

MAG Strategic Transportation Safety Plan

Visioning Workshop September 24, 2013



MAG Transportation Safety Planning Program

- ▶ In May 2013 the MAG planning area expanded beyond Maricopa County
 - ▶ Now includes City of Maricopa, Town of Florence, Pinal County
- ▶ STSP will serve as the roadmap for improving road safety in the region – with oversight provided by the Safety Committee
- ▶ STSP recommendations will be incorporated in the Next Generation Regional Transportation Plan
 - ▶ Implementation of the STSP will be funded with a combination of federal, state, regional and local funds
- ▶ STSP will be closely aligned with the state's Strategic Highway Safety Plan – MAG represented in all 10 SHSP Task Forces
- ▶ We welcome Stakeholder input on ALL road safety issues in the region

MAG 2005 STSP - Accomplishments

Development of the Regional Transportation Safety Information Management System (RTSIMS):

- ▶ Initiated - December 2006
- ▶ Crash Data Analysis Tool
- ▶ Historical Crash Data Archive
- ▶ On-going development

The MAG Road Safety Assessment (RSA) Program:

- ▶ Workshop 2010
- ▶ MAG Work Program includes RSAs
- ▶ 26 signalized intersections – I segment 2011-2013

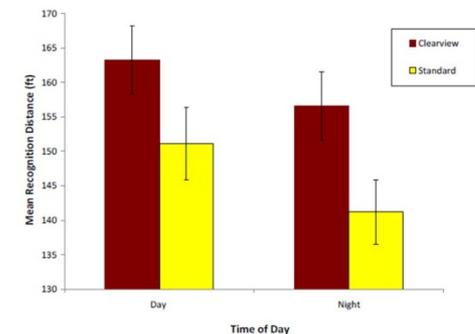


MAG 2005 STSP - Accomplishments

MAG Elderly Mobility Sign Project

- ▶ Launched 2007
- ▶ FHWA Guidelines for Clearview font
- ▶ 2700 Signs in 15 local jurisdictions; Funded with local funds \$300,000
- ▶ MAG Study by ASU: Clearview signs recognized at a significantly greater distance
- ▶ Clearview font adopted by many local agencies

Clearwater Rd



MAG 2005 STSP - Accomplishments

MAG Safe Routes to School Program

- ▶ Hosted SRTS Course - Sept. 2005
- ▶ Goal: introduce concept & provide training and supporting material
- ▶ First MAG Regional Crossing Guard Training Workshop - 2004
- ▶ Guardians of the Future video - 2008
 - ▶ In partnership with Avondale, Glendale, Mesa, Phoenix, Tempe, Peoria
 - ▶ Shown at annual crossing guard workshops
- ▶ Annual crossing guard training workshops
 - ▶ 2013 workshops - 465 crossing guards

Effectiveness of Non-Engineering Road Safety Strategies, 2012

SafeRoutes



Work Plan Tasks

1. Crash Analysis – Current State & Resources
2. Establish Regional Vision and Goals
3. Develop Action Areas, Strategies, and Performance Measures
4. Network Screening Methodologies for Prioritization of Road Safety Needs
5. Incorporating Safety in the Regional Transportation Plan
6. Develop a Strategy to Incorporate Safety Enhancements in Road Infrastructure Projects
7. Improving Safety via Traffic Operations and Technology Solutions
8. Monitoring and Reporting on System Performance and Program Effectiveness
9. Implementation Plan 2015 – 2025
10. Draft Final Report, Executive Summary and Presentations

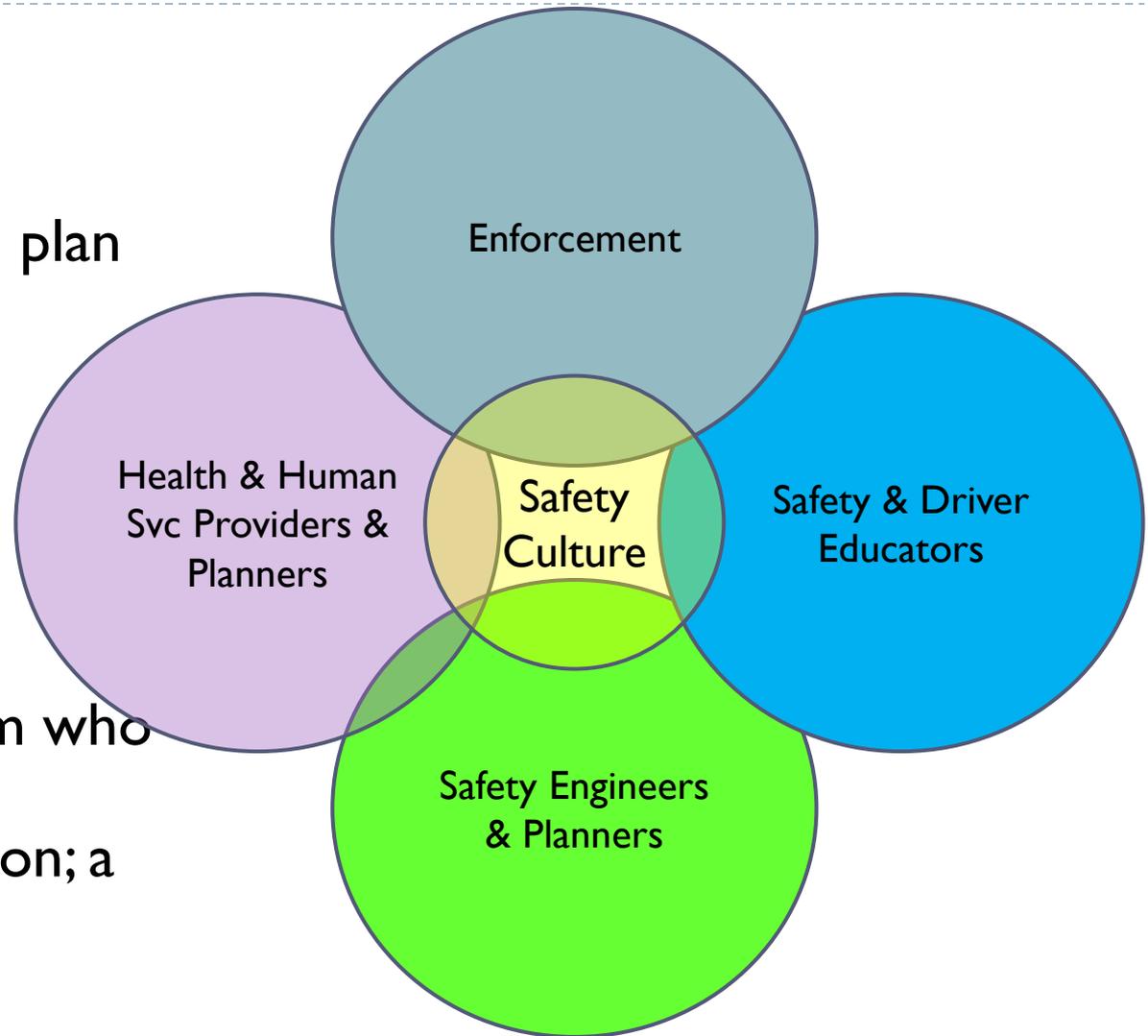
Schedule

Task	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	2013						2014												2015	
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
MAG Transportation Safety Committee Meeting	23		24		19		28		25		27		22		23		25		27	
1 Road System Performance & Available Resources from a Road Safety Perspective	■																			
1(b) Review Current State of Road Safety in the MAG Region	■																			
1(c) Current Programs & Funding Resources for Road Safety Planning & Implementation		■																		
2 Establish Regional Vision and Goals for Transportation Safety		■			◆	■														
3 Emphasis Areas, Potential Strategies, & Performance Measures			■																	
4 Network Screening Methodologies for Prioritization of Road Safety Needs					■			◆	■											
5 Incorporating Safety in the Regional Transportation Plan							■													
6 Develop a Strategy to Incorporate Safety Enhancements in Road Infrastructure Projects								■												
7 Improving Safety via Traffic Operations & Technology Solutions										■										
8 Monitoring & Reporting on System Performance & Program Effectiveness												■								
9 Implementation Plan 2015 - 2025																■				
10 Final Report, Executive Summary & Presentations																	■			

◆ 4-hour Workshop

Stake·hold·er

- ▶ Understand
 - ▶ Strategize
 - ▶ Develop an action plan
 - ▶ Implement
 - ▶ Measure
 - ▶ Refine
- ▶ Member or system who affects or can be affected by an action; a person entrusted



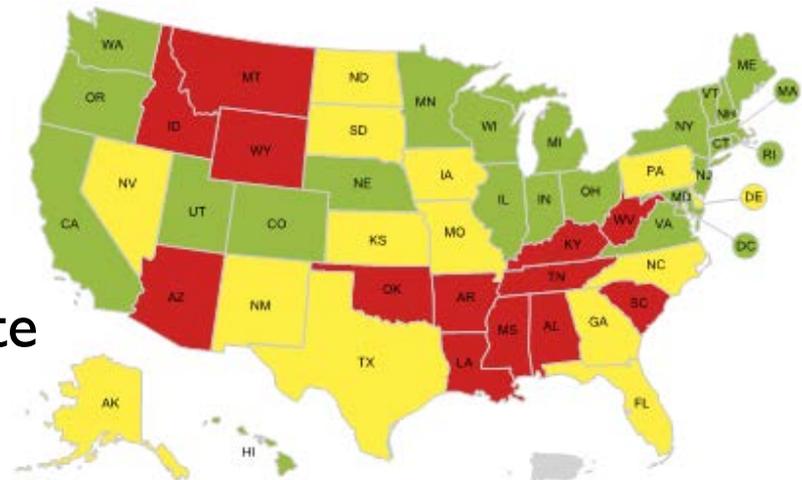
National Transportation Safety Plans

▶ FHWA

- ▶ Toward Zero Deaths – A National Strategy
 - ▶ Cultural change
 - ▶ Foundations of Safety



