

City of Mesa Crashes

An Overview of Mesa's Approach to Crash Analysis



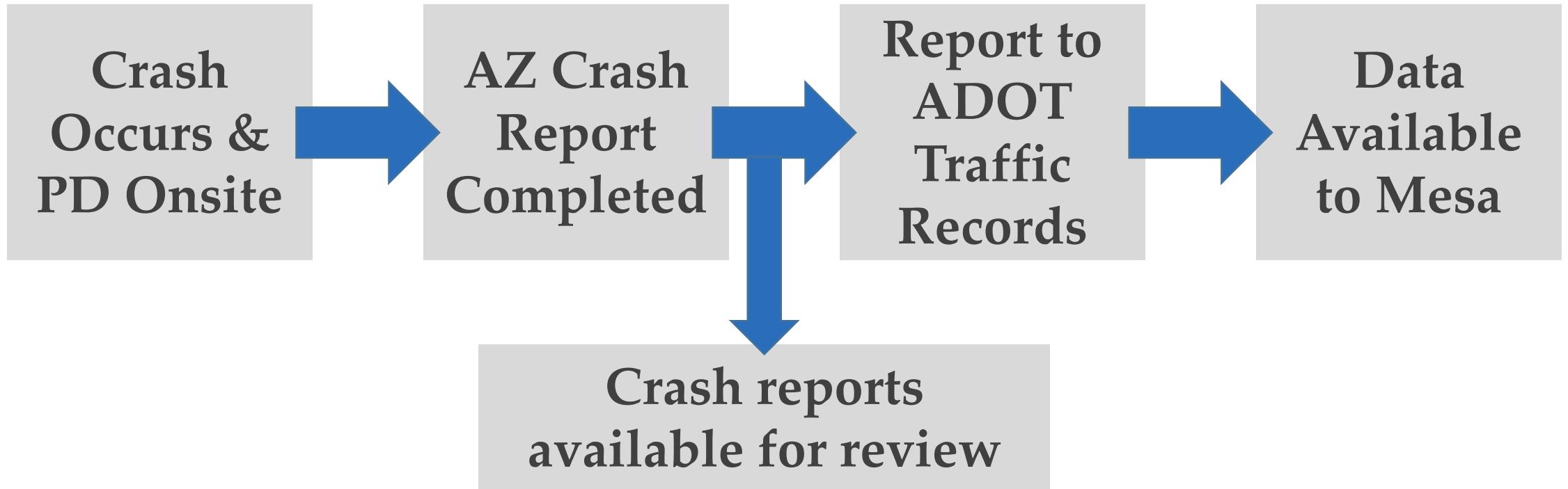
Agenda

- Background on Crash Data
- Basis for Crash Analysis
- Statistics & Trends
 - National, Regional and Local
- How the Crash Analysis is Used



Mesa's Crash Data

Background on Crash Data



Crash Analysis

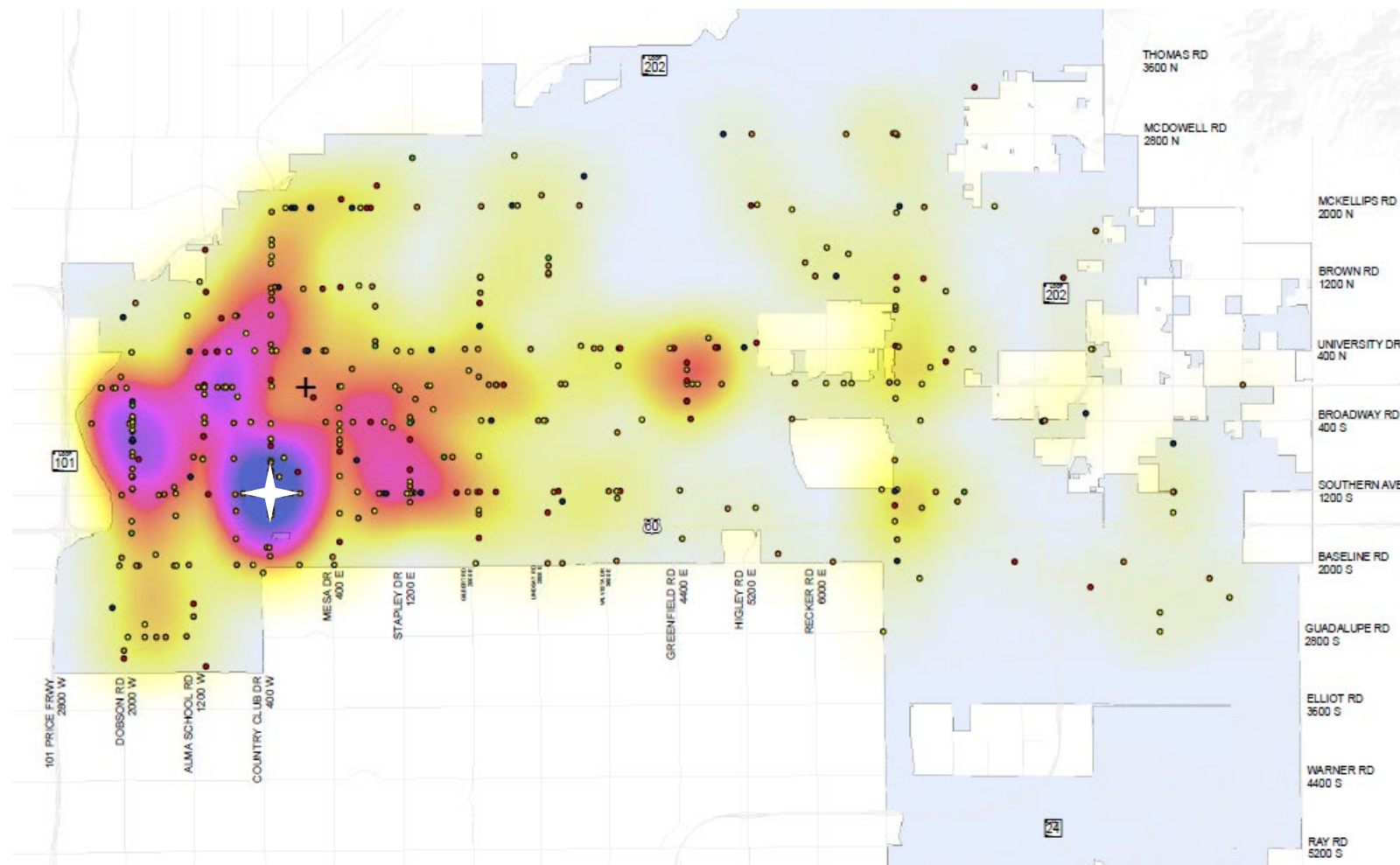
Crash Analysis Types

Locational:

- Study requests
- Safety reviews
- Part of design

Historical Trends:

- Compiled data from annual reports
- Networking screening tools & visualizations



Annual Crash Statistics - National

USDOT's National Highway Traffic Safety Administration (NHTSA)

2021 Fatal Crash Takeaways (NHTSA, 2022):

- Early estimates show **42,915 people died** in motor vehicle crashes.
 - 10.5% increase from 2020
 - Largest projected number of fatalities since 2005
- National vehicle miles travelled (VMT) in 2021 **increased** by 11.2%.
- Early analysis shows that main behaviors leading to fatal crashes includes **impaired driving, speeding, and failure to wear a seatbelt.**



State & Regional Level

Arizona Department of Transportation (ADOT)

2021 Crash Facts:

- Increase in total crashes & injury crashes, and an **increase in fatal crashes**
- Increased fatalities observed for **pedestrians, bicyclists & lane departures**

Maricopa Association of Governments (MAG):

- Increase in **fatal crashes on arterial & local roads**
- Continued increase in **fatal & injury pedestrian crashes**



Annual Crash Reports - Mesa

Detailed statistics for **fatal, serious injury, bike, and pedestrian crashes**

- All data is verified against the actual crash report and other key metrics are generated

2021 Annual Report Takeaways:

- Pedestrian fatalities – **22%** of all crash fatalities
- Predominant cited violations – **failure to yield, disregarded signal & speed too fast**
- Total number of **crashes increased (+11.9%)** and **fatalities increased (+2.7%)**
- Impairment in fatal crashes – **50%** drug/alcohol involved

