

City of Mesa Crashes

An Overview of Mesa's Approach to Crash Analysis



March 20, 2018
Transportation Advisory
Board Meeting

Mission Statement

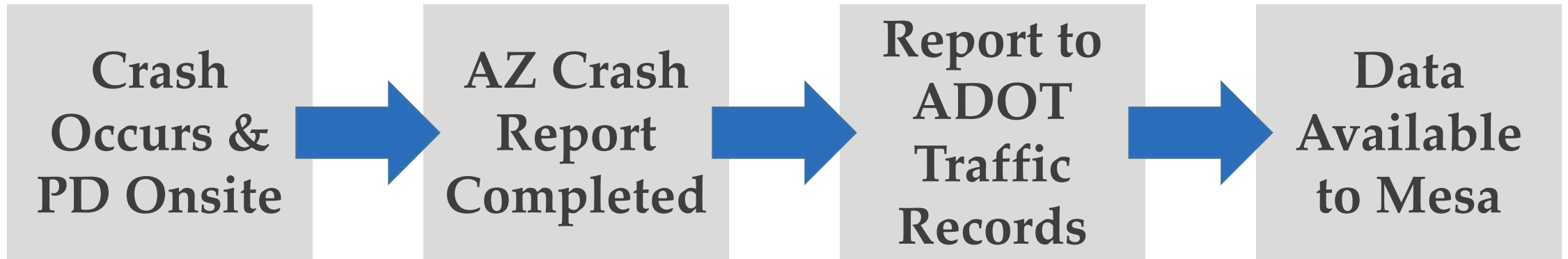
The mission of the Transportation Department is to serve the public by planning, designing, operating and maintaining a high quality, multi-modal transportation system for the City of Mesa so that residents and visitors can move **safely, effectively, and efficiently** through the transportation network.

Agenda

- Background on Crash Data
- What We Do
- Statistics & Trends
- Examples of Specific Crash Reviews
- Education, Enforcement & Engineering
- SPF Tool