- ▶ Wealth of Resources
 - ▶ Systemic approach
 - ▶ Proven countermeasures
 - ▶ Safety Capacity Building website
<http://rspcb.safety.fhwa.dot.gov/>



National Transportation Safety Plans

- ▶ **AASHTO**
 - ▶ Strategic Highway Safety Plan
 - ▶ Drivers (younger, older, aggressive, impaired, distracted, seat belts, speed)
 - ▶ Special Users (pedestrians and bicyclists)
 - ▶ Vehicles (motorcycles and heavy trucks)
 - ▶ Highways (ROTR, intersections, crossover, work zones, objects)
 - ▶ EMS (Rural)
 - ▶ Management (data, integrated management)
 - ▶ Tools for Life
 - ▶ NCHRP 500 Implementation Guides
 - ▶ NCHRP 501 Integrated Safety Management Process



State Strategic Highway Safety Plans

▶ Visions:

- ▶ 20 - Toward Zero Deaths
 - ▶ 17 - Zero Fatalities
 - ▶ 7 - All Users Arrive Alive
 - ▶ 6- Reduce Fatalities and Injuries
- 24

▶ Emphasis Areas:

- ▶ Based on analysis and input
- ▶ Roads, Users, User Behavior, Data
- ▶ Go beyond “engineering” and “roadway improvements
- ▶ Many use reduce, improve, curb, minimize, increase, prevent