2022 Snapshot (Fatal Crashes):

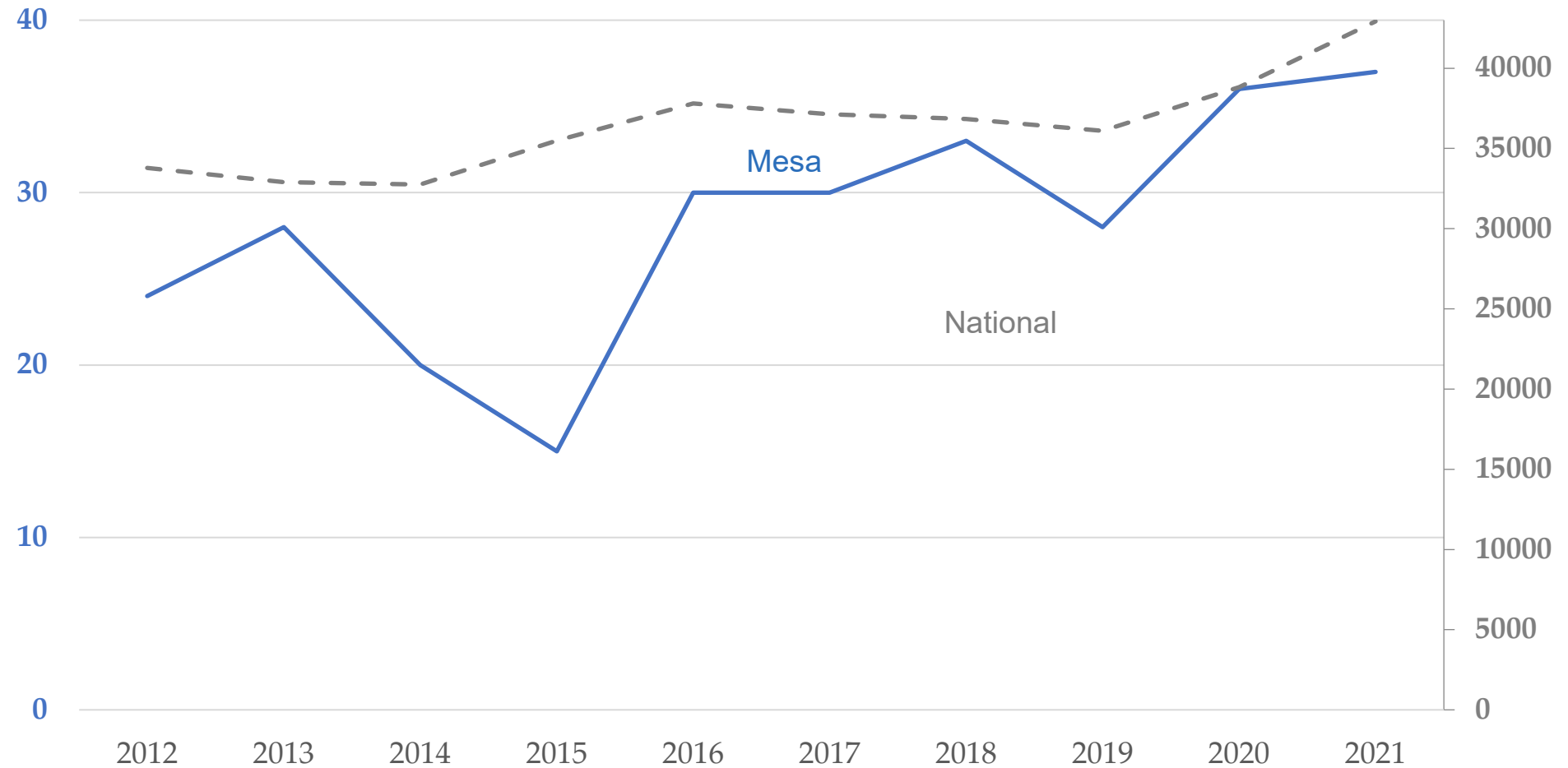
- **44** fatal crashes in 2022 – increase year to date
- **39%** citing **impairment** as a factor
- **13** pedestrian, & **3** bicyclist fatalities – increase from previous year
- **13** motorcyclist fatalities – increase from previous year