Mesa's Crash Data

Background on Crash Data

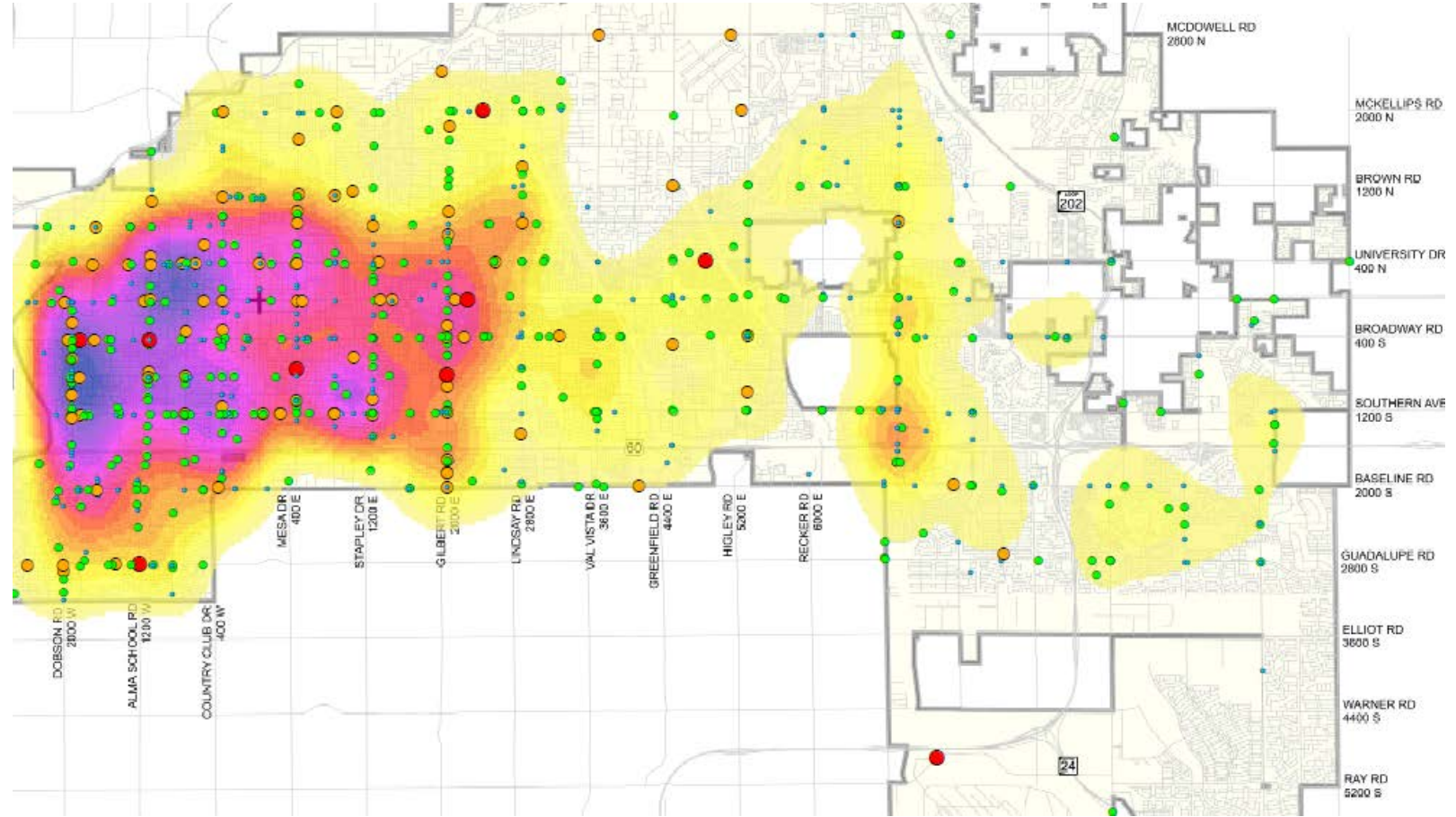


Data Analysis

What We Do

Annual Crash Reports

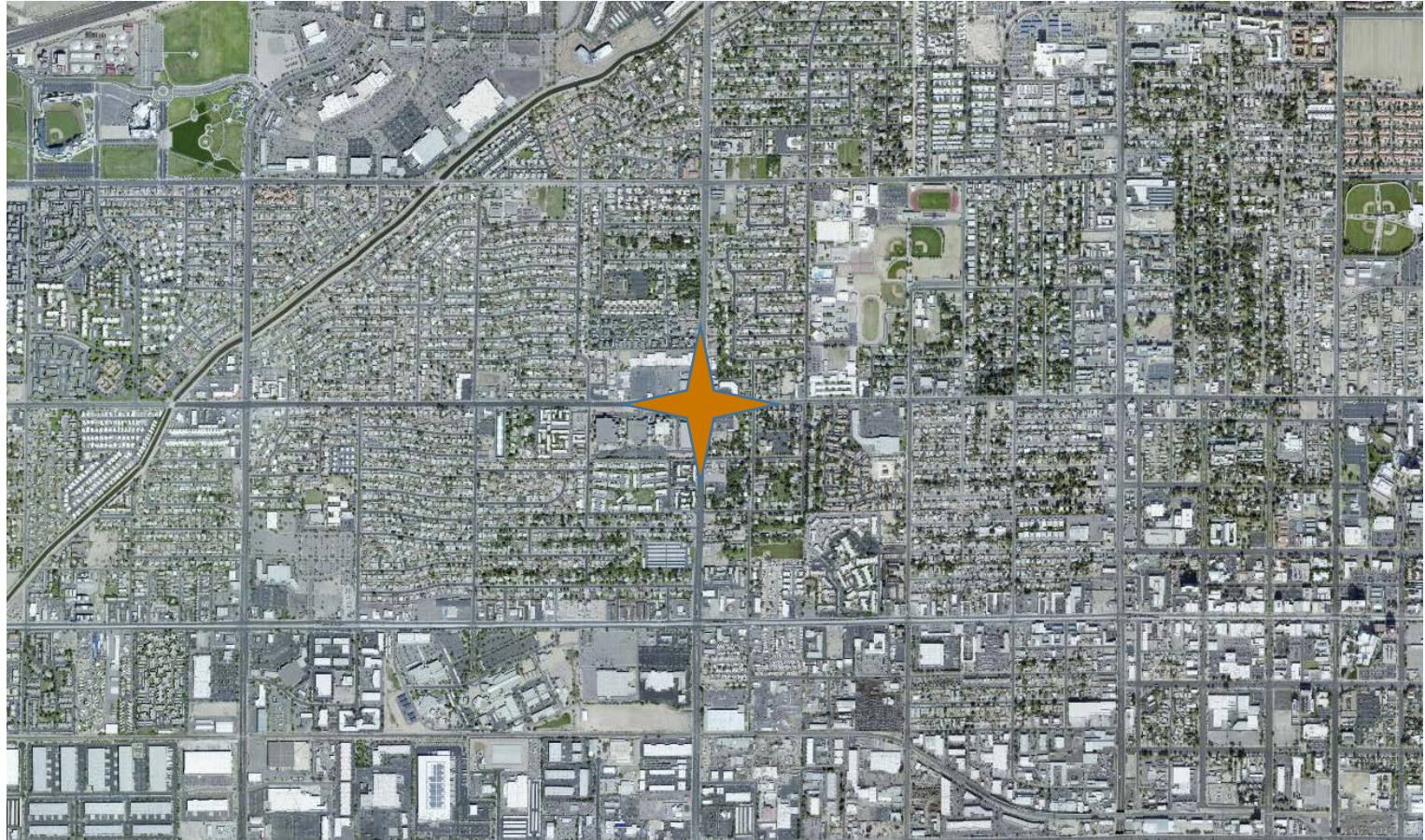
- Fatal
- Serious Injury
- Bike
- Pedestrian



What We Do

In-Depth Crash Reviews

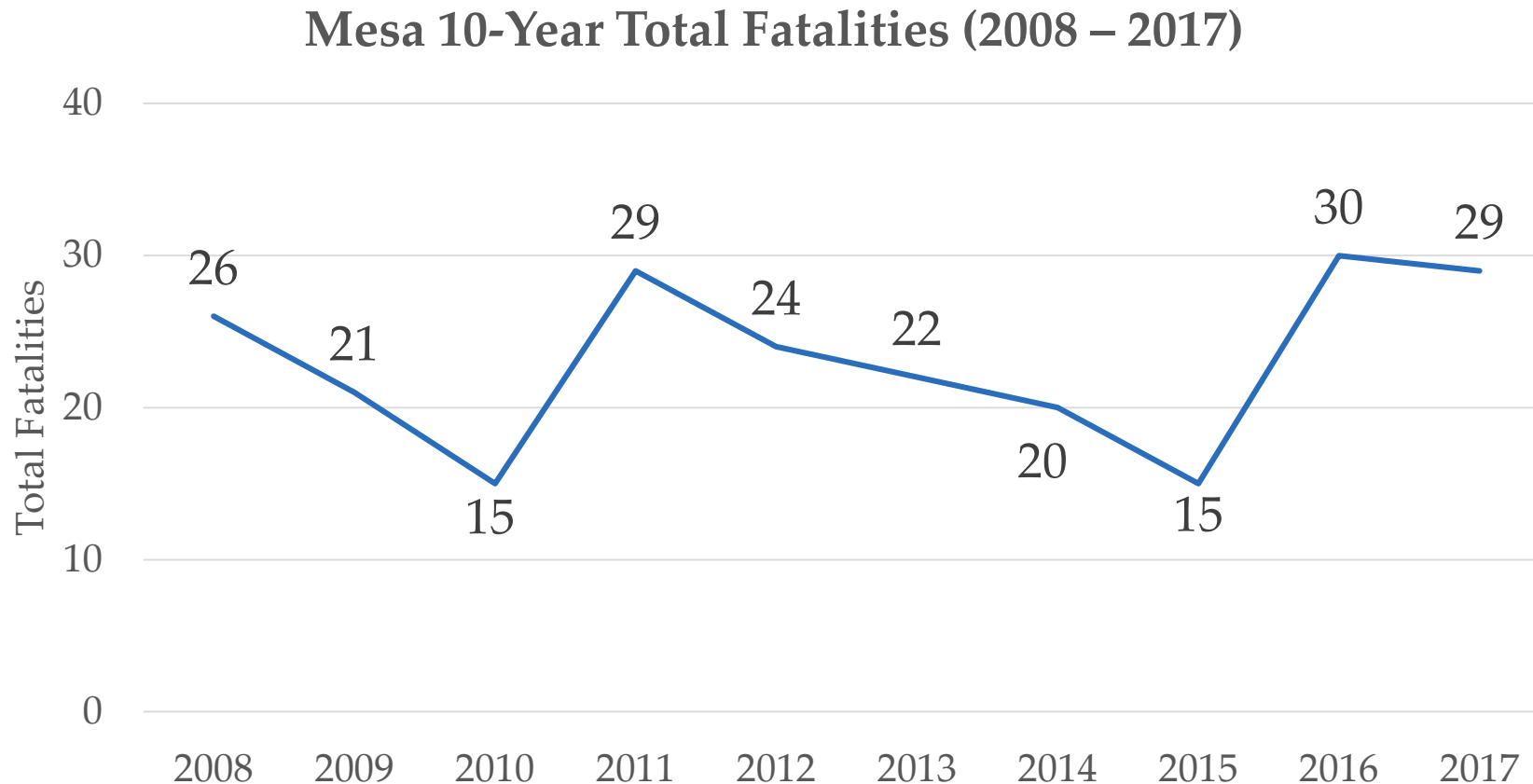
- Study Requests
- Safety Reviews
- Crash Rankings
- Part of Design Process