**Zero
Fatalities**

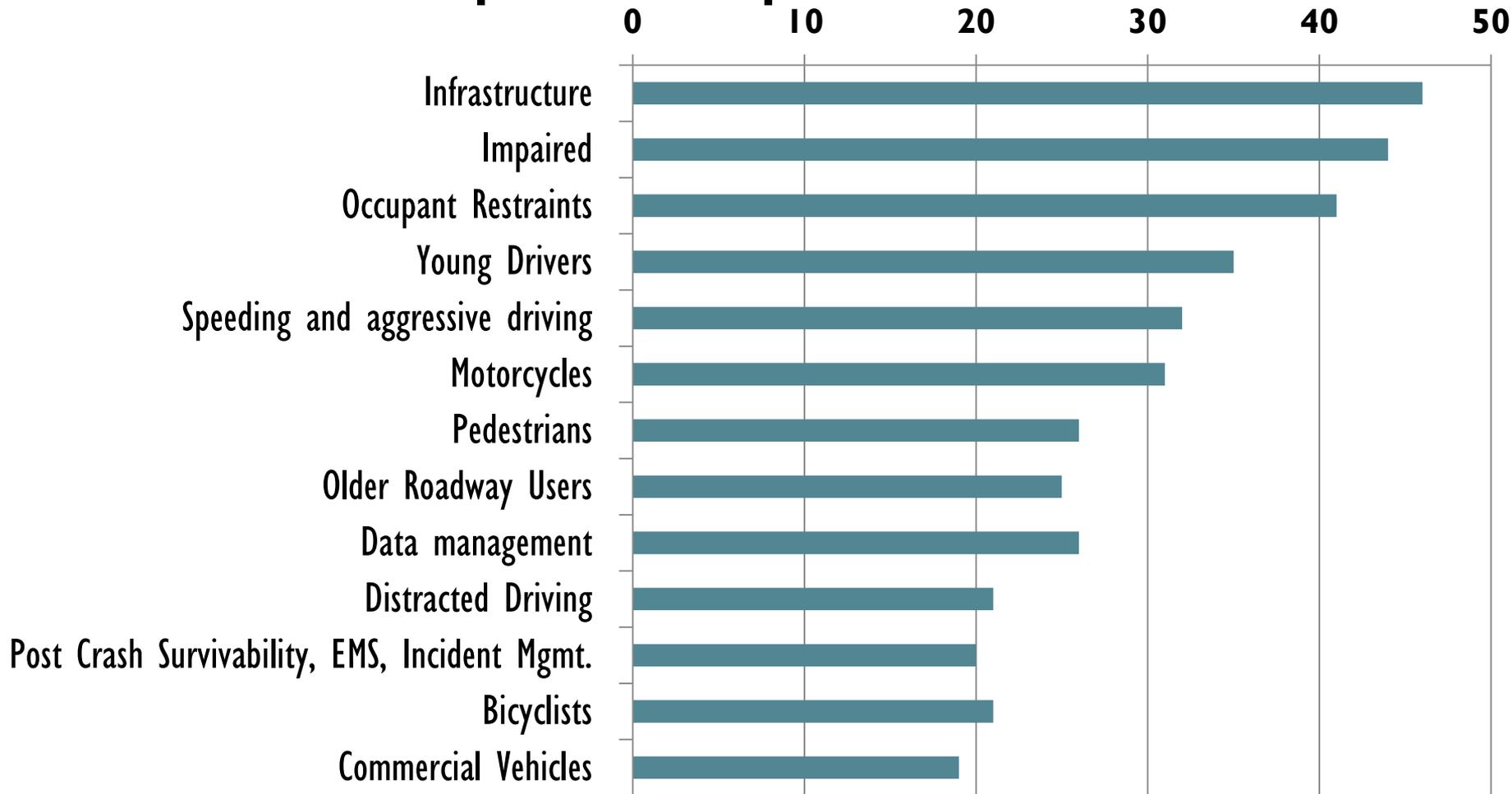
A Goal We Can All Live With



ARRIVE ALIVE

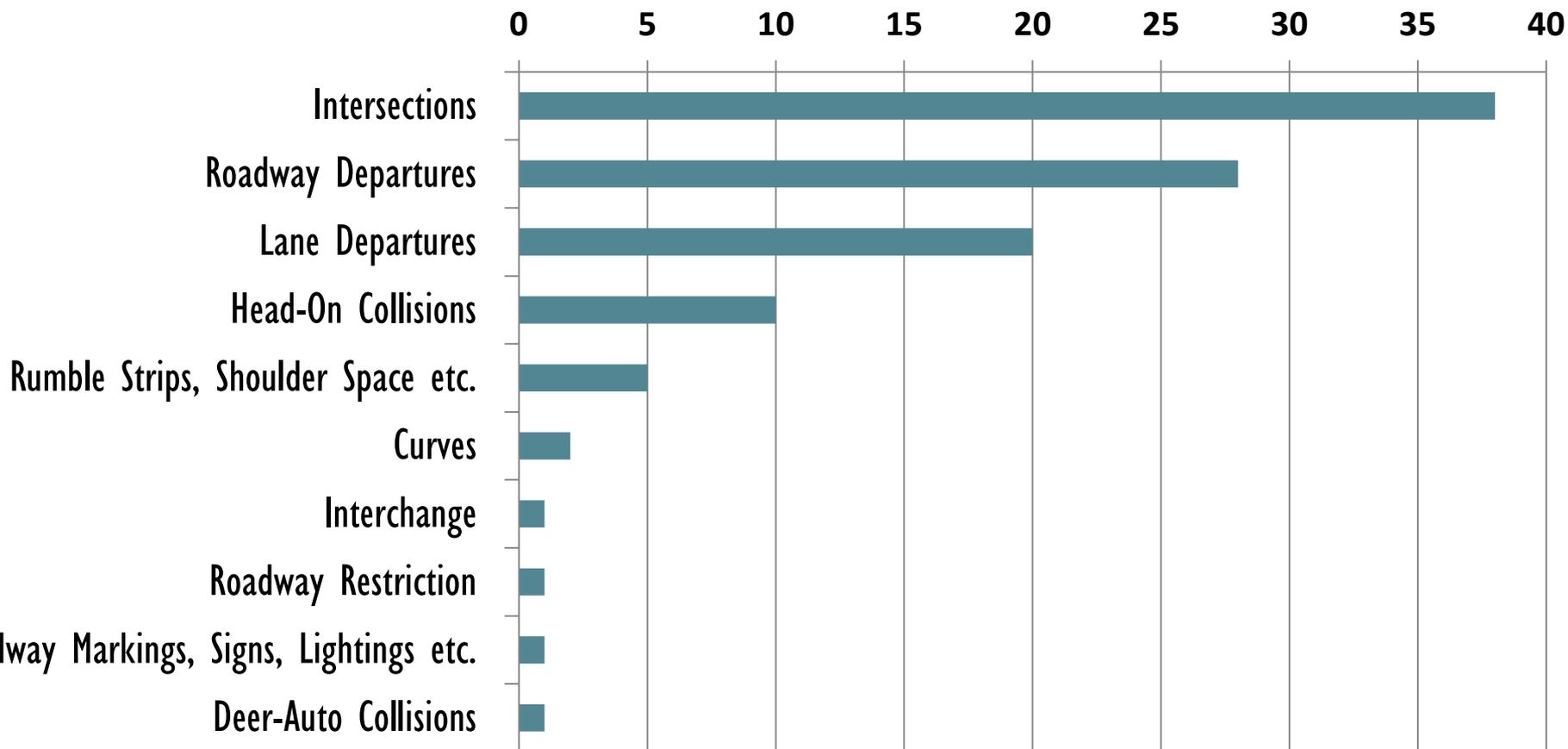
State Safety Plans

Top SHSP Emphasis Areas



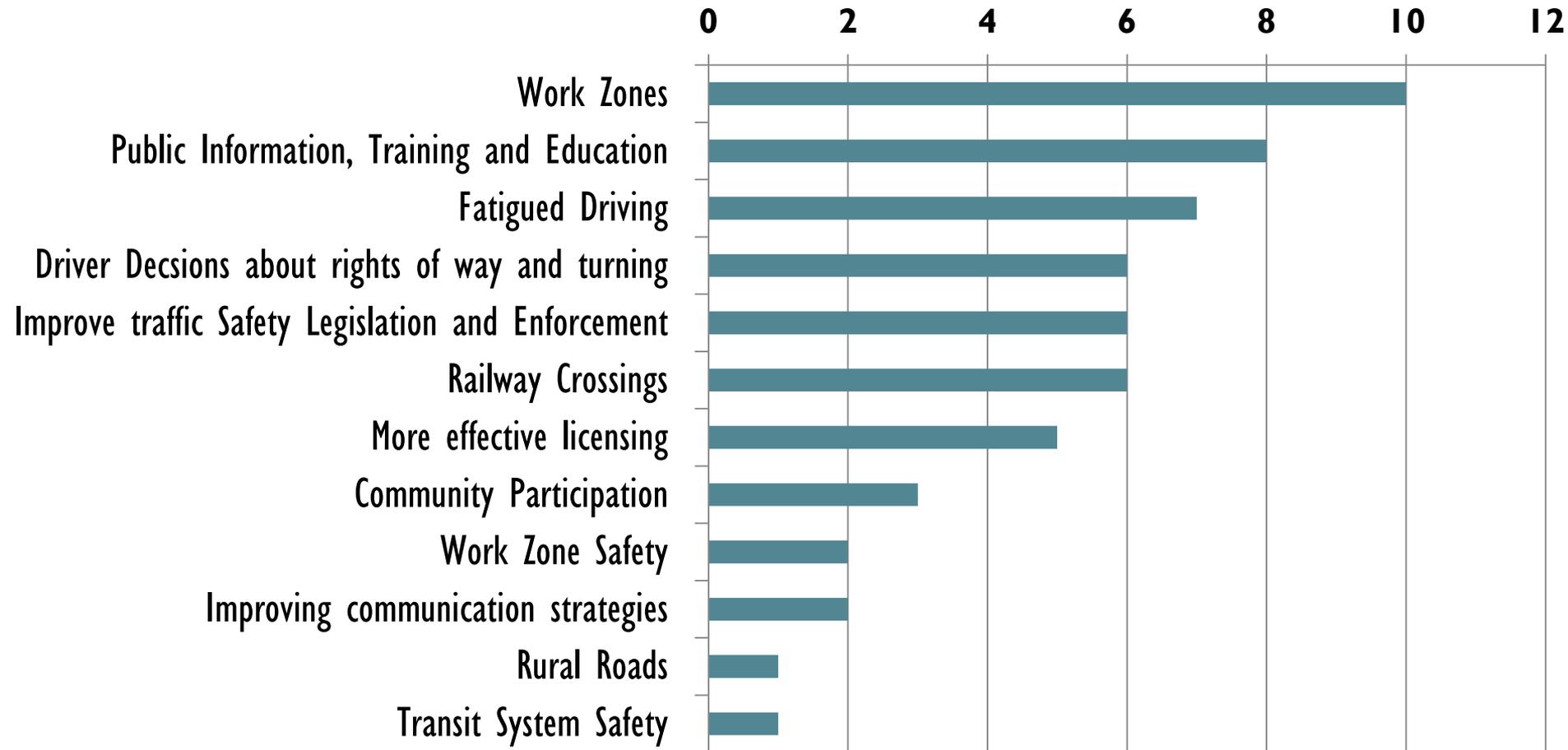
Infrastructure Emphasis Areas

Infrastructure Emphasis Areas



State Safety Plans

Additional SHSP Emphasis Areas



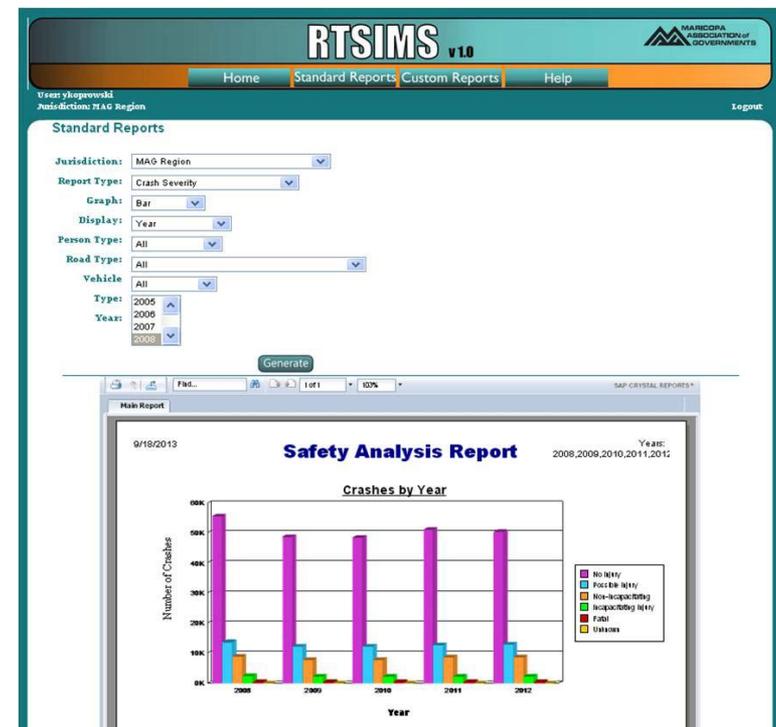
2007 Arizona SHSP

- ▶ **Vision: Every One Counts**
 - ▶ Zero fatalities on Arizona roads, your life depends on it”
- ▶ **Emphasis Areas**
 - ▶ Restraint Usage
 - ▶ Speeding
 - ▶ Young Drivers
 - ▶ Impaired Driving
 - ▶ Roadway / Roadside (lane departure and intersections)
 - ▶ Data Improvement
- ▶ Update currently underway



Current State of Transportation Safety

- ▶ Analysis of 2008 – 2012 crash data
- ▶ Focus on fatal (K) and serious injury (A)
- ▶ Regional Transportation Safety Information Management System (RTSIMS)
 - ▶ Key analytical tool
 - ▶ Free for any local agency in the MAG planning area
- ▶ Crash Tree
 - ▶ Visual tool to help identify the locations where target crash types occur most frequently



Crash Tree of Fatal Crashes

Statewide
Fatal Crashes
2008-2012
3744

47%

Rest of State
1970 – 53%

MAG Planning Area
1774 – 47%

80%

Freeway
352 – 20%

Arterials & Local Roads
1422 – 80%

Older Driver – 67 (17%)
Younger Driver – 114 (28%)
Teen Driver – 31 (8%)
Truck – 110 (27%)
Motorcycle – 64 (16%)
Young Drvr/ Mtrcyl – 13 (20%)

Single Vehicle 50%

Rear End – 80 (23%)
Head On – 19 (5%)
Sideswipe (Same Dir) – 16 (5%)

Not Inters-Related
869 – 40%

Older Driver – 112 (13%)
Younger Driver – 264 (30%)
Teen Driver – 84 (10%)
Pedestrian – 145 (28%)
Bicyclist – 44 (5%)
Truck – 83 (10%)
Motorcycle – 221 (25%)
Young Drvr/ Mtrcyl – 55 (25%)

Single Vehicle 43%

Other – 240 (28%)
Head-On – 83 (10%)
Rear End – 52 (6%)
Angle – 51 (6%)
Left Turn – 28 (3%)
Sideswipe (Same Dir) – 17 (2%)

Arterials & Local Roads
1422 – 80%

Inters-Related
553 – 60%

Angle 38%
Left Turn 27%

Other – 50 (16%)
Single Vehicle – 34 (11%)
Rear End – 23 (8%)

Signalized
304 – 55%

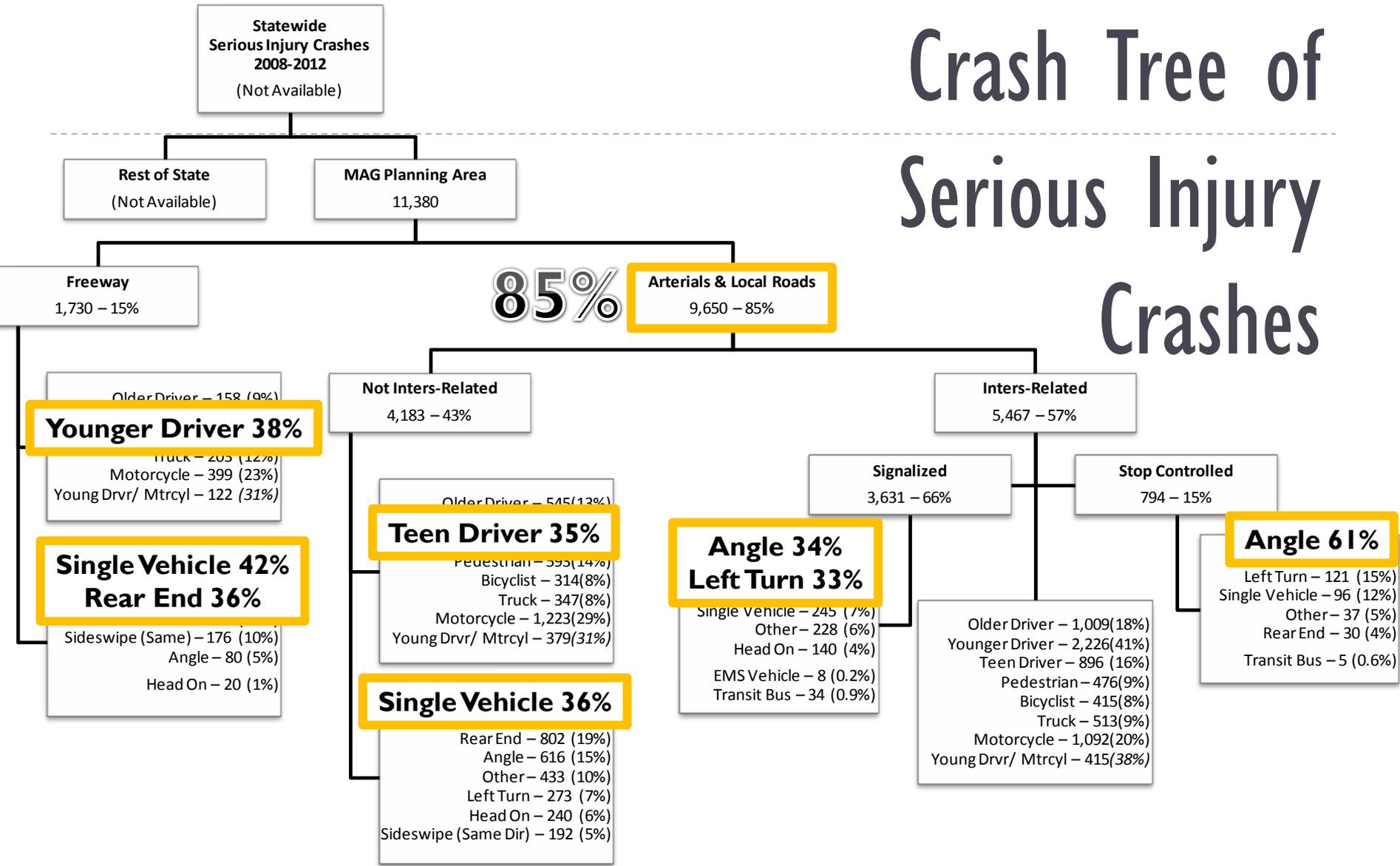
Older Driver – 126 (23%)
Younger Driver – 217 (39%)
Teen Driver – 76 (14%)
Pedestrian – 99 (18%)
Bicyclist – 27 (5%)
Truck – 66 (12%)
Motorcycle – 158 (29%)
Young Drvr/ Mtrcyl – 62 (39%)

