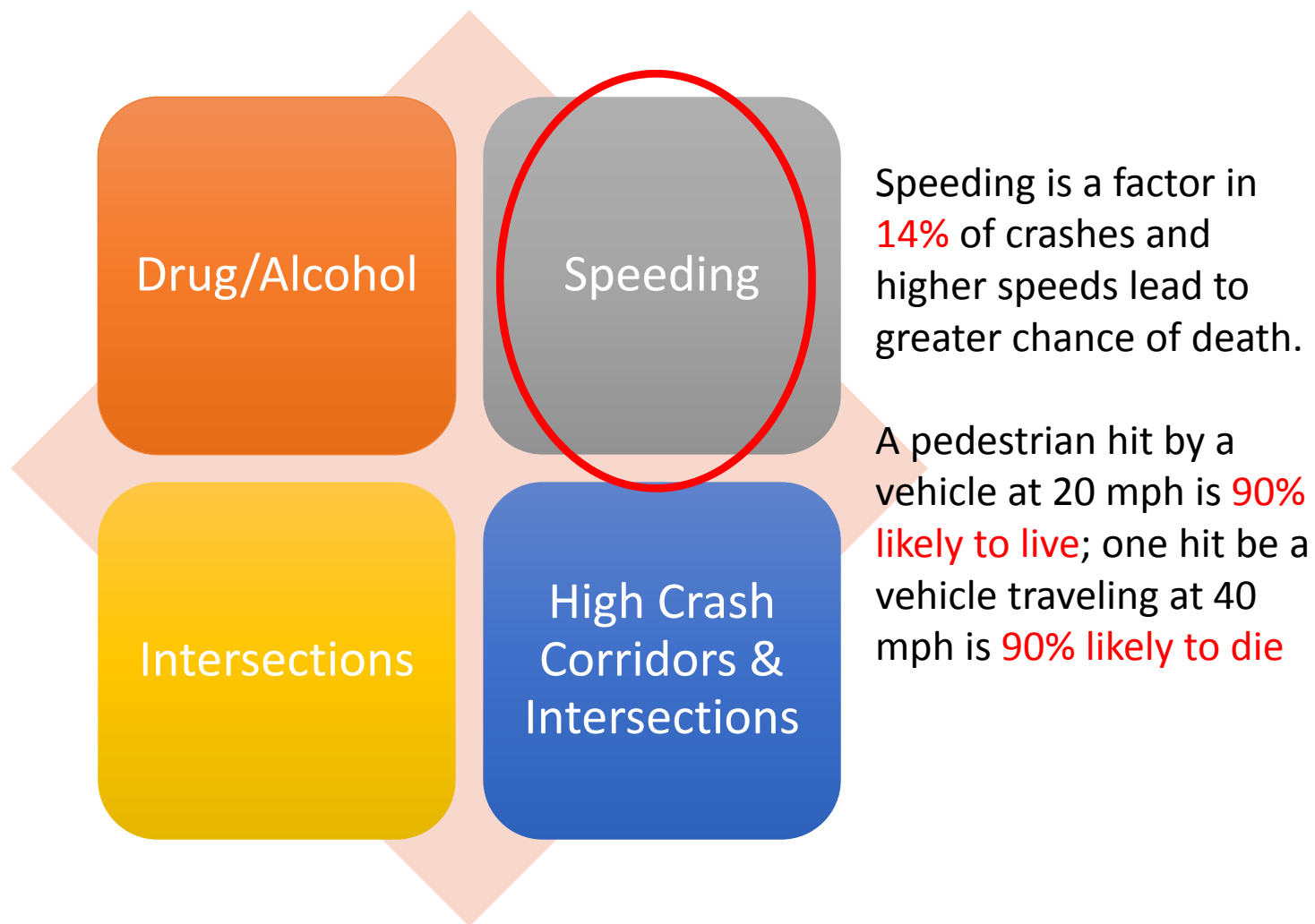
Drug and Alcohol Impairment: Best Practices

Policies

- Increase Alcohol Ignition Interlock Use (CDC)
- Work with rideshare/taxis to develop free-ride program in entertainment district or over-serve areas
- Pre-pay program for morning parking (Seattle)
- Doubling penalties if caught driving drunk with a child under 16 in the vehicle

Top Four Safety Trends: Speeding

VISION ZERO

Drug/Alcohol

Speeding

Intersections

High Crash Corridors & Intersections

Speeding is a factor in 14% of crashes and higher speeds lead to greater chance of death.