Statistics & Trends

Fatal Crashes

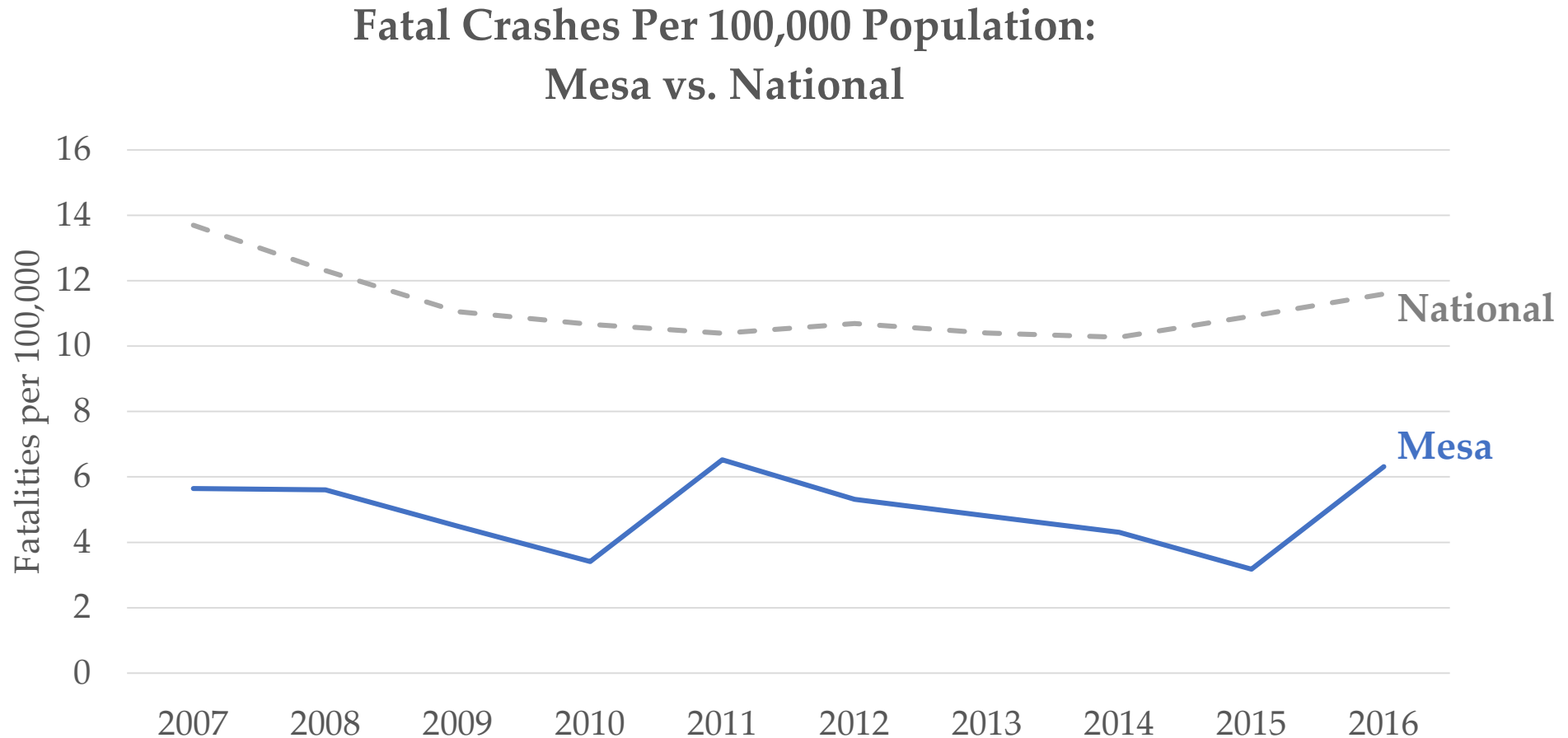
- Mesa 10-Year



Statistics & Trends

Fatal Crashes

- Mesa vs. National

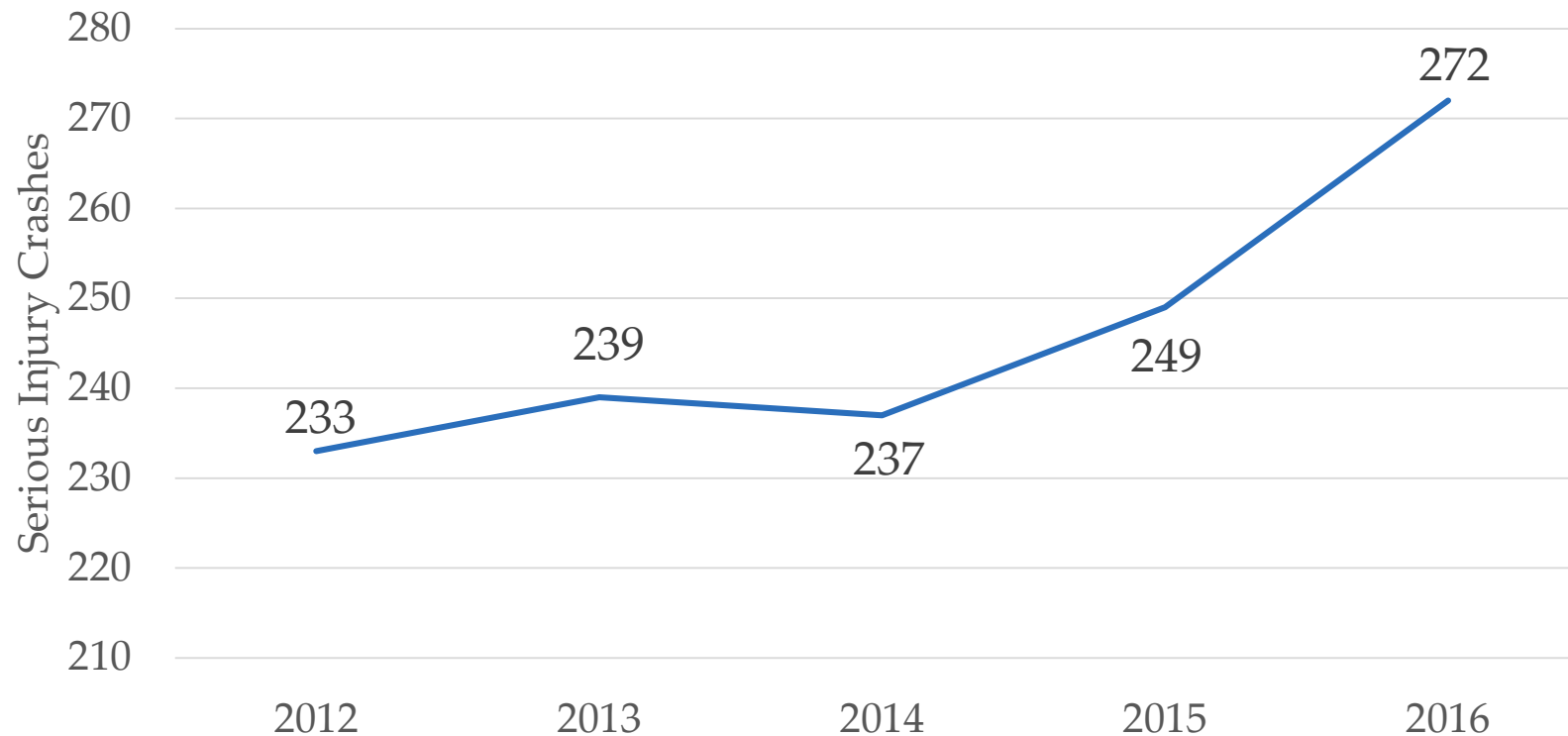


Statistics & Trends

Serious Injury Crashes

- Mesa 5-Year

Mesa 5-Year Motor Vehicle
Serious Injury Crashes (2012 – 2016)