Stop Controlled
129 – 23%

Angle 65%

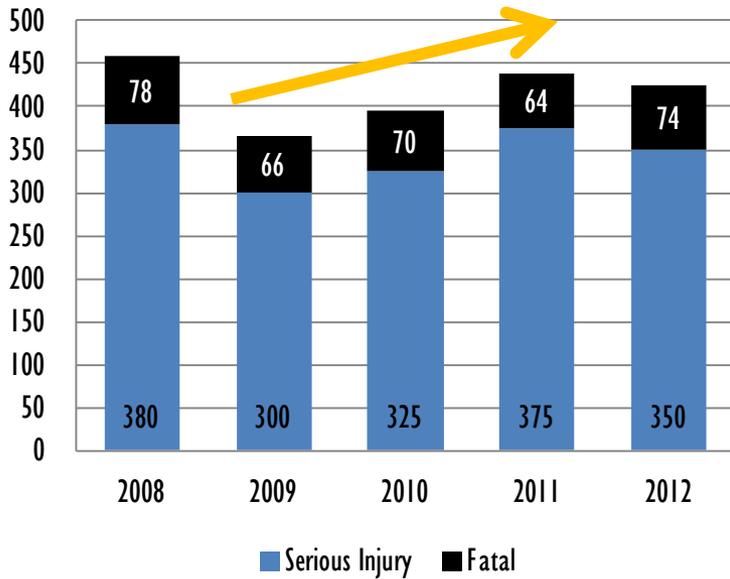
Single Vehicle – 17 (18%)
Other – 13 (14%)
Rear End – 2 (2%)
Left Turn – 1 (1%)
Transit Bus – 2 (1.6%)

Crash Tree of Serious Injury Crashes

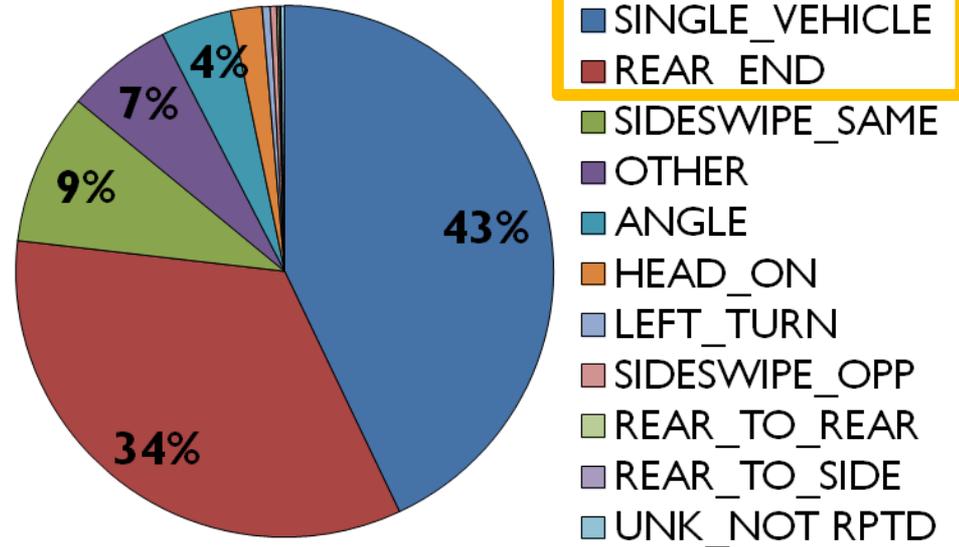


Freeway K + A Crashes

Freeway Crashes

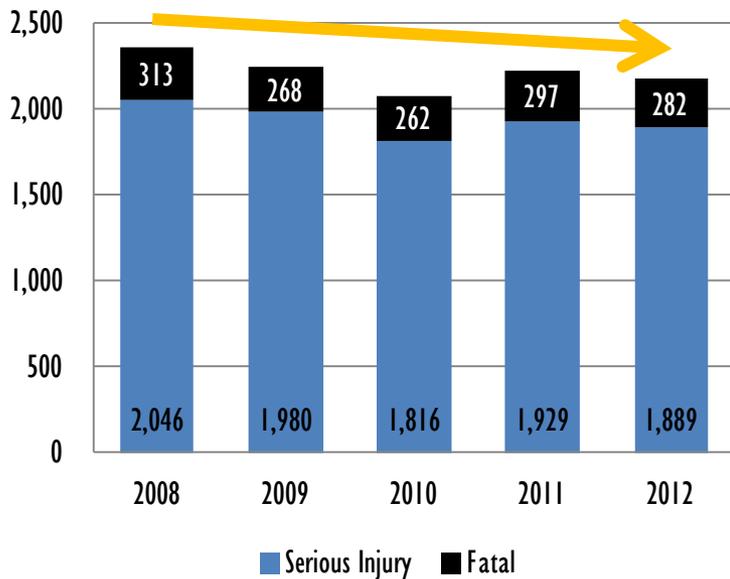


Freeway K + A Crashes
by Collision Manner

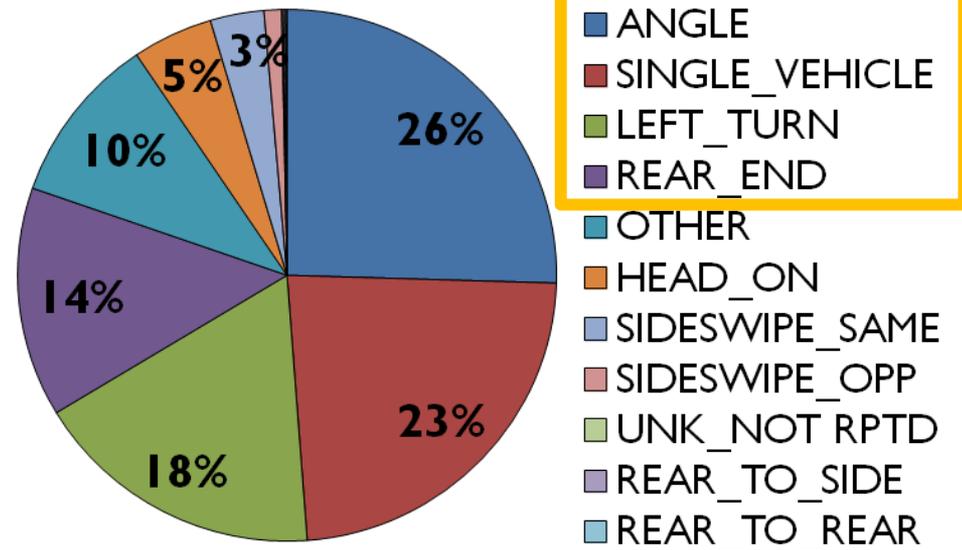


Arterial & Local Road K + A Crashes

Arterial and Local Roads Crashes



Arterial & Local Road K + A Crashes by Collision Manner



K + A crashes on arterials is about 5 times as that on freeways

Driver Conditions & Behavior

MAG Planning Area
Fatal (K) & Serious Injury (A)

Involving Alcohol, Drugs, Meds

2,622

19.9% of all K+A crashes
42.4% of all K crashes
16.4% of all A crashes

42.4%
of all K crashes

Freeway

407(15.5%)

Arterial & Local Roads

2,215 (84.5%)

Inters Related

951 (42.9%)

Signalized

560 (58.9%)

Unsignalized

391 (41.1%)

Non-Inters Related

1,264 (57.1%)

MAG Planning Area
Fatal (K) & Serious Injury (A)

Restraint Not Used

3,812

29.0% of all K+A crashes
46.4% of all K crashes
26.3% of all A crashes

46.4%
of all K crashes

Freeway

630 (33.1%)

Arterial & Local Roads

2,552 (66.9%)

Inters Related

1,604 (62.9%)

Signalized

948 (59.1%)