Statistics & Trends

Fatal Crashes

- 10-Year Mesa & National

Mesa & National Total Fatalities by Year

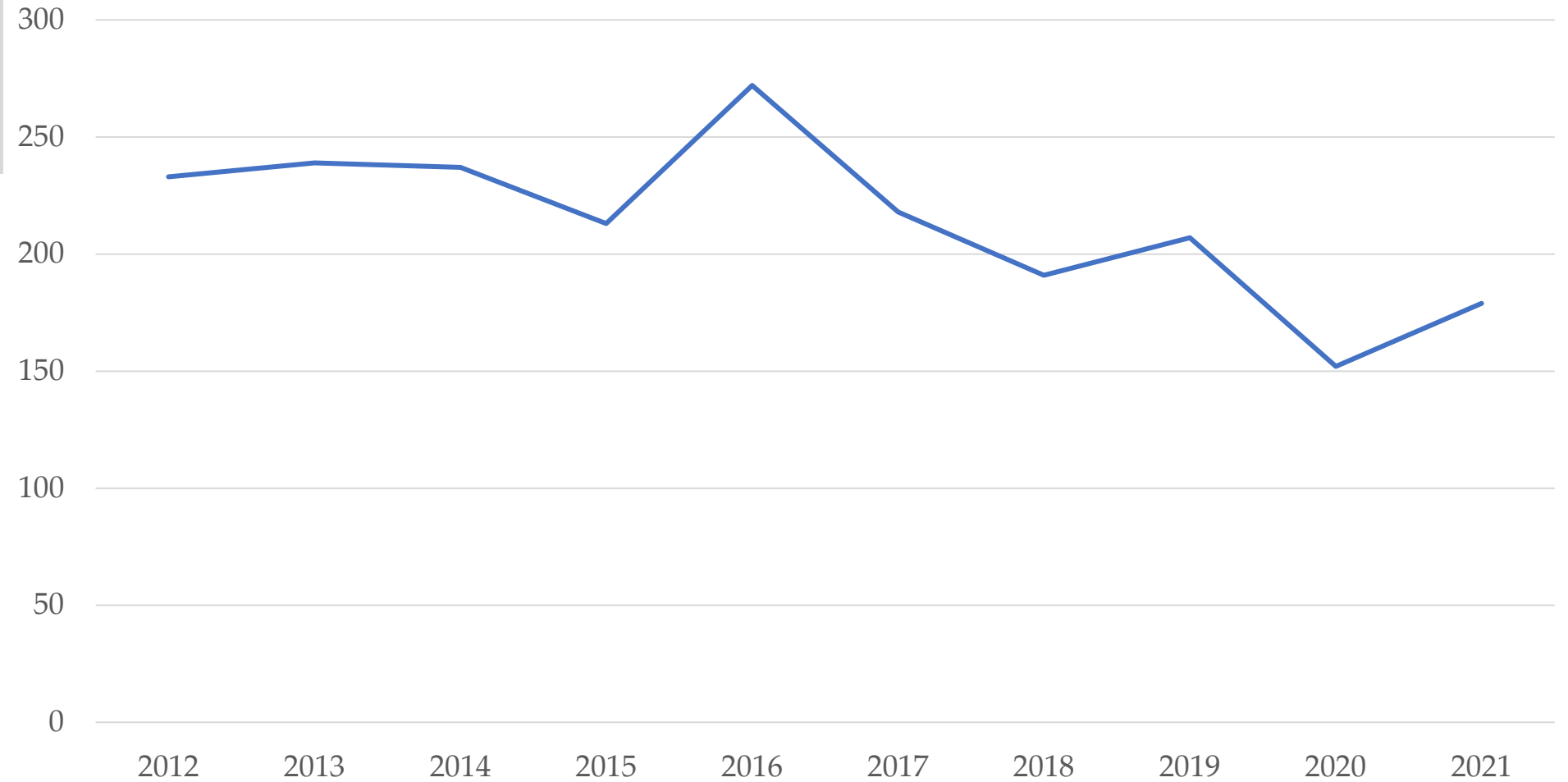


Statistics & Trends

Serious Injury Crashes

- Mesa 10-Year

Mesa Total Serious Injuries by Year

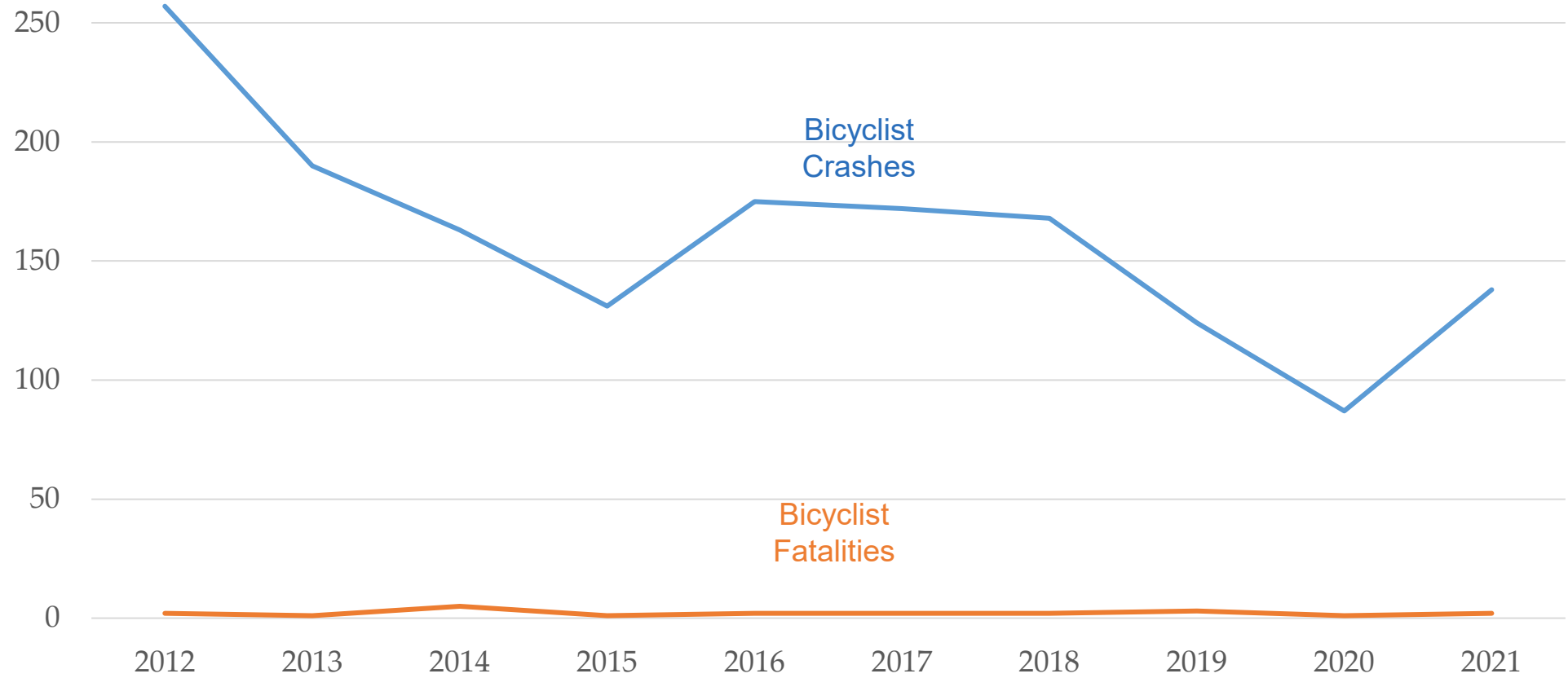


Statistics & Trends

Bike Crashes

- Mesa 10-Year

Mesa Bike Crashes by Year

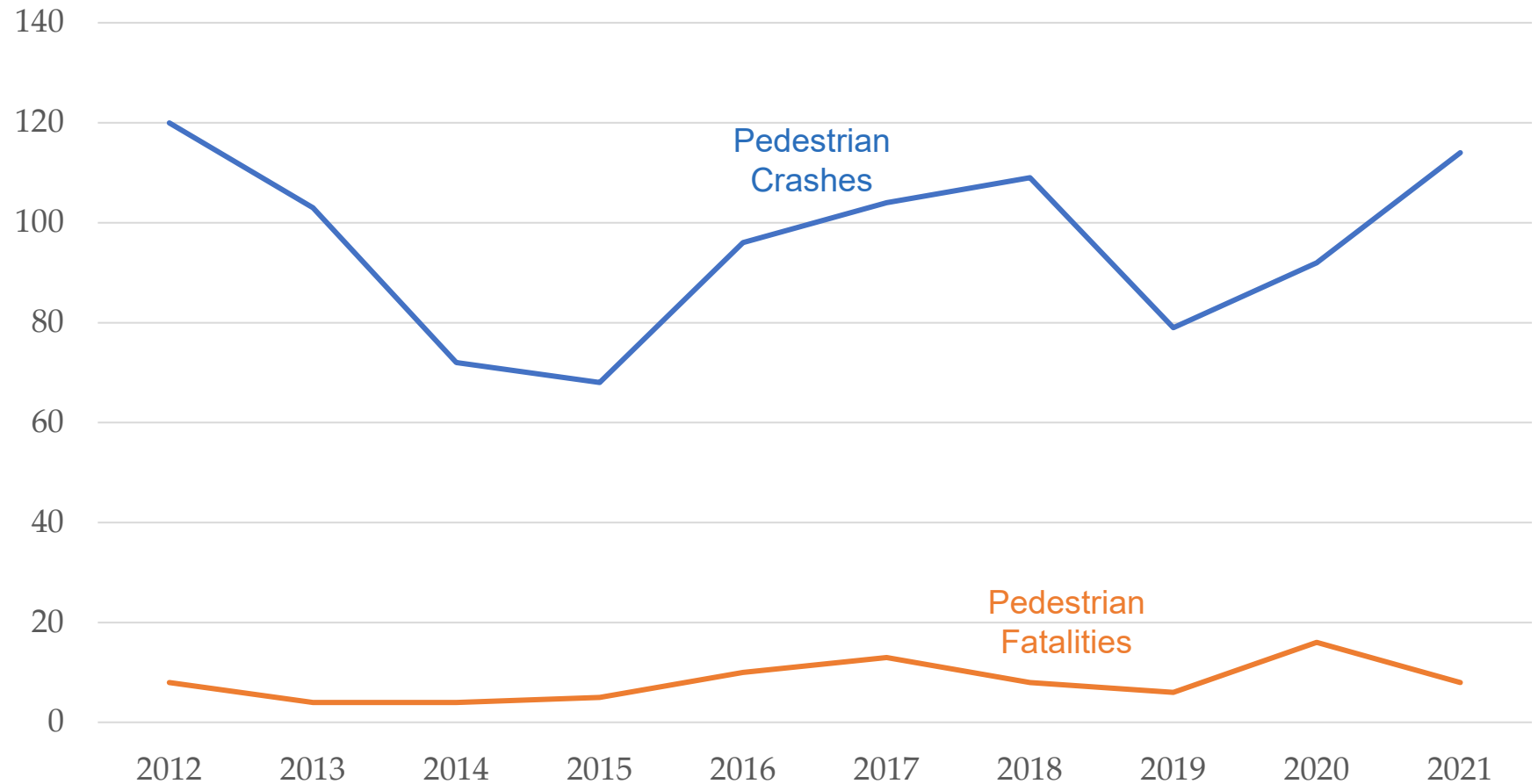


Statistics & Trends

Pedestrian Crashes

- Mesa 10-Year

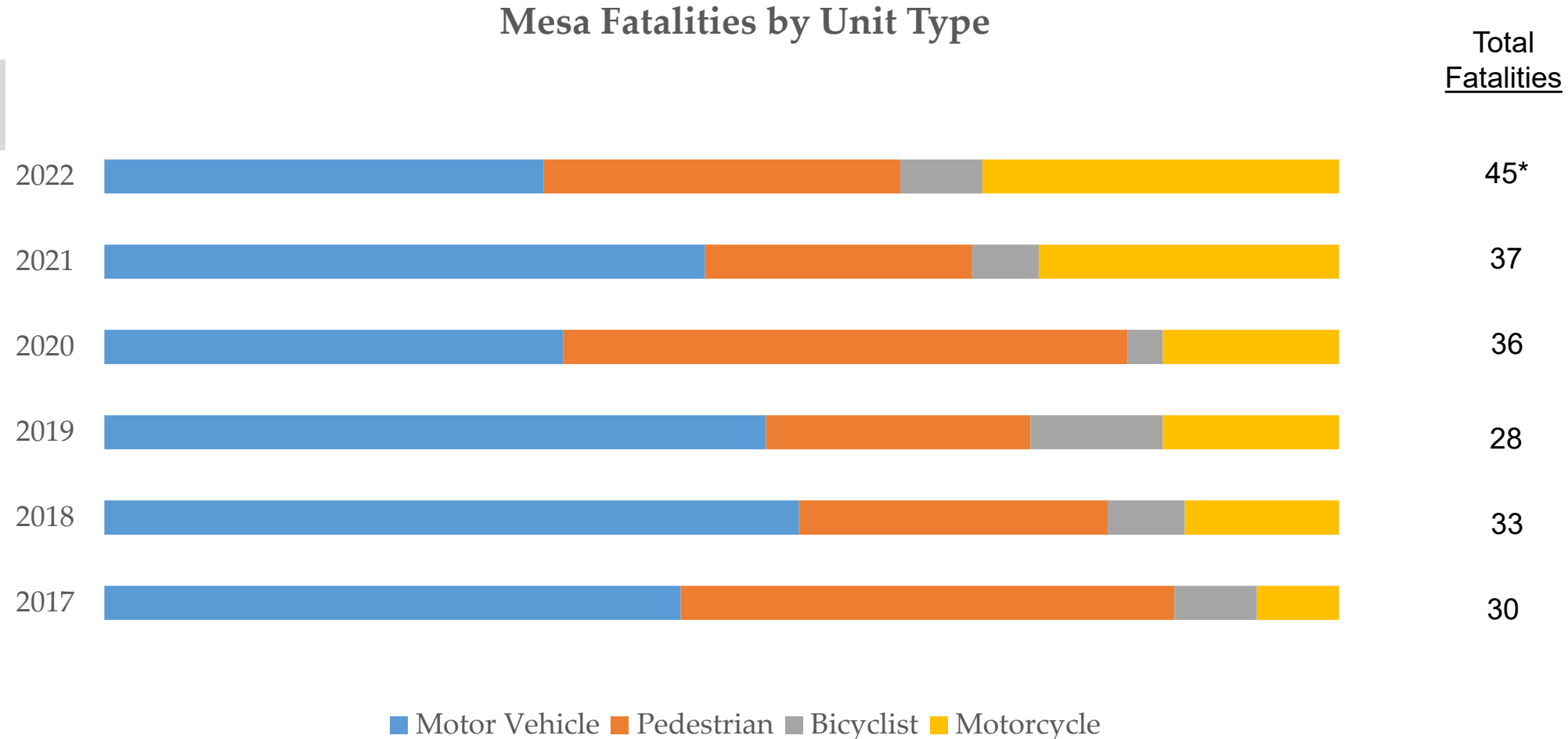