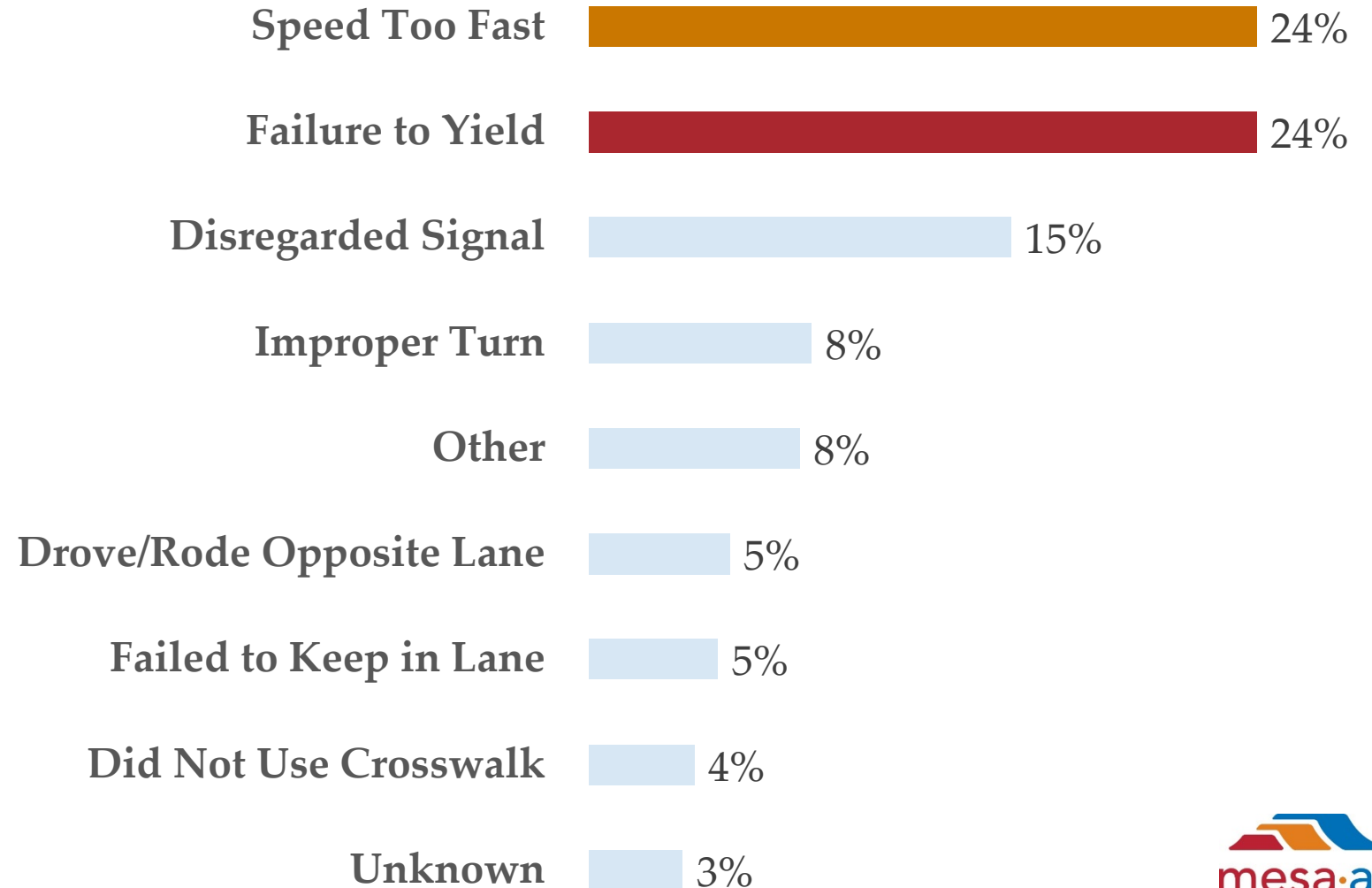


Statistics & Trends

Serious Injury Crashes

- In 2016, nearly half of all serious injury crashes were recorded with cited violations of **driving too fast for road conditions** or **failing to yield to oncoming or conflicting traffic**

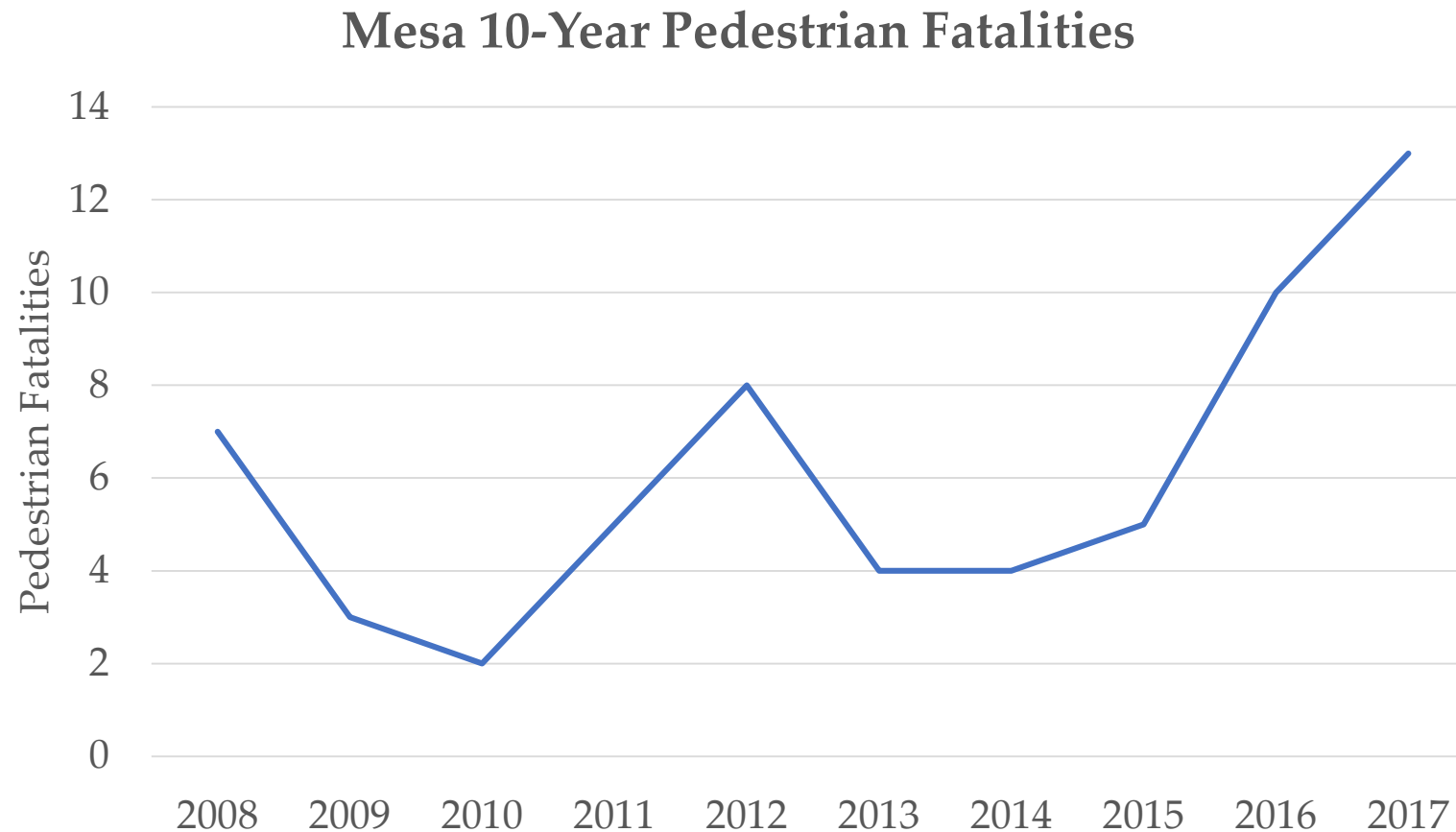
Mesa 2016 Serious Injury Crashes – Cited Violations