Unsignalized

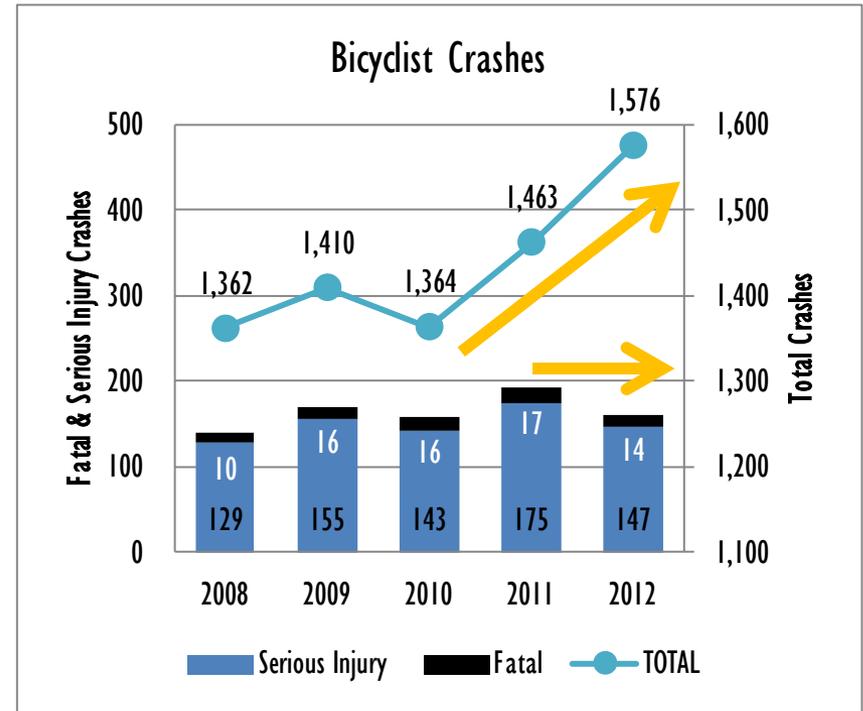
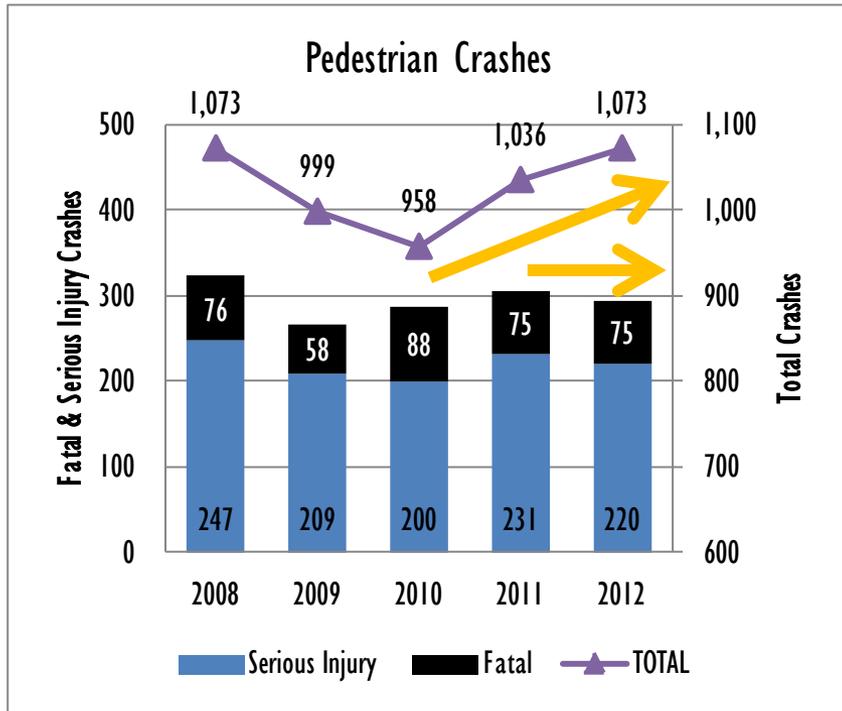
656 (40.9%)

Non-Inters Related

948 (37.1%)



Vulnerable Users – Pedestrians & Bicyclists



Inters Related
575 (40.7%)

Non-Inters Related
838 (59.3%)

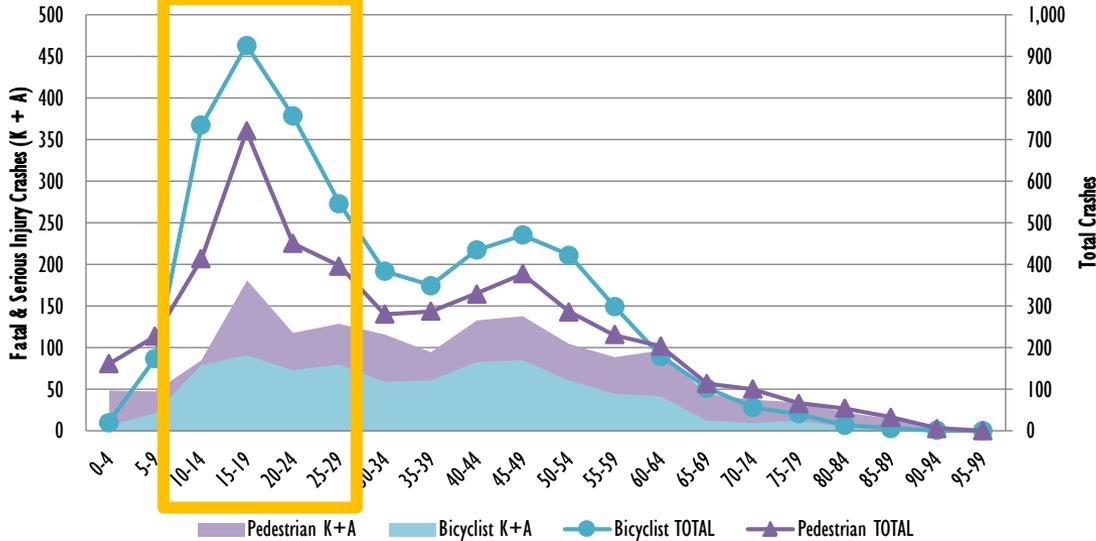
Inters Related
442 (55.3%)

Non-Inters Related
358 (44.7%)