A pedestrian hit by a vehicle at 20 mph is 90% likely to live; one hit be a vehicle traveling at 40 mph is 90% likely to die

Speed and Speeding: Best Practices

Education and Enforcement

- Lower speed limits on identified roadways

- Stronger speeding enforcement on high crash corridors

- High quality media campaigns on high crash corridors (i.e. "Speed Kills" campaigns)

- Add speed radar cameras on two high crash corridors each year

Speed and Speeding: Best Practices

Engineering and Design

- Narrow travel lanes and/or implement road diets

- Add traffic calming features such as street trees, curb extensions, median islands, buffered bike lanes, and on-street parking where possible

- Commit to engineering improvements on *xx* high-crash roadways per year

# Speed and Speeding: Best Practices

Policies

- Lower the speed limit on high crash corridors
- Lower the speed limit citywide
- Increase penalties for repeat speeding citations
- High quality media campaign about speeding
- Apply safety performance measures/thresholds when considering plan amendments and TSP updates

Top Four Safety Trends: Intersections

Serious injury and fatal crashes involving pedestrians are most likely when pedestrians are crossing at intersections without a stop control or midblock

Serious injury and fatal crashes involving bicycles are most likely to occur at intersections from a failure to yield (i.e. right and left hooks by turning vehicles)

Drug/Alcohol

Speeding

Intersections

High Crash Corridors & Intersections
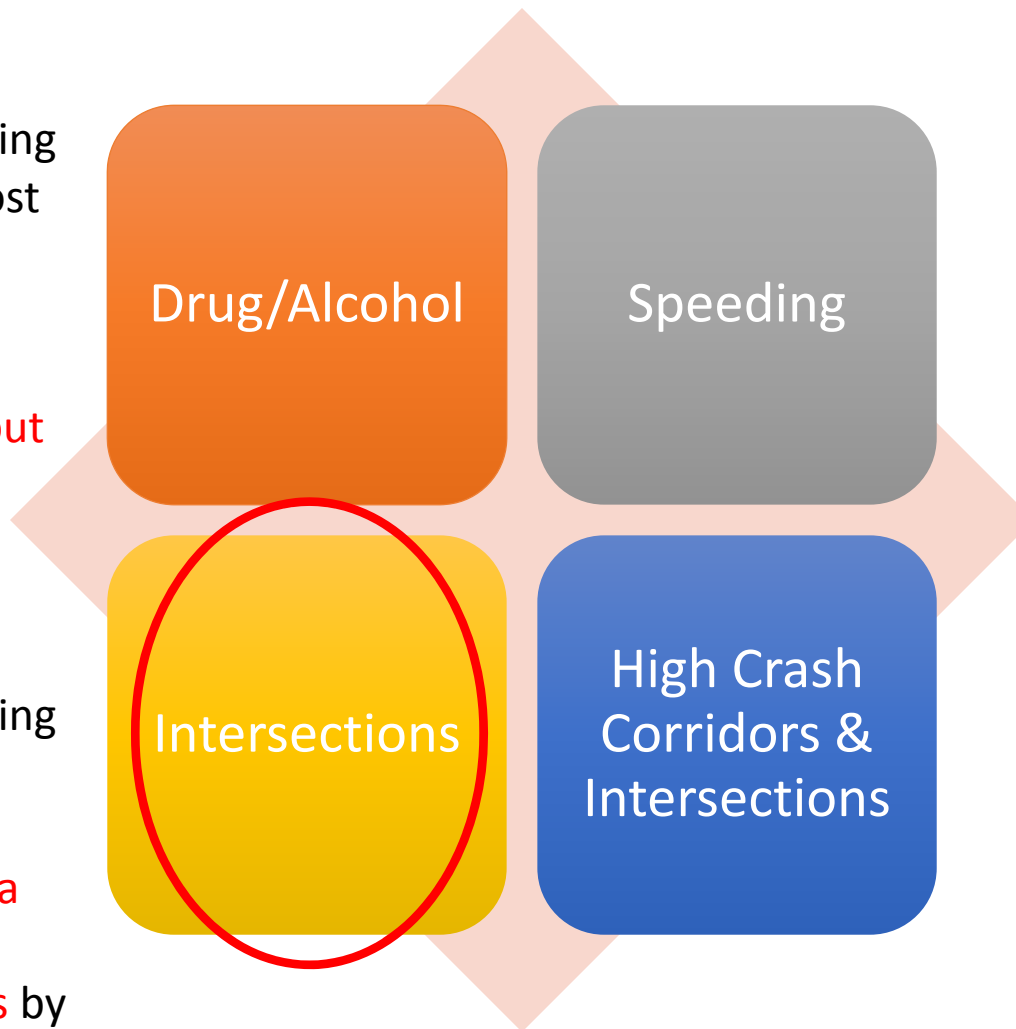
Intersections: Best Practices