Mesa Pedestrian Crashes by Year



Statistics & Trends

Fatalities

- Unit Type



*Preliminary 2022 numbers

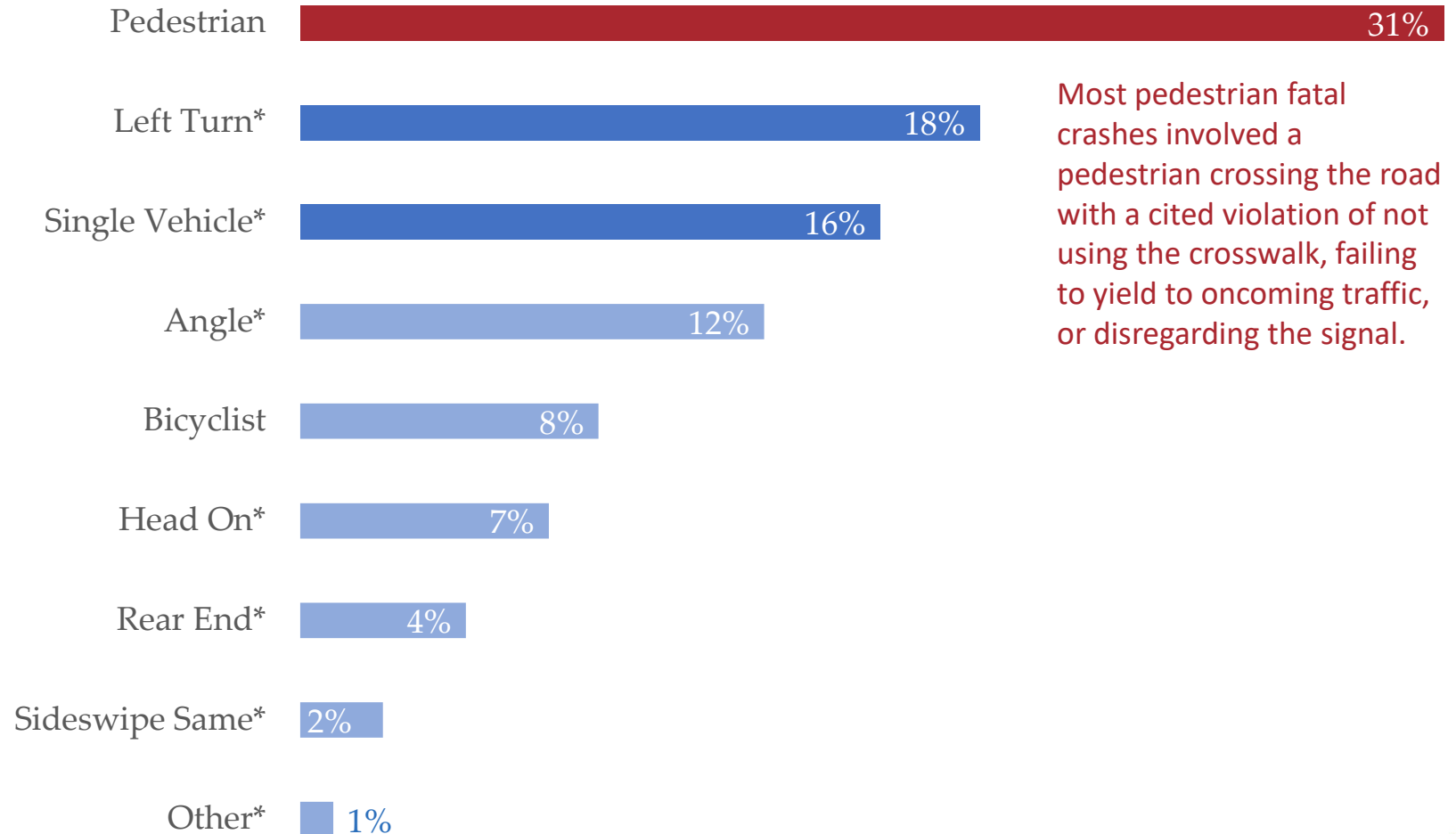
Statistics & Trends

Fatal Crashes

- Manners

Nearly one-third of all fatal crashes in 2014 – 2021 involved a **pedestrian**.

Crash Manners - 2014 to 2021 Fatal Crashes in Mesa



Most pedestrian fatal crashes involved a pedestrian crossing the road with a cited violation of not using the crosswalk, failing to yield to oncoming traffic, or disregarding the signal.