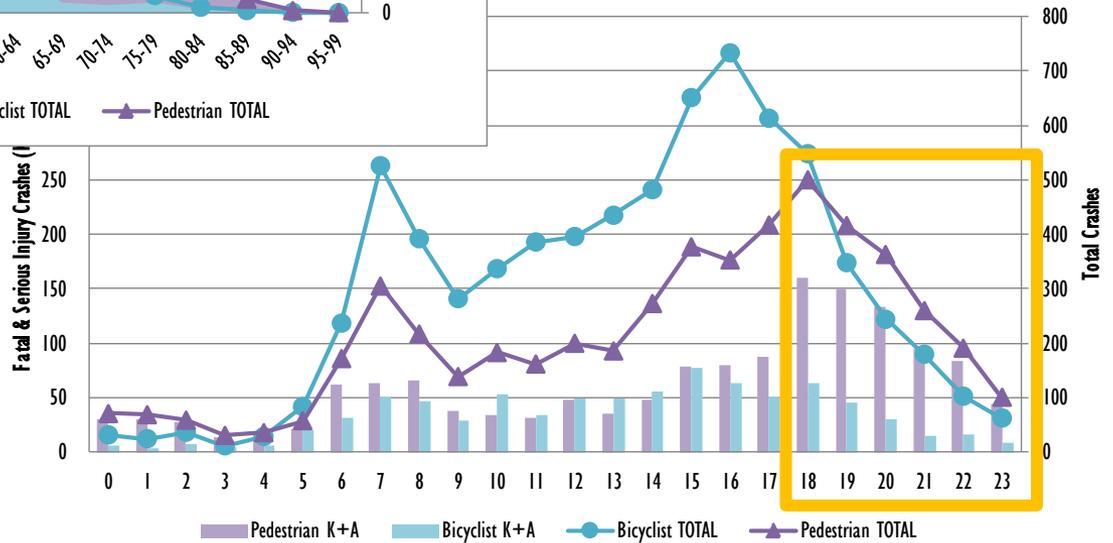


Vulnerable Users

Vulnerable User Crashes by Age

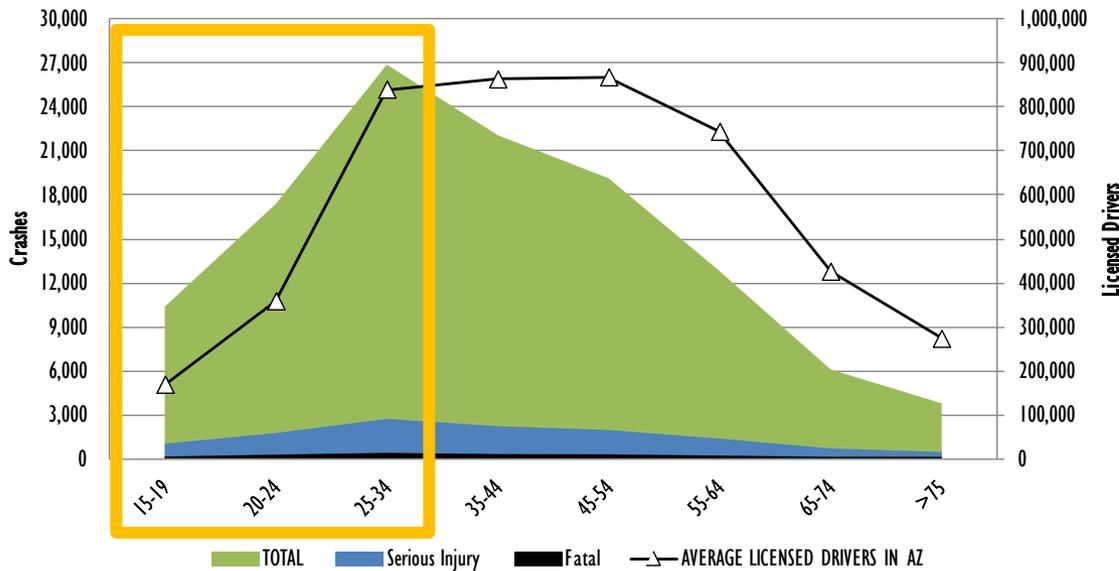


Crashes by Hour of the Day

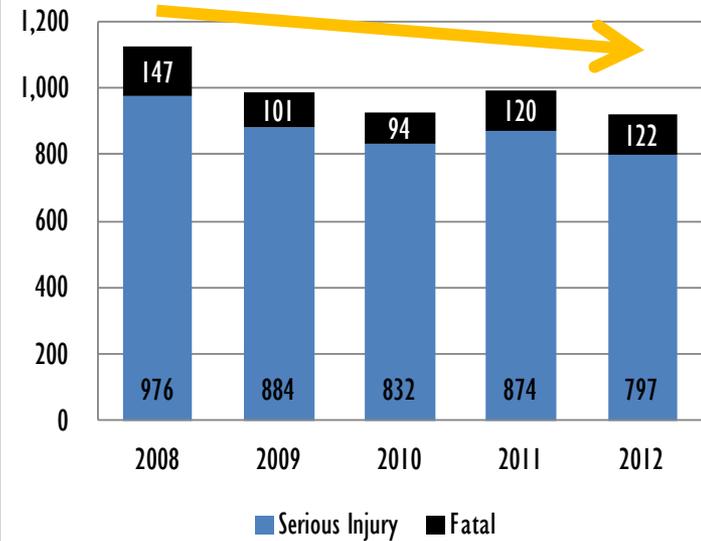


Younger Drivers

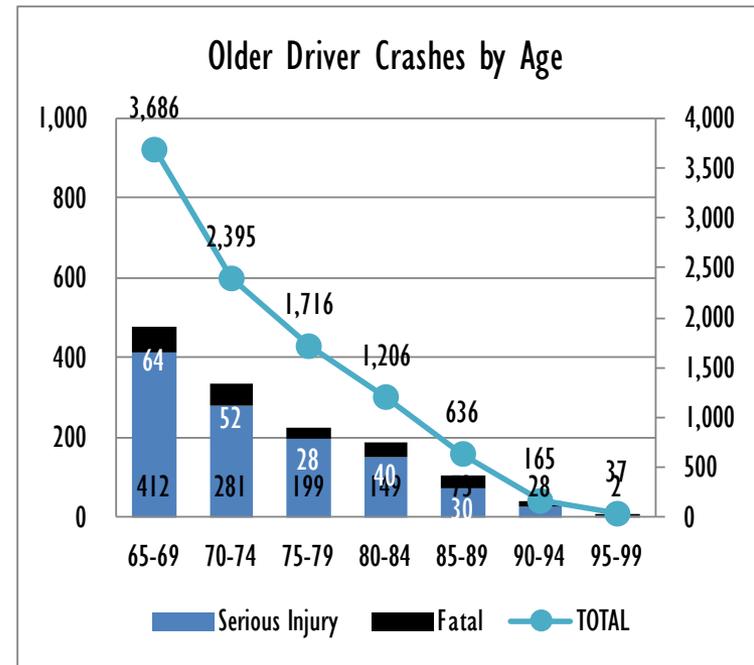
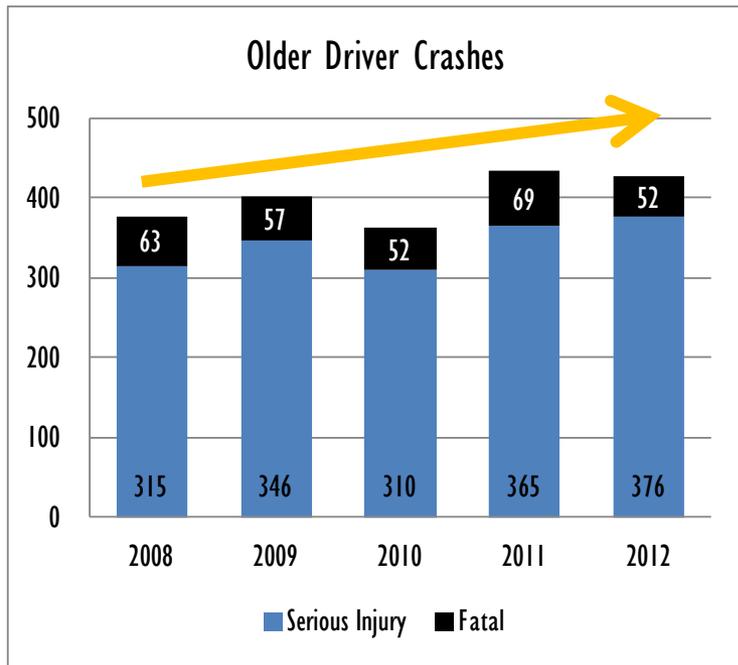
Crashes in the MAG Planning Area by Driver Age Compared to Licensed Drivers in Arizona



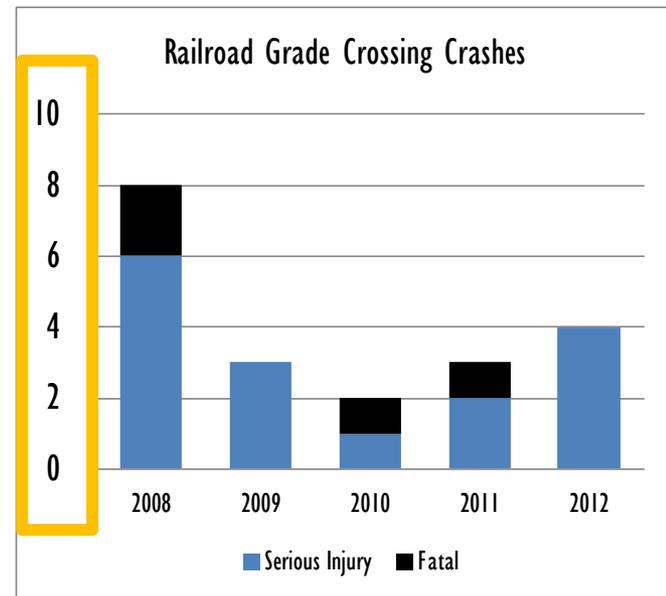
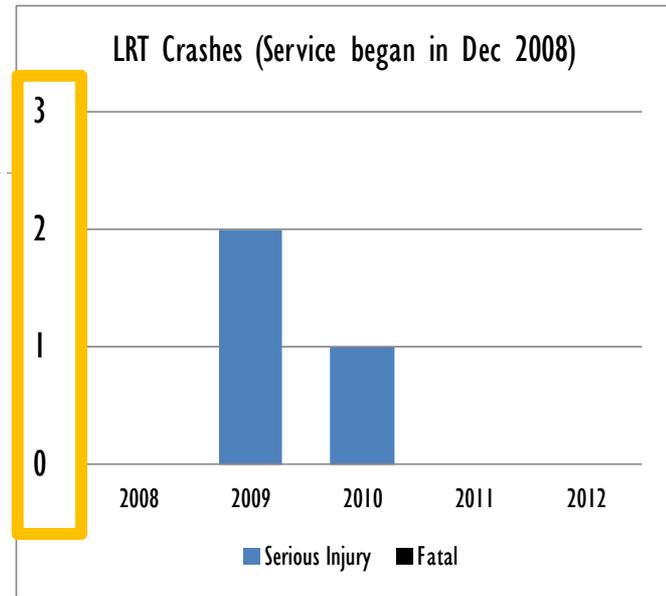
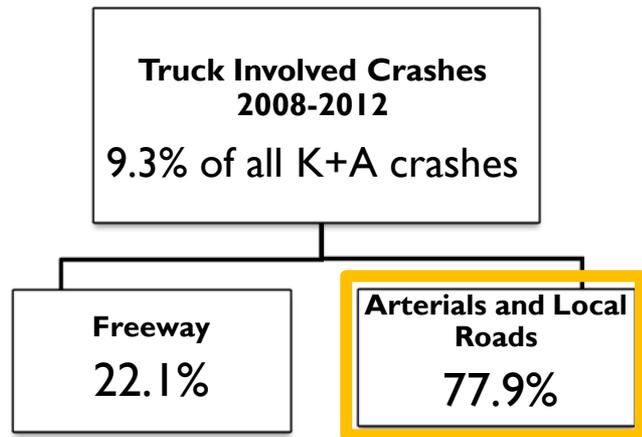
Younger Driver Crashes