Education and Enforcement

- Focus traffic citations on key contributing factors (i.e. failure-to-yield and other reckless driving behaviors)

- Transportation safety training through Safe Routes to School and other programs (i.e. "getting ready to drive" component for middle school students)

- Focused enforcement days at intersections with high crash rates for vulnerable users

- Red light running cameras

Intersections: Best Practices

Engineering and Design

- **Install Leading Pedestrian Intervals** (37% crash reduction for all bike/ped crashes)

- **Improve illumination** (28-38% reduction in night injury crashes; 42% reduction in all injury bike/ped crashes)

- **Roundabouts** (78-82% crash reduction)

- **Left turn lanes at unsignalized intersections** (33-47% crash reduction)

- **Convert permitted left turns to protected** (99% reduction all left turning crashes)

- **Install "No Ped" phase feature with flashing yellow arrow** (43% reduction for all ped crashes)

Intersections: Best Practices

Engineering and Design, cont'd

- Install high visibility lane markings through intersections

- Tighten turning radii on corners to slow turning vehicles

- Adopt formal design standards for pedestrian crossing facilities and upgrade existing marked crossings to meet standards

- Use curb extensions and daylight corners to increase pedestrian visibility

Intersections: Best Practices

Policies

- Increase penalties for failure-to-yield and distracted driving citations

- Identify safety enhancements necessary for existing marked crosswalks to meet the crossing design standard