*Motor vehicle crashes not involving bike or pedestrian

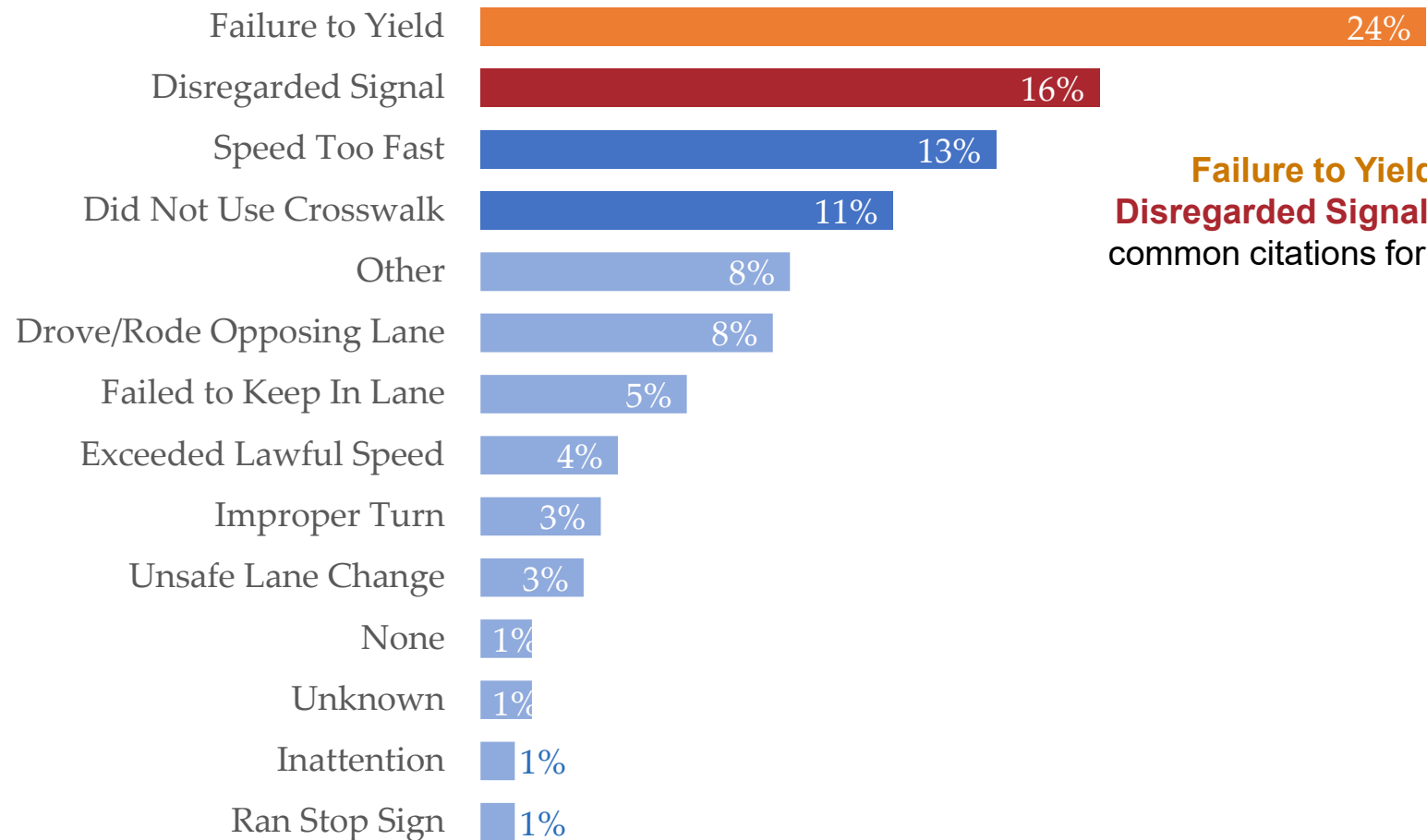
Statistics & Trends

Fatal Crashes

- Unit 1 Violations

Over a quarter of all fatal crashes from 2014 – 2021 in Mesa involved a cited violation of **failing to yield**.

Unit 1 Violations - 2014 to 2021 Fatal Crashes in Mesa



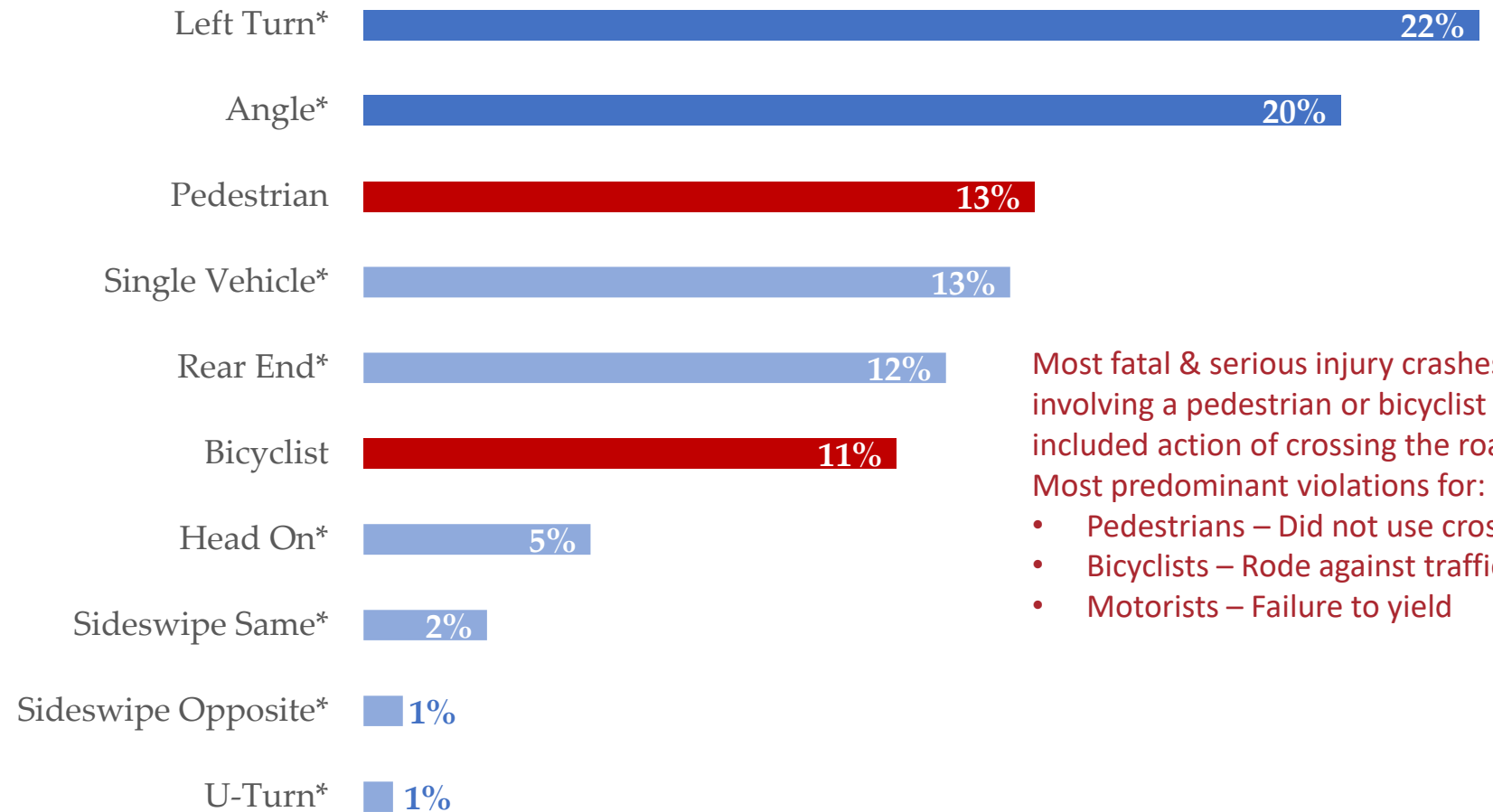
Failure to Yield (FTY) & Disregarded Signal violations are common citations for all user types.

Statistics & Trends

Fatal & SI Crashes

- Manners

Crash Manners 2017 to 2021 Fatal & SI Crashes in Mesa



Most fatal & serious injury crashes involving a pedestrian or bicyclist included action of crossing the road. Most predominant violations for:

- Pedestrians – Did not use crosswalk
- Bicyclists – Rode against traffic
- Motorists – Failure to yield

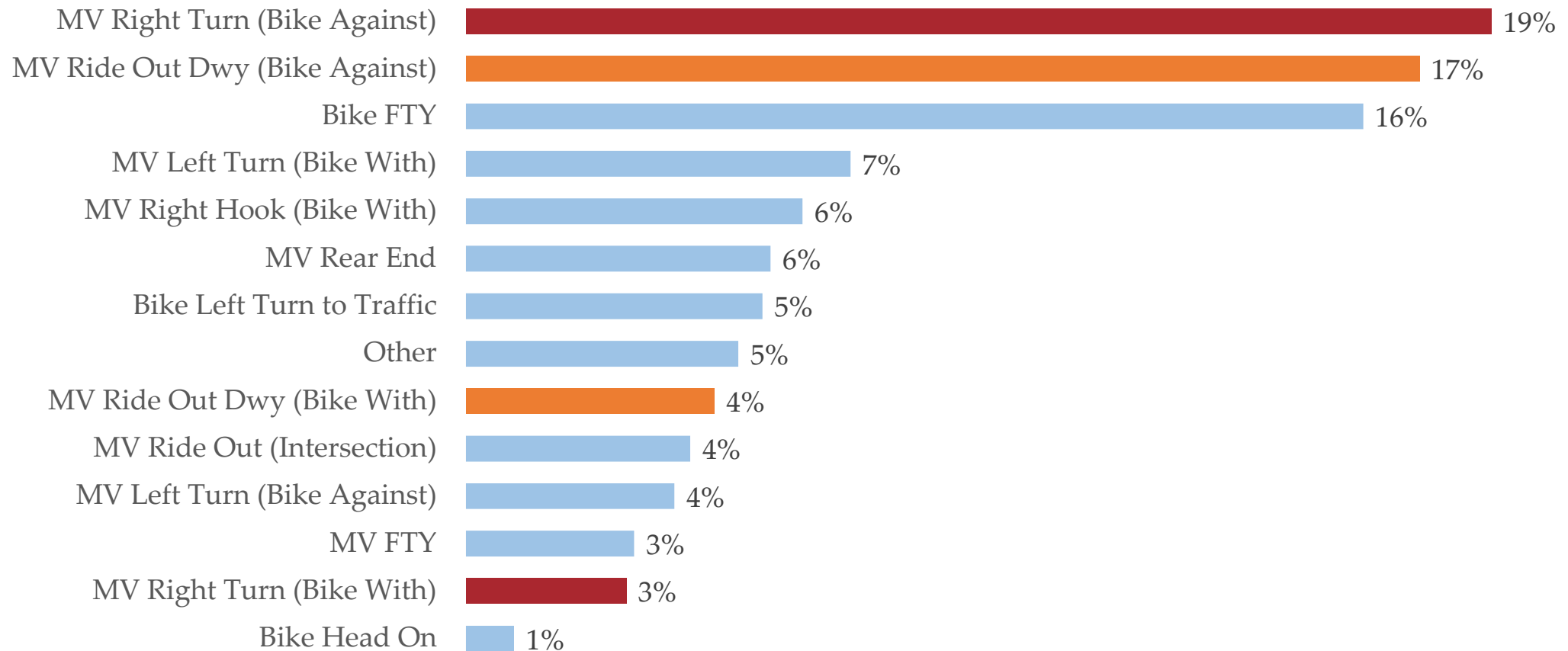
*Motor vehicle crashes not involving bike or pedestrian