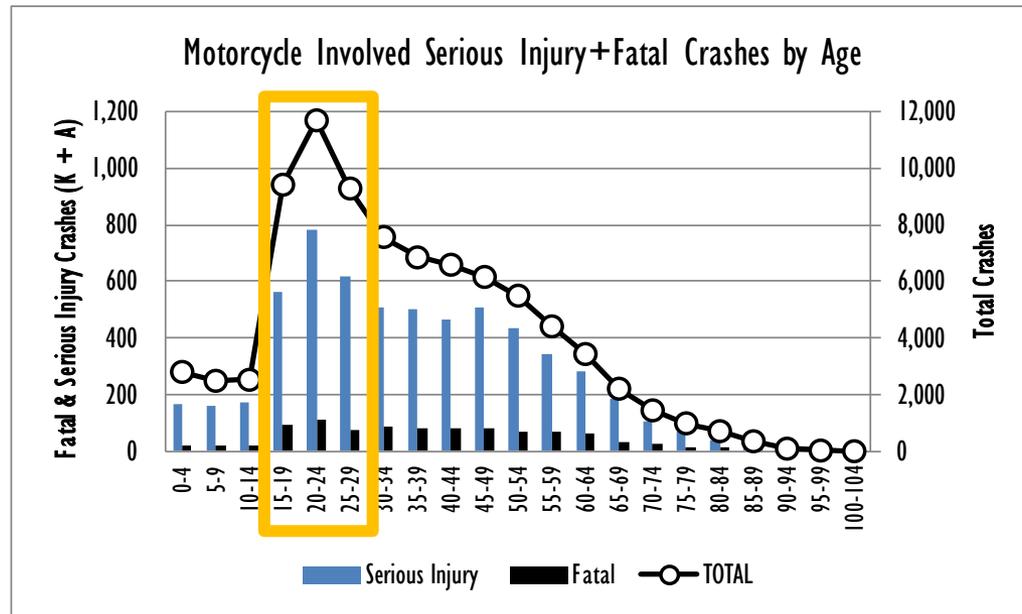
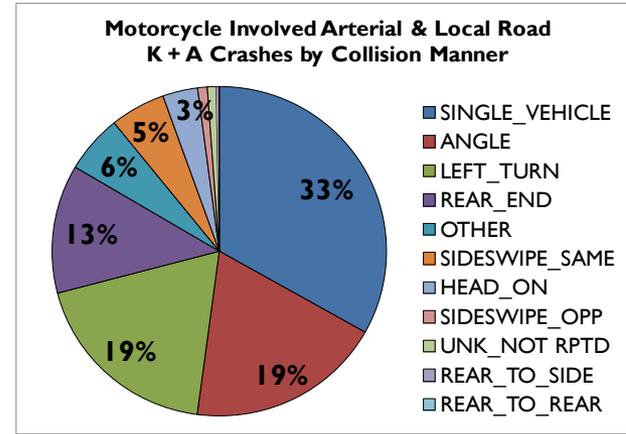
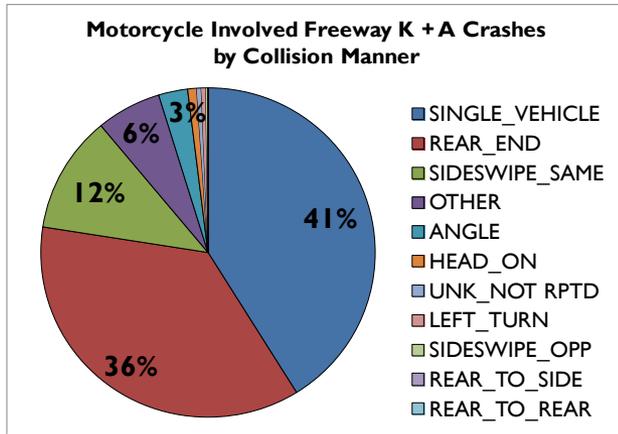
Older Drivers



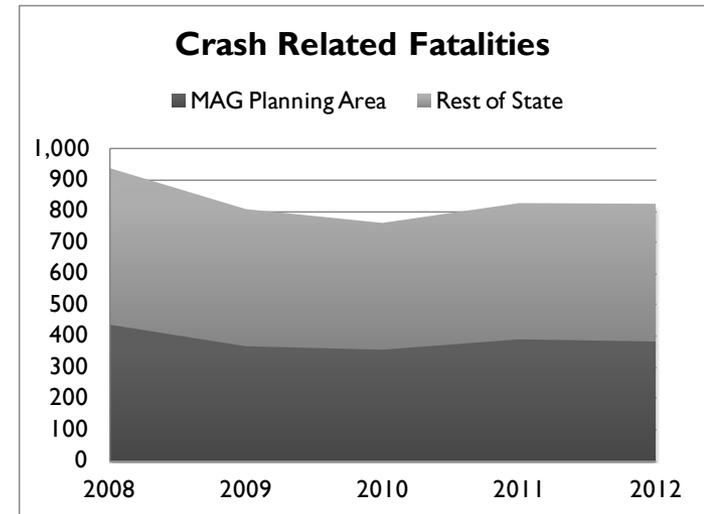
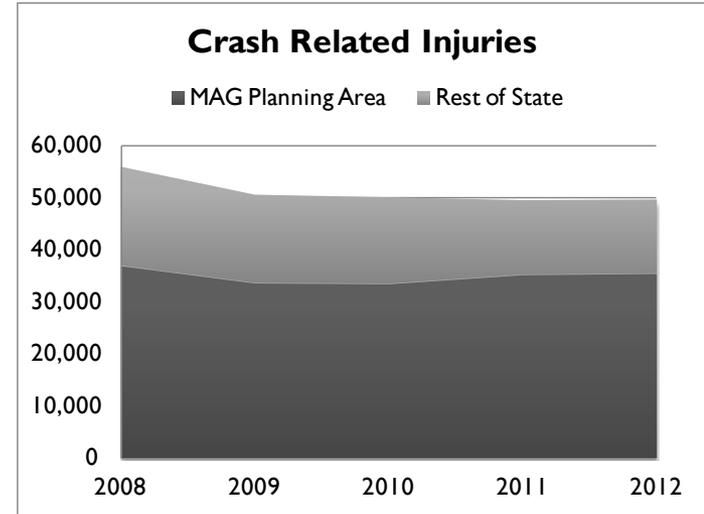
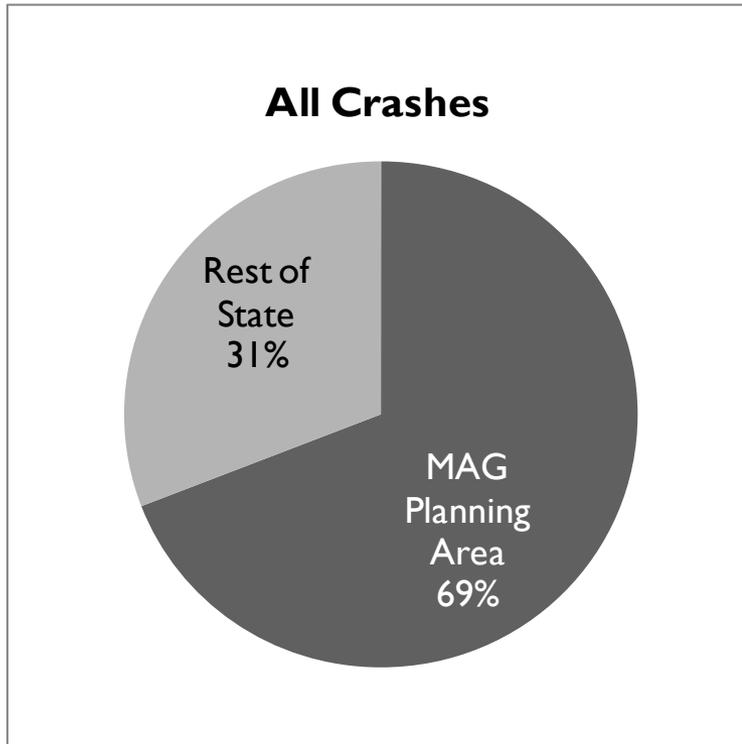
Trucks and Trains