Statistics & Trends

Mesa Pedestrian-Related

- 10-Year Fatal

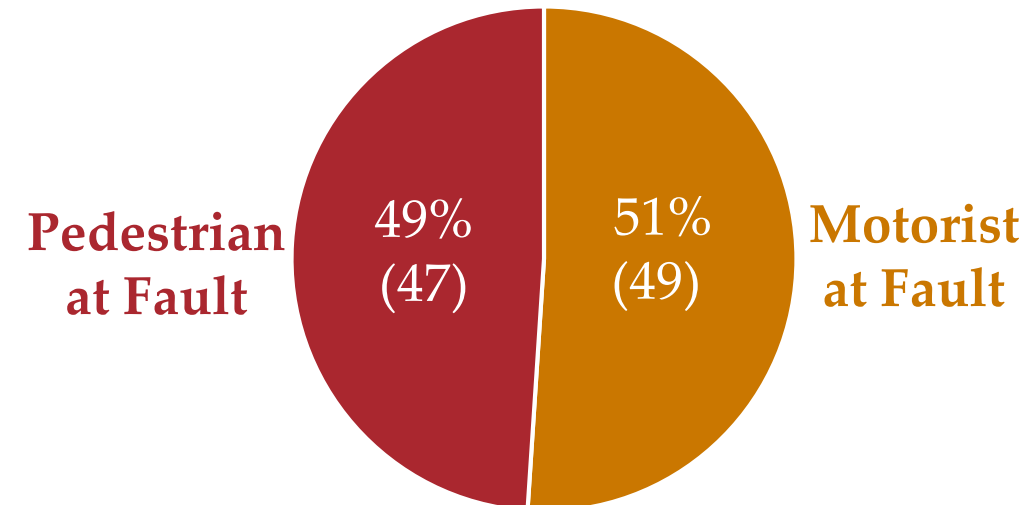


Statistics & Trends

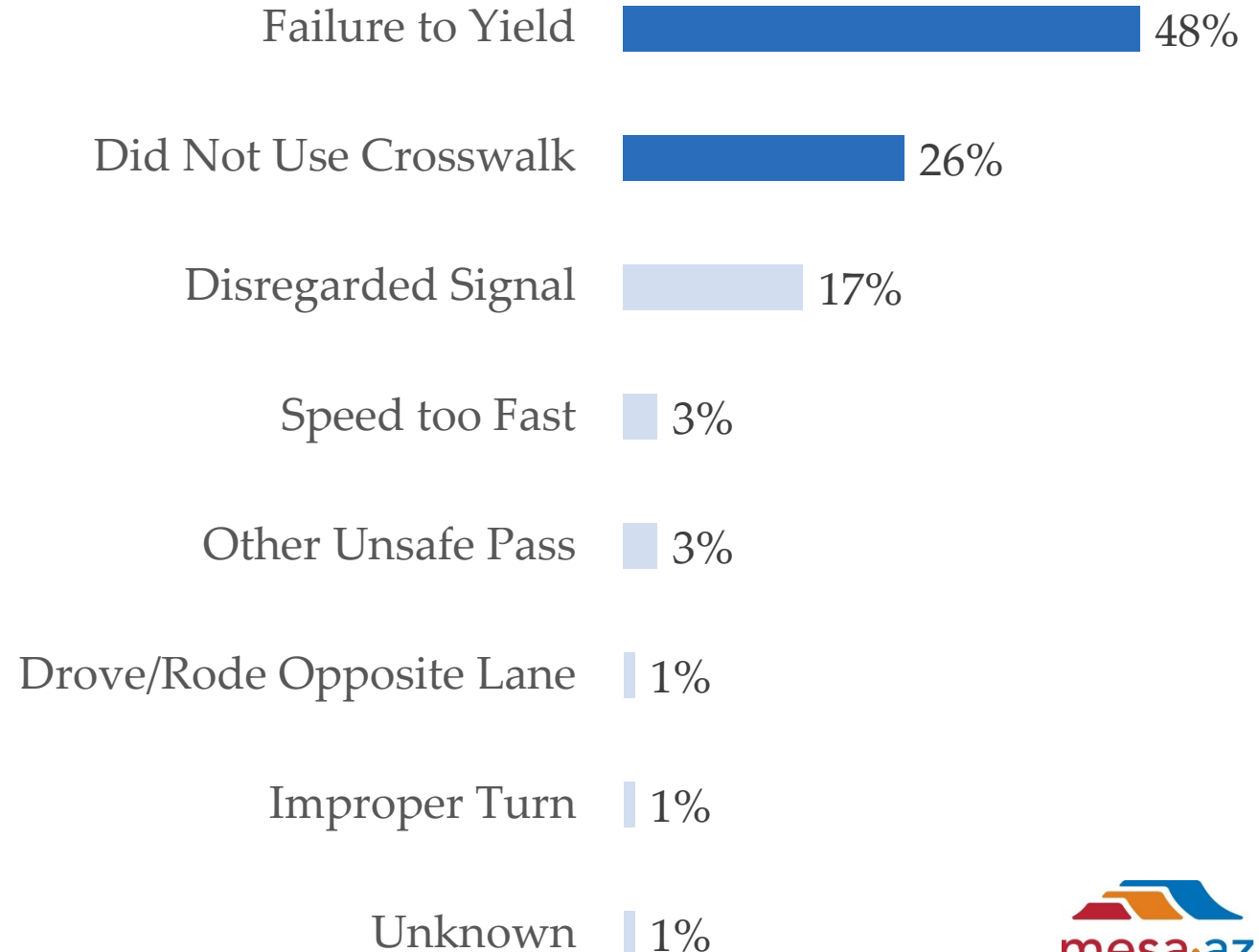
Mesa Pedestrian-Related

- 96 Pedestrian-Related Crashes Recorded in Mesa for 2016

Mesa 2016 Pedestrian Crashes:
'At Fault' Designation



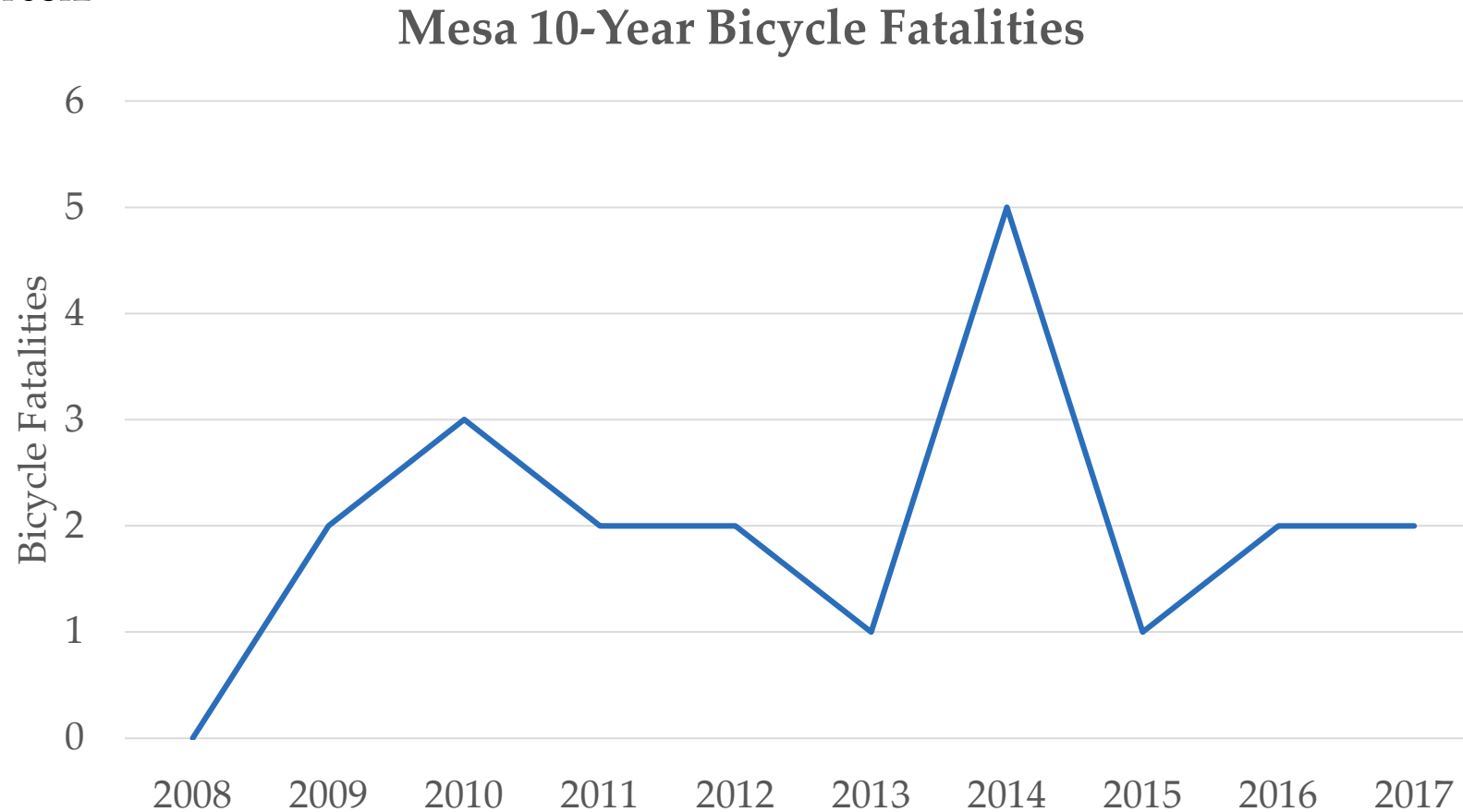
Mesa 2016 Pedestrian Crashes - Cited Violations