Statistics & Trends

Bicyclist

- Actions
- Manners

Bike Crash Behaviors 2017-2021 All Crashes

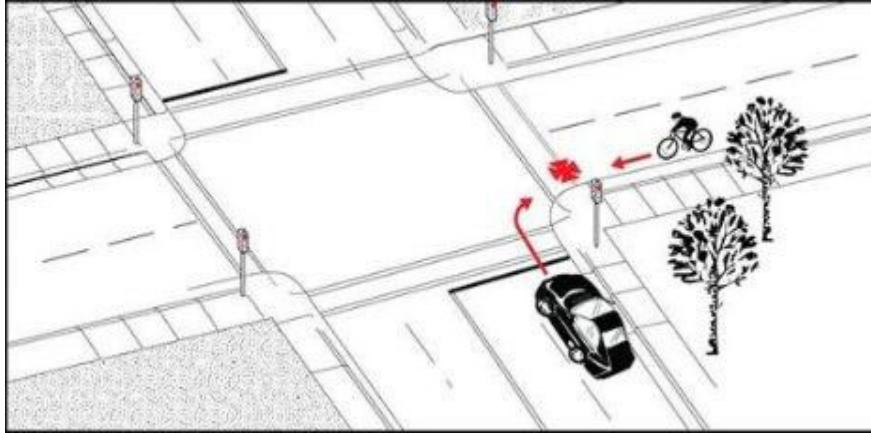


Statistics & Trends

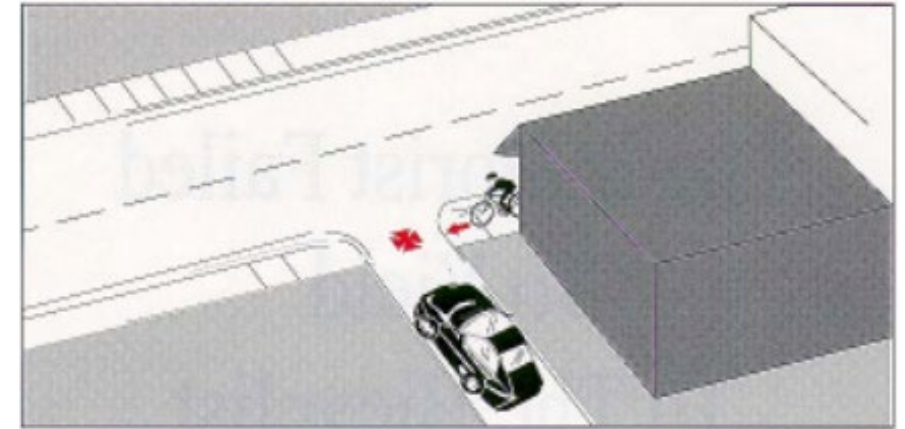
Bicyclist

- Actions
- Manners

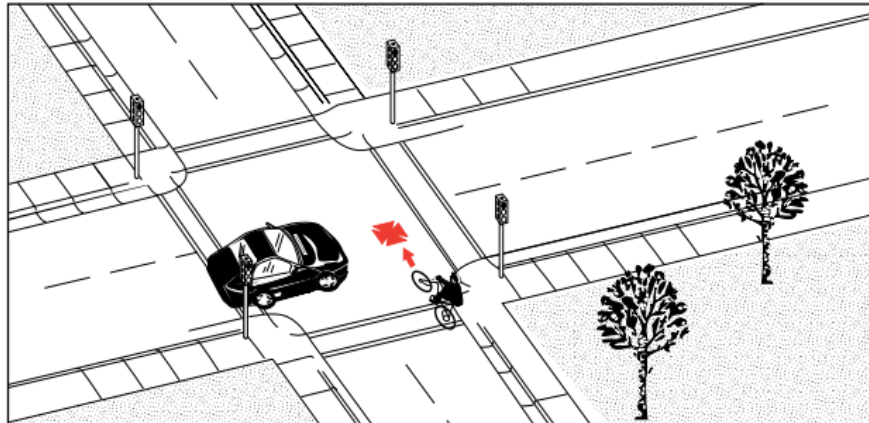
Motorist Right Turn – bicycle against traffic: 128 (**19%**)



Motorist Drive Out (Angle) – driveway or alley; bicycle against traffic: 119 (**17%**)



Bike Failed to Yield (Angle) – signal or stop sign: 112 (**16%**)