- Ensure sufficient crossing opportunities on multi-lane roadways to serve pedestrians
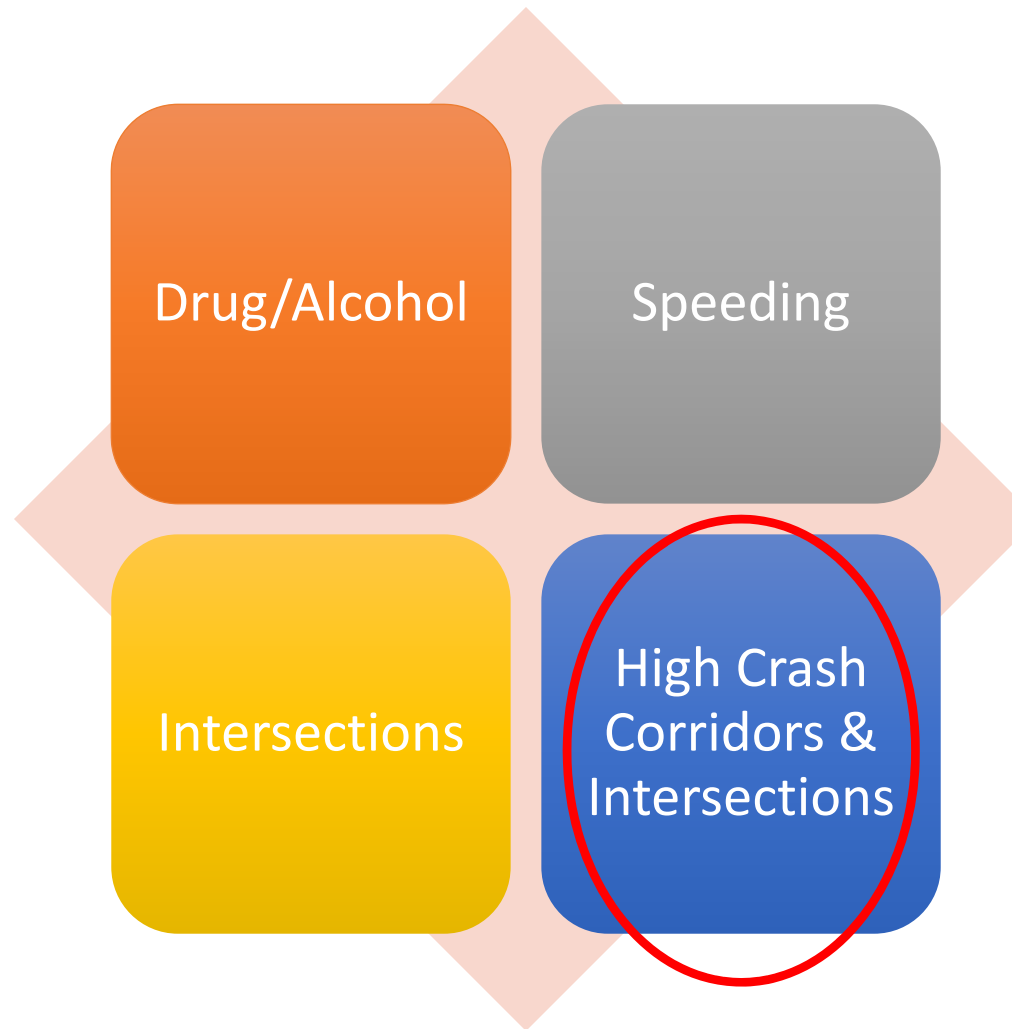
High Crash Corridors and Intersections: Best Practices

Education

- Convene neighborhood street teams of residents and business owners along HCCs to identify transportation safety challenges, engage in outreach with neighbors and lead change in their neighborhoods

- Innovative education campaigns with print and social media (e.g. "Reckless driving kills" campaign in NYC, "Paris Says Stop")

High Crash Corridors and Intersections: Best Practices

Engineering and Design Best Practices

- Lower posted speeds on high crash corridors

- Use traffic calming devices, particularly around schools, senior centers and other high activity centers

- Bike lanes (36% reduction for bike injury crashes), added Buffer (11% reduction for bike injury crashes)

- Median barrier/access management (22-39% reduction on all injury crashes)

- Dynamic curve speed warning system (40% reduction for all curve crashes)

High Crash Corridors and Intersections: Best Practices

Engineering and Design Best Practices, cont'd

- Centerline rumble strips (12% reduction all injury crashes)

- Shoulder rumble strips (22% reduction all run off road crashes)

- Monitor signal timing and adjust for longer red clearance cycle at intersections with disproportionate numbers of crashes

High Crash Corridors and Intersections: Best Practices

Policies

- Require annual workplans and reporting by an interagency task force on Vision Zero to update the public on progress toward reducing fatalities and serious injuries on all roadways

- Identify safety-related improvements that can be bundled into infrastructure/ development projects

- Collaborate with freight operators to understand needs and ensure safe movement/ circulation through the city

Vision Zero| Questions for TAC

- Does the overall organization of Best Practices by trend make sense?

- Are education/ enforcement, engineering/ design, and policy the right buckets for actions?

- Other best practices or ideas we should include?