Statistics & Trends

Mesa Bike-Related

- 10-Year Fatal

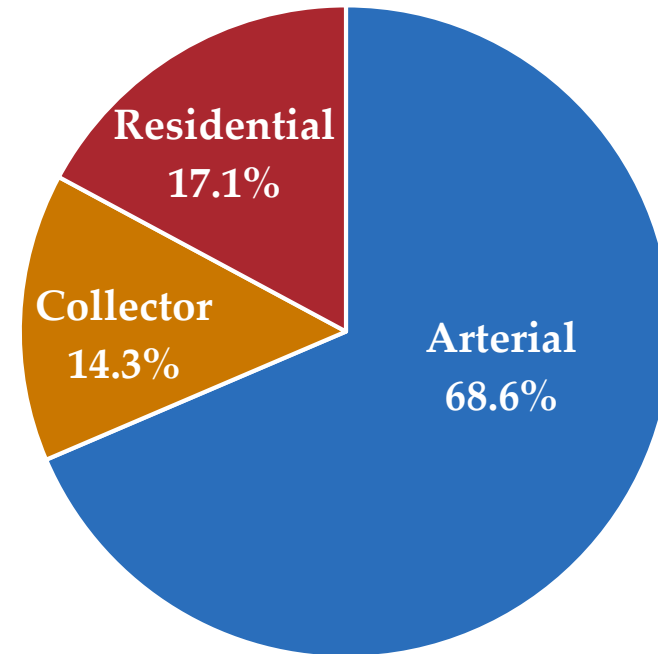


Statistics & Trends

Mesa Bike-Related

- 175 Bicyclist-Related Crashes Recorded in Mesa for 2016
 - 5-Year Average (2012 – 2016): 183 Crashes/year

Mesa 2016 Bicycle Crashes:
On Street Classification



Statistics & Trends

Intersection Ranking Lists

- Annual ranking of intersections based purely on number of crashes and organized by crash type
- Allows for a quick way to identify reoccurring trends, new trends, and oddities that can institute the need for a more in-depth crash analysis and help prioritize safety improvement needs

Number of Crashes 1/1/2016 to 12/31/2016			
ALL - Intersection Related Crashes			
Row #	Intersection Rank	Intersection Location	Intersection Crash Count
1	1	Southern Ave & Stapley Dr	42
2	2	Southern Ave & Country Club Dr	36
3	3	State Route 24 & Ellsworth Rd	35
4	3	Juanita Ave & Country Club Dr	35
5	5	Broadway Rd & Dobson Rd	31
6	6	Broadway Rd & Mesa Dr	30
7	7	Southern Ave & Dobson Rd	29
8	8	Alma School Rd & Rio Salado Pkwy	28
9	9	Southern Ave & Power Rd	26
10	10	University Dr & Country Club Dr	23

Number of Crashes 1/1/2016 to 12/31/2016			
LEFT TURN - Intersection Related Crashes			
Row #	Intersection Rank	Intersection Location	Intersection Crash Count
1	1	Alma School Rd & Rio Salado Pkwy	14
2	2	Southern Ave & Stapley Dr	12
3	3	Lindsay Rd & University Dr	10
4	4	Alma School Rd & Bass Pro Dr	9
5	5	Hampton Ave & Power Rd	8
6	5	Val Vista Dr & Broadway Rd	8
7	5	Power Rd & McDowell Rd	8
8	8	Juanita Ave & Country Club Dr	7
9	8	Broadway Rd & Stapley Dr	7
10	8	Mesa Dr & McKellips Rd	7

Number of Crashes 1/1/2015 to 12/31/2015			
ALL - Intersection Related Crashes			
Row #	Intersection Rank	Intersection Location	Intersection Crash Count
1	1	Southern Ave & Stapley Dr	43
2	2	Country Club Dr & Southern Ave	32
3	3	Broadway Rd & Stapley Dr	27
4	4	Ellsworth Rd & State Route 24	26
5	5	Mesa Dr & University Dr	24
6	6	Brown Rd & Country Club Dr	23
7	6	Dobson Rd & Southern Ave	23
8	8	Broadway Rd & Dobson Rd	22
9	8	Broadway Rd & Mesa Dr	22
10	10	Country Club Dr & Juanita Ave	21

Number of Crashes 1/1/2015 to 12/31/2015			
LEFT TURN - Intersection Related Crashes			
Row #	Intersection Rank	Intersection Location	Intersection Crash Count
1	1	Southern Ave & Val Vista Dr	9
2	2	Broadway Rd & Stapley Dr	8
3	2	Southern Ave & Stapley Dr	8
4	4	Baseline Rd & Ellsworth Rd	7
5	4	Gilbert Rd & Hampton Ave	7
6	6	University Dr & Val Vista Dr	6
7	6	Hampton Ave & Power Rd	6
8	6	Greenfield Rd & Southern Ave	6
9	6	Broadway Rd & Lindsay Rd	6
10	6	Baseline Rd & Sossaman Rd	6

Number of Crashes 1/1/2014 to 12/31/2014			
ALL - Intersection Related Crashes			
Row #	Intersection Rank	Intersection Location	Intersection Crash Count
1	1	Southern Ave & Stapley Dr	45
2	2	Dobson Rd & Southern Ave	27
3	3	Broadway Rd & Mesa Dr	26
4	3	Southern Ave & Val Vista Dr	26
5	5	Stapley Dr & University Dr	24
6	6	Country Club Dr & Southern Ave	23
7	7	Ellsworth Rd & State Route 24	22
8	8	Broadway Rd & Stapley Dr	21
9	9	Gilbert Rd & Main St	20
10	10	Broadway Rd & Gilbert Rd	19

Number of Crashes 1/1/2014 to 12/31/2014			
LEFT TURN - Intersection Related Crashes			
Row #	Intersection Rank	Intersection Location	Intersection Crash Count
1	1	Southern Ave & Stapley Dr	9
2	2	Ellsworth Rd & Us Highway 60 Exit 191 J-ramp	8
3	3	8th Ave & Alma School Rd	7
4	3	Baseline Rd & Lindsay Rd	7
5	5	8th St & Dobson Rd	6
6	5	Sossaman Rd & Us Highway 60 Exit 189 J-ramp	6
7	5	Broadway Rd & Mesa Dr	6
8	5	Baseline Rd & Ellsworth Rd	6
9	5	Greenfield Rd & Southern Ave	6
10	5	McDowell Rd & Power Rd	6

Example Crash Review

Request for Left Turn Arrow

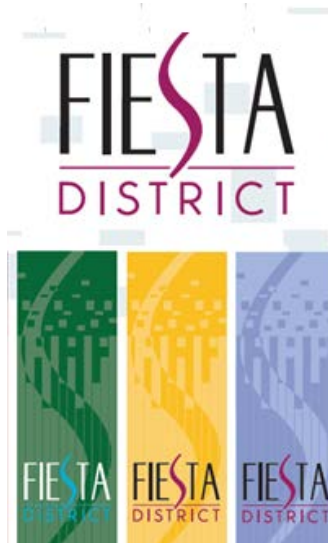
- Analyze crash history to identify any crash trends – crashes that can be deemed correctable by the installation of a left turn arrow



Next Steps - Engineering

Design, Construct & Maintain

- Making safety a major part of the design process for any roadway improvement project



Next Steps - Engineering

Design, Construct & Maintain

- Installing bike lanes wherever possible
 - Signing and Pavement Markings
- Bike & Pedestrian Facilities (On-Street & Off-Street)



Next Steps - Engineering

Design, Construct & Maintain

- Making changes to existing streets and facilities
 - Establishing Prohibitions
 - Establishing School Zones
 - Traffic Signal Phasing & Timing



Next Steps - Education

Educate

- Events
- Publications
- Public Service Announcements
- Variable Messages

SP^{MESA}KE LIFE

Be Seen, Be Safe

Cyclists must:

- Have a light on the front of their bike and a reflector on the back.
- Ride WITH traffic, not against.