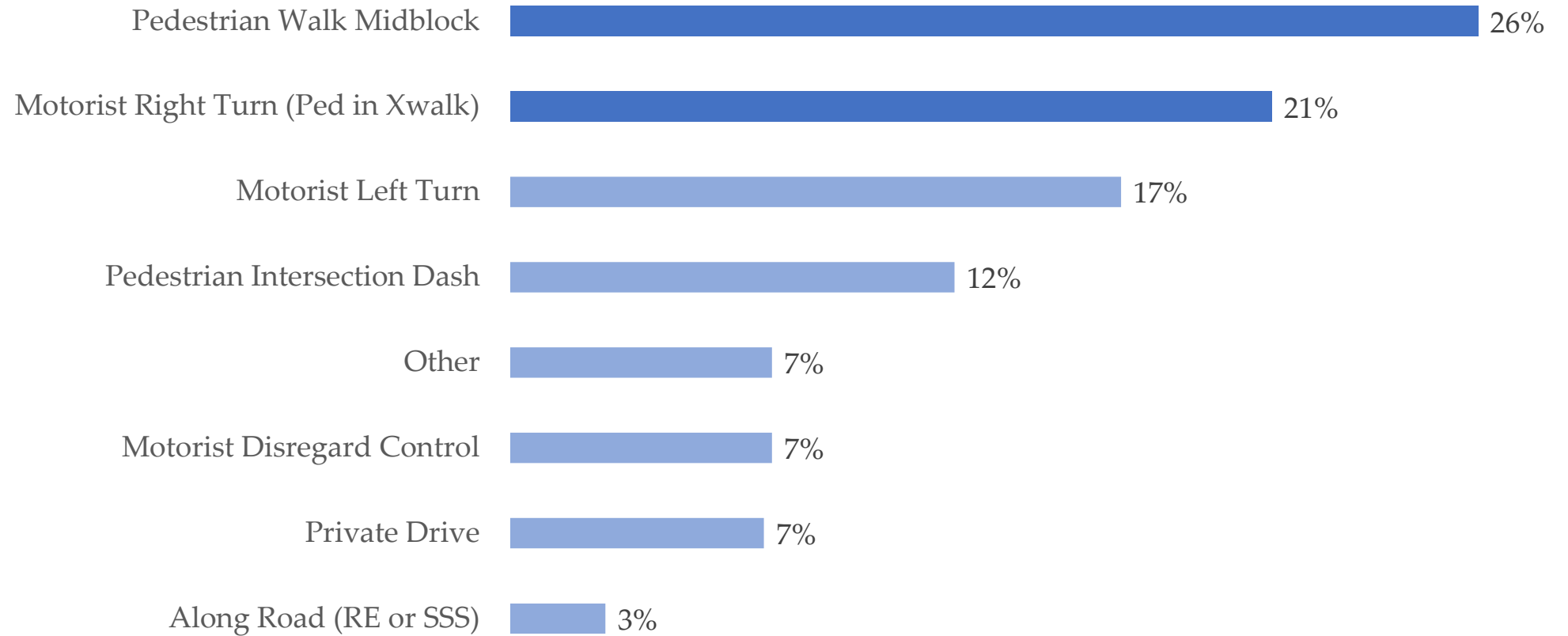


Statistics & Trends

Pedestrian

- Actions
- Manners

Pedestrian Crash Behaviors 2017-2021 All Crashes



Statistics & Trends

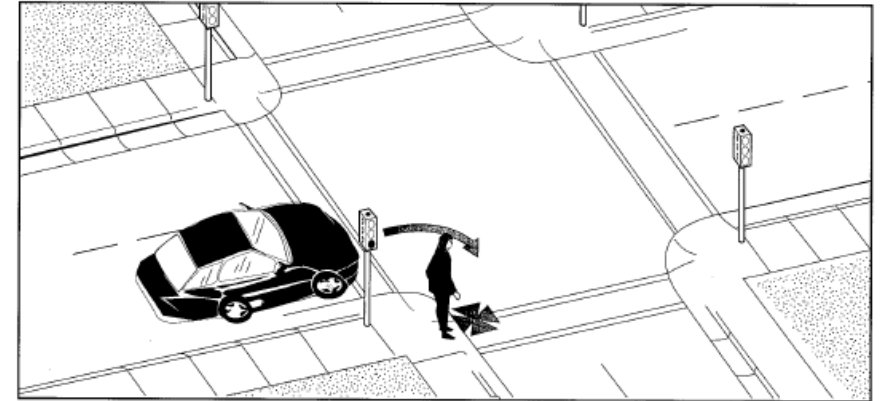
Pedestrian

- Actions
- Manners

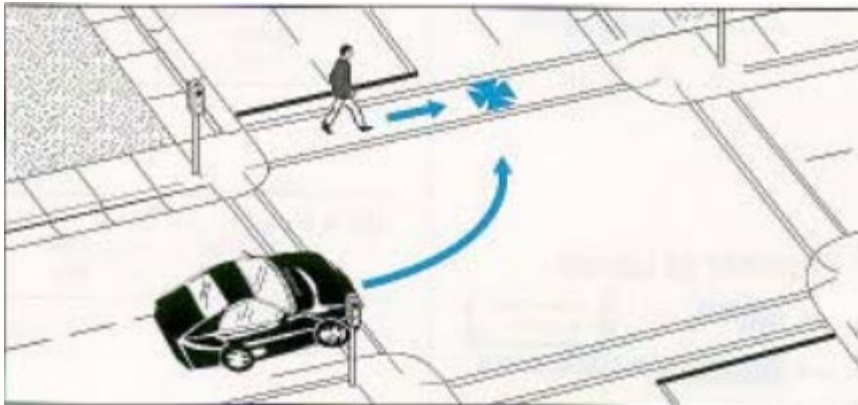
Pedestrian Walk Out Midblock (Angle)
– outside of crosswalk 122 (**26%**)



Motorist Right Turn (Angle) – pedestrian in crosswalk (either direction): 96 (**21%**)



Motorist Left Turn (Left Turn) – parallel pedestrian travel (either direction): 77 (**17%**)



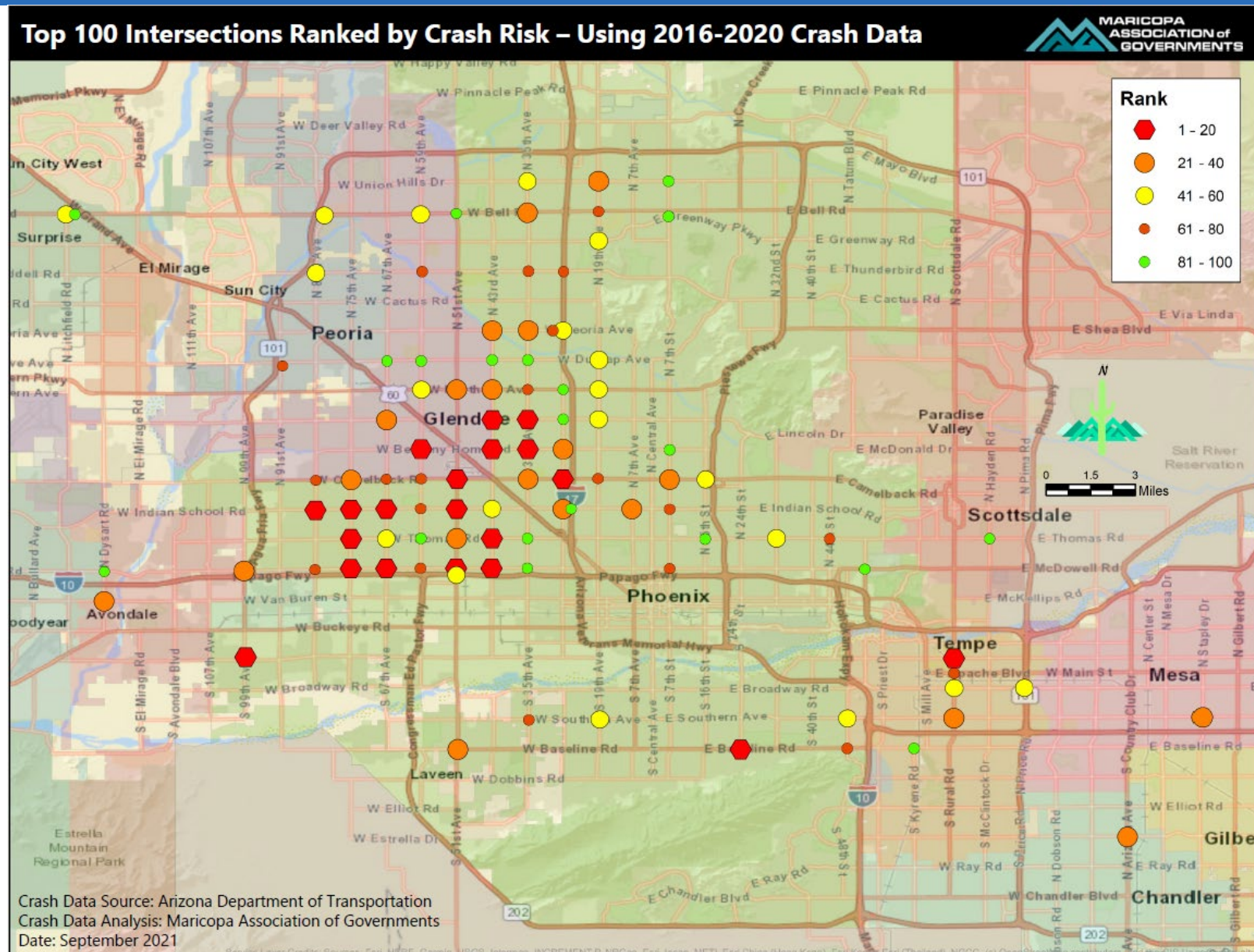
Pedestrian Dash Out (Angle) – jaywalking or against the light: 56 (**12%**)



Using Trends to Identify Needs

Regional

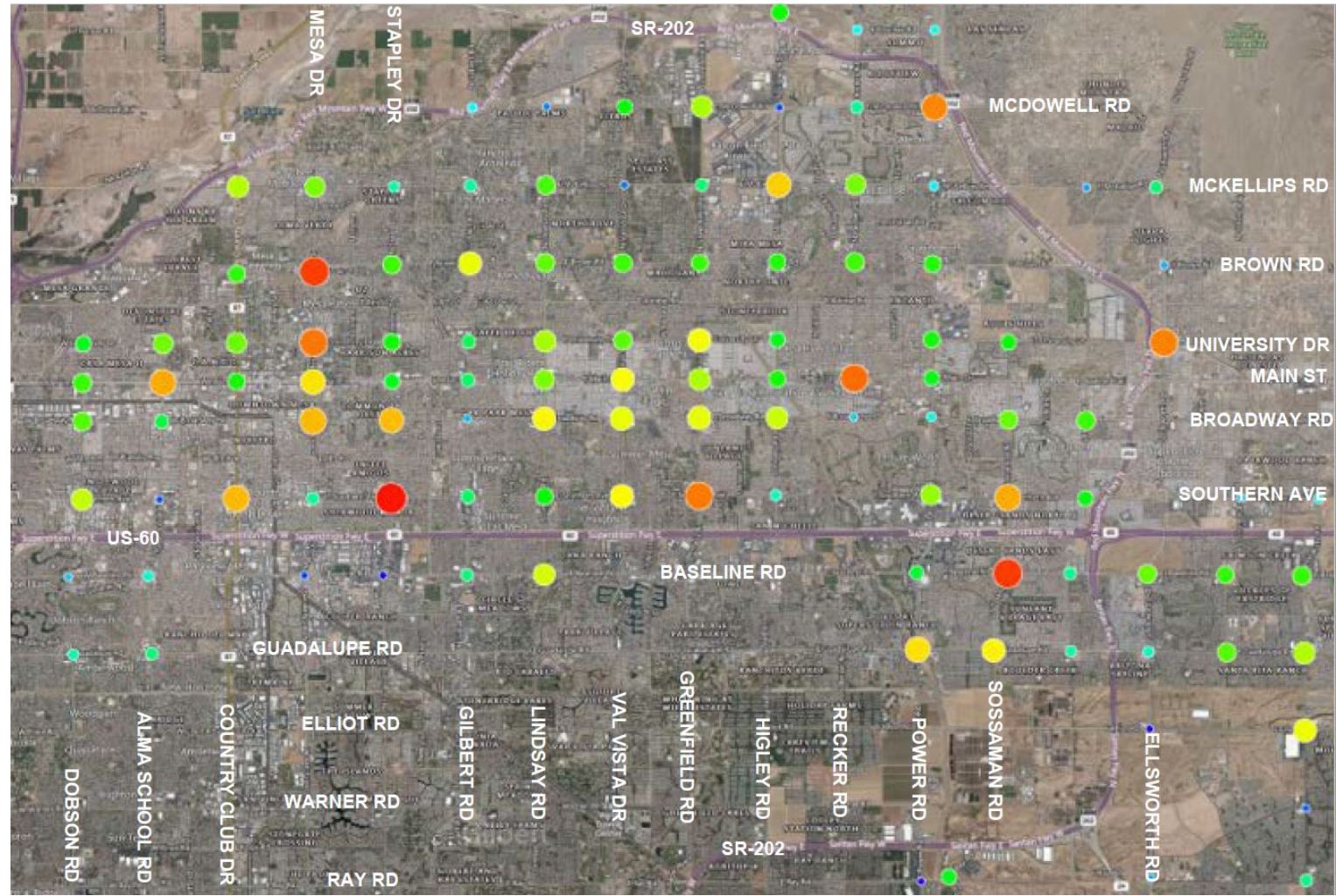
- MAG Top 100 Intersections Ranked by Crash Risk



Using Trends to Identify Needs

Mesa

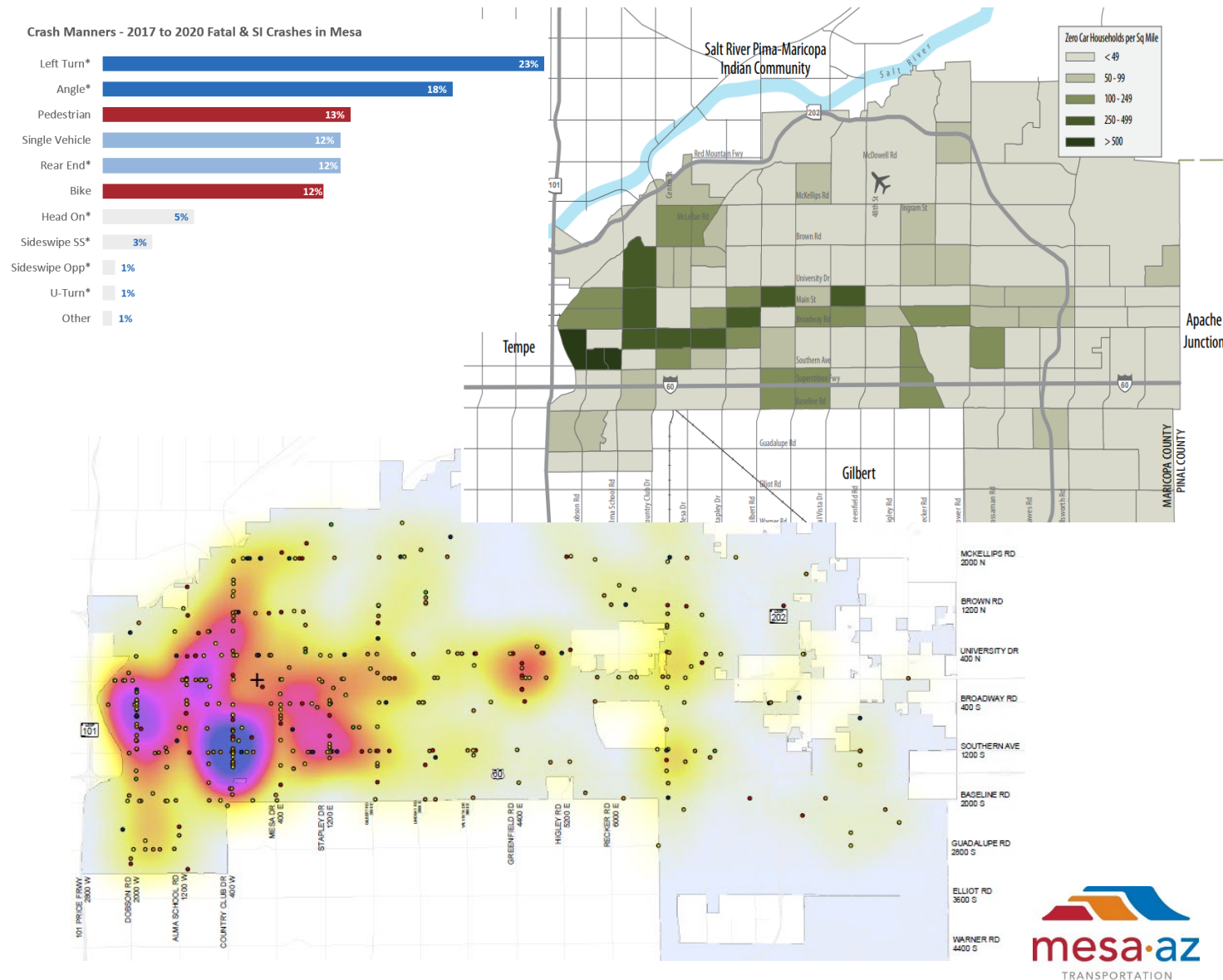
- Mesa Maintains a **networking screening database** focused on arterial-to-arterial intersections
- Identifies intersections with **highest potential for safety improvements** on a normalized level
- Provides a basis for **prioritization**



Using Trends to Identify Needs

Specific Trends

- Working to create more useful platforms that can assist in identifying trends and where to focus specific improvements, whether at **intersections, roadway segments, or systemically**
- The intersection of multiple data sets



Coordination Meetings - Mesa

Stakeholder meetings between **Mesa PD & Transportation.**

Meeting Priorities:

- Data driven methods for reducing serious injury and fatal crashes
- Safety campaigns for vulnerable road users
- Targeted enforcement using historical trends
- Increase in communication
- Timely action

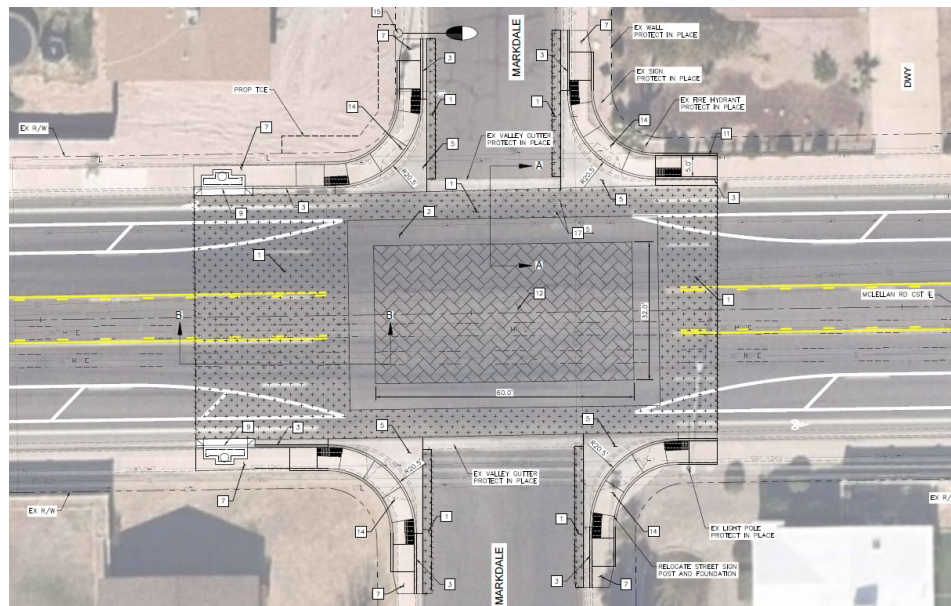
2023 Improvements/Investments:

- Data informed decision-making for infrastructure improvements
- Locations with highest potential for safety improvements
- Improved range of safety devices and techniques

Using Trends to Identify Needs

Outcomes

Examples of safety projects underway or completed



Questions & Discussion