Remember:

- Always wear a helmet.
- Wear bright & reflective clothing to make yourself more visible.
- Follow traffic laws & ride in a predictable manner.
- Use hand signals so people know where you are going.



It's the law!



**BICYCLE AND PEDESTRIAN
PROGRAM**

www.mesaaz.gov/bikeped

Next Steps - Enforcement

Mesa PD

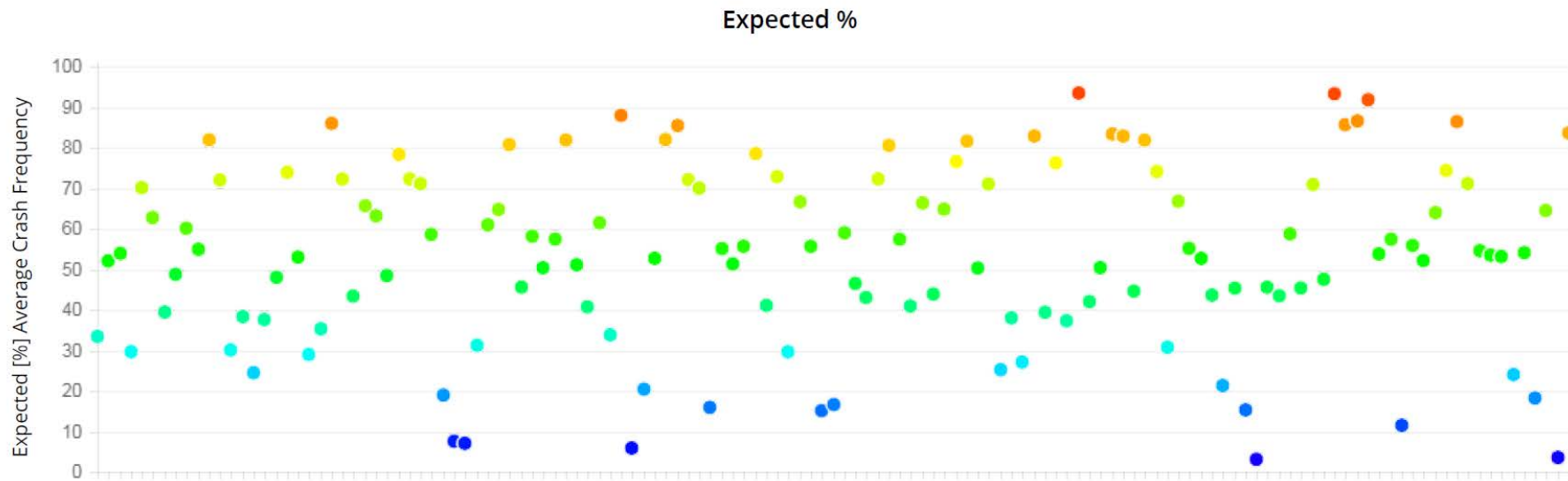
- Public Service Announcements
- Allocating Resources to Specific Location
- Publications



Predictive Crash Analysis

SPF Tool

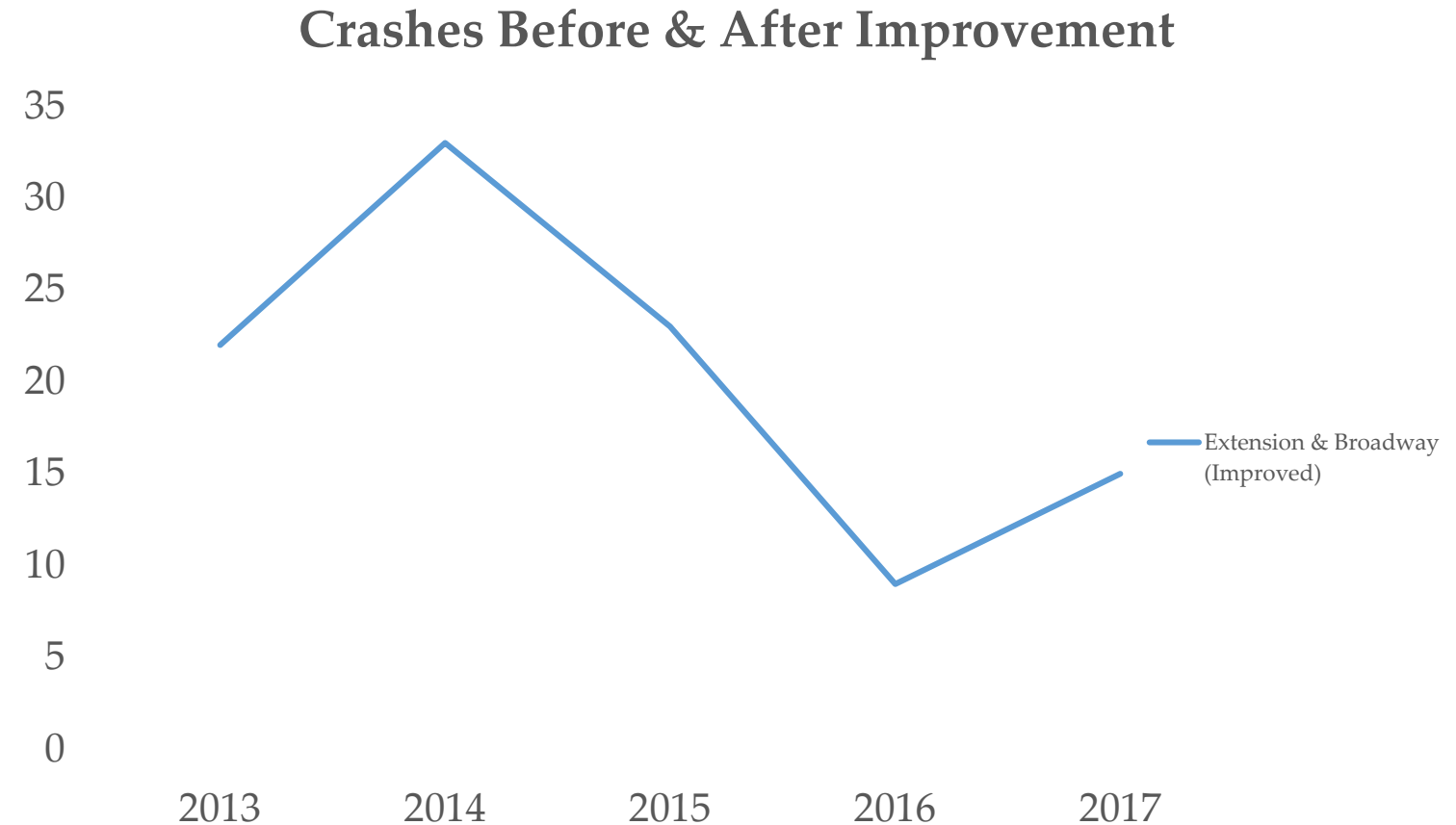
- Proactive approach to crash data analysis
- Holistic & normalized analysis for entire City of Mesa
- Used to supplement traditional methods & as a strong basis to prioritizing safety improvement projects



Predictive Crash Analysis

SPF Tool

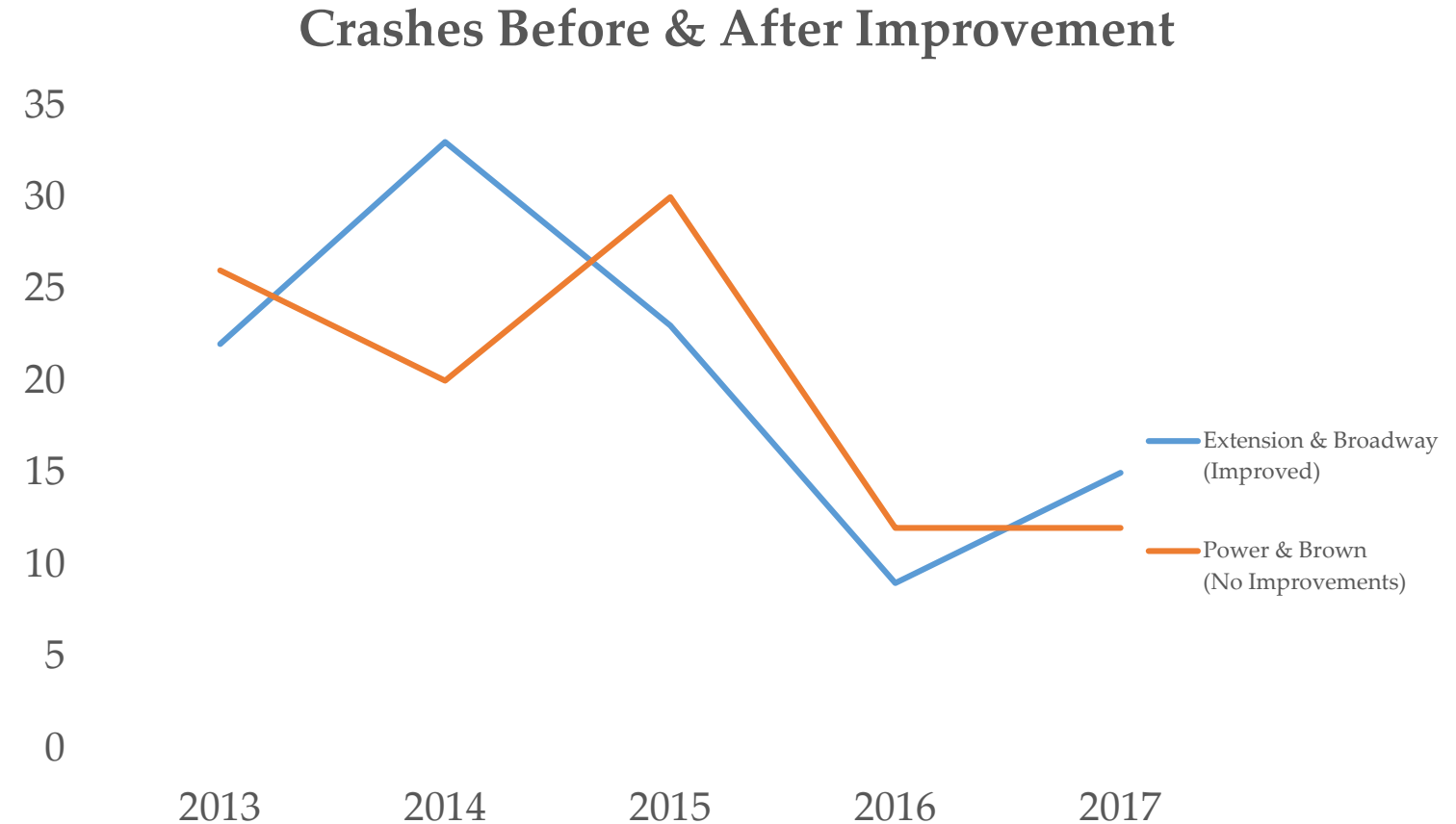
- Improvement made in 2015
- Observed less crashes



Predictive Crash Analysis

SPF Tool

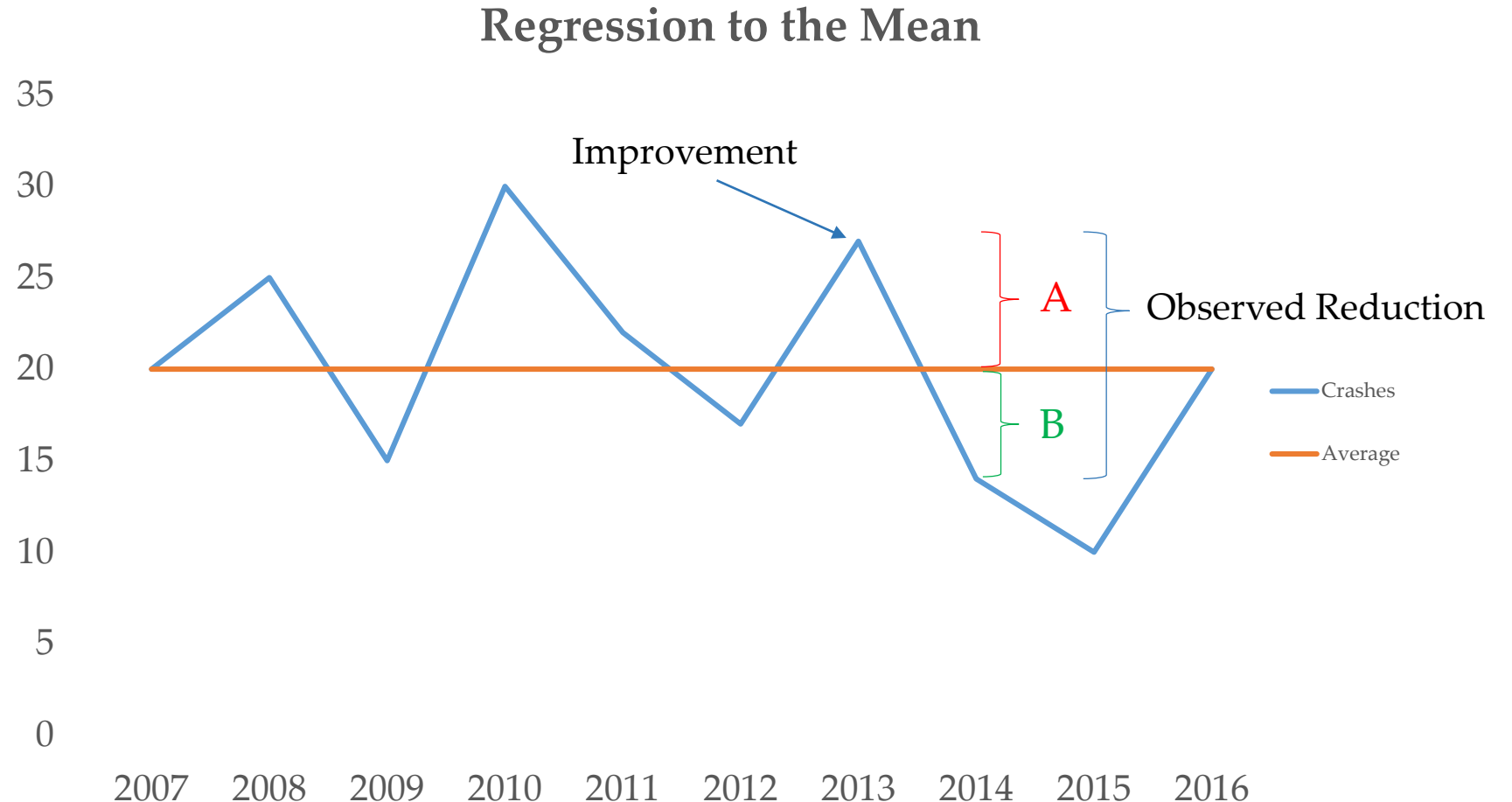
- Improvement made in 2015
- Observed less crashes
- Drop in crashes citywide



Predictive Crash Analysis

SPF Tool

- Regression to the Mean (RTM)
- **A** – RTM reduction (independent of improvement)
- **B** – True crash reduction



Questions & Discussion