Motorcycles

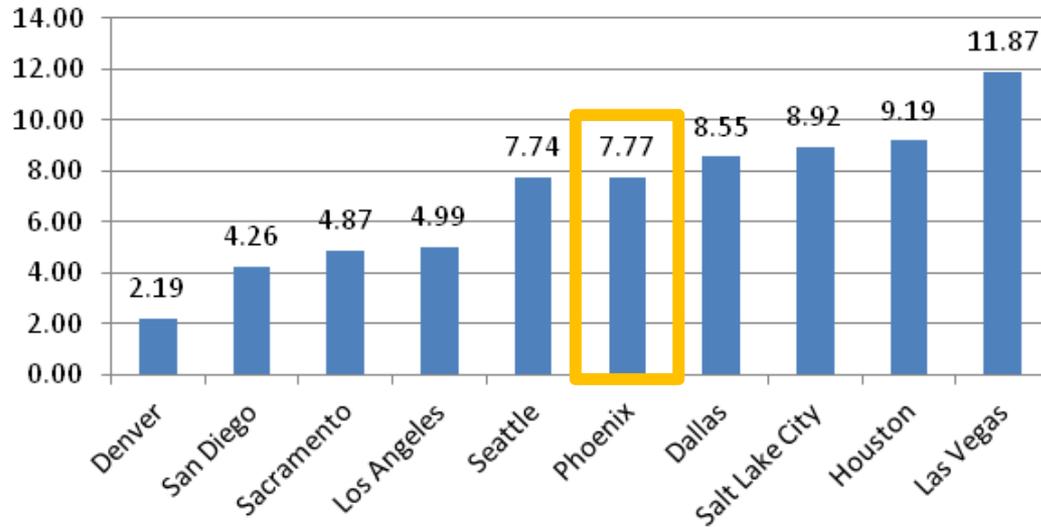


Comparison to the State

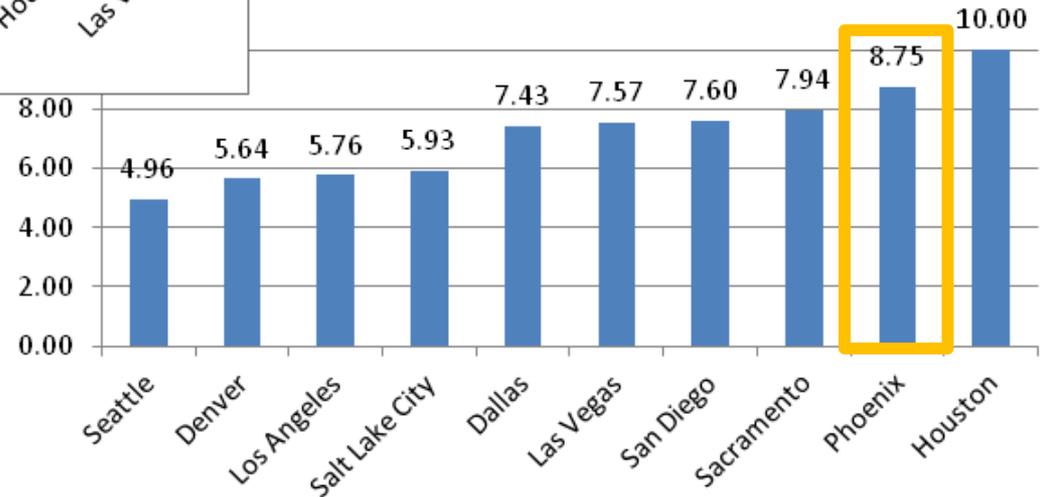


Comparison to Selected Urban Regions

Injuries per 1,000 persons



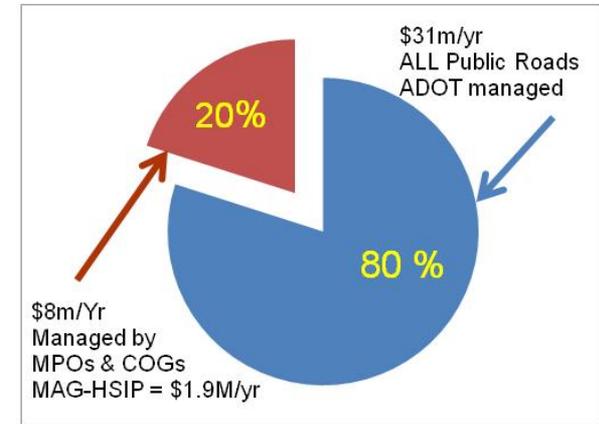
Fatalities per 100,000 persons



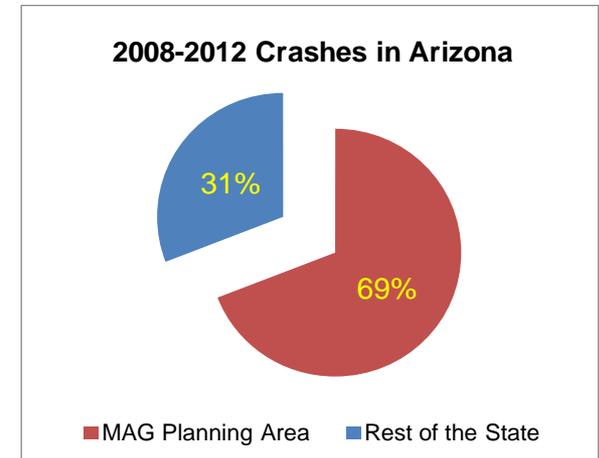
Current Programs & Funding Sources

- ▶ Extensive review of MAP-21
- ▶ MAP-21 establishes national performance goals for Federal highway programs.
- ▶ The number one goal for safety is - **to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.**
- ▶ Pile on the acronyms...
 - ▶ NHPP, STP, CMAQ, HSIP, TAP, SGR, JARC, GOHS, RARF, PARA

Distribution of Federal HSIP Funds by ADOT



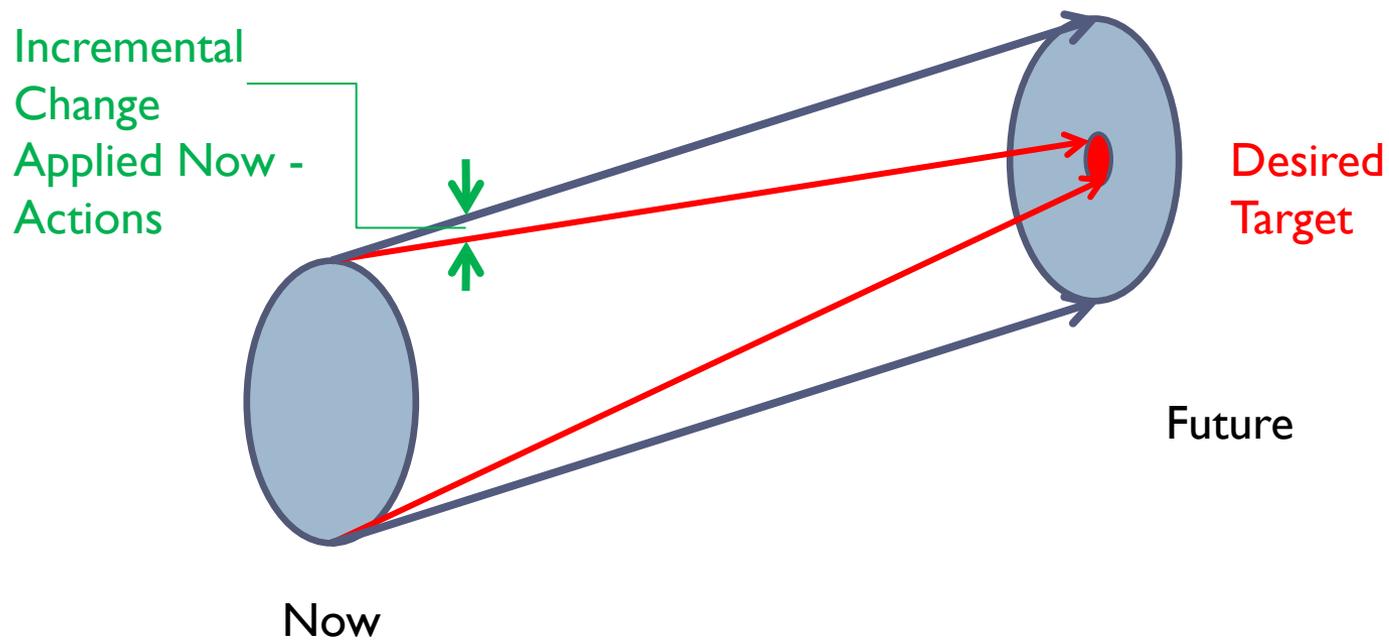
2008-2012 Crashes in Arizona



SUMMARY OF FUNDING PROGRAMS AVAILABLE FOR SAFETY RELATED PROJECTS

				Applicability			Amount Ava
Program	Source	Administered by:	Availability to MAG Region	Purpose(s)	Infra-structure	Non- infra-structure	FY 2014
Highway Safety Improvement Program (HSIP)	Federal	ADOT	Competitive Process for Statewide	Correct / improve hazardous road location or feature, including bicycle / pedestrian trail / path	X		\$32,700
Highway Safety Improvement Program (HSIP)	Federal	MAG	MAG process for MAG planning area	Correct / improve hazardous road location or feature, including bicycle / pedestrian trail / path	X		\$1,900 (MAG planning area)
Railroad-Highway Grade Crossing	Federal (set aside of HSIP)	ADOT	Competitive Statewide Process	Reduce hazard exposure at public railroad crossings	X		\$2,000 (statewide)
Transportation Alternatives Program (TAP)	Federal	ADOT (50%) and MPOs (50%)	Competitive Process for Statewide portion, and MAG process for MAG portion	Transportation enhancements, Safe Routes to School, Recreational Trails	X		\$5,662 available to MPOs in state H12
High Risk Rural Roads (HRRR) Safety	Federal (set aside of HSIP)	ADOT	Limited to rural areas	Construction and operational improvements on rural roads	X		\$-0-
Older Drivers	Federal (set aside of HSIP)	ADOT	State Highway Strategic Plan (SHSP)	If fatalities and serious injuries of older drivers and pedestrians per capita increase over 2-year periodConsider strategies in next SHSP Update focused on older drivers and pedestrians		X	\$-0-
State of Good Repair (SGR)	Federal	FTA	Competitive Federal Process	Dedicated to repair and upgrading of public transportation facilities operating at least 7 years	X		variable
Urbanized Area Formula Grants	Federal	FTA	Formula-based	Safety oversight is eligible	X	X	
Regional Area Road Fund (RARF)	MAG	MAG		Regional arterial street and public transportation projects	X	X	
Highway User Revenue Fund (HURF)	State	ADOT	Formula-based	Highway construction, improvements and other related expenses	X		
Planning Assistance for Rural Areas (PARA)	Federal (Statewide Planning and Research)	ADOT		Planning of rural transportation systems to address issues related to roadway, transit, and non-motorized transportation modes.		X	
Governor's Office of Highway Safety (GOHS)	Federal (National Highway Traffic Safety Administration, NHTSA)	GOHS		Campaigns to target speed-related crashes		X	
Children Are Priceless Passengers (CAPP)	Federal (NHTSA)	GOHS and local agencies		Reduce infant and toddler death and injuries by educating the public on proper use of child safety seats		X	
Governor's Office of Highway Safety (GOHS)	Federal (NHTSA)	GOHS		Various programs to promote bicycle safety		X	

Visioning – Why It's Important



Vision

A description of the ideal future

- Simple
- Understandable
- Meaningful
- Aspirational



I have a dream that one day my four little children will one day live in a nation where they will not be judged by the color of their skin but by the content of their character.

Dr. Martin Luther King, Jr., 1963

Vision — Questions

What does your ideal road safety future look like?

Do people die from traffic crashes?

Is some number of deaths acceptable?

Does the future include serious injuries?

Vision — Discussion

What does your ideal road safety future look like?

Do people die from traffic crashes in it?

Is some number of deaths acceptable?

Does the future include serious injuries?

What is the Consensus of the Group?

Example Vision

Zero

- ▶ Zero Fatalities on Arizona Roads, your life depends on it
- ▶ Zero Deaths is the only goal we can all live with
- ▶ Zero Deaths – Zero Injuries
- ▶ Zero Fatalities...saving one life at a time
- ▶ One Death is one too many
- ▶ Eliminate Deaths and Injury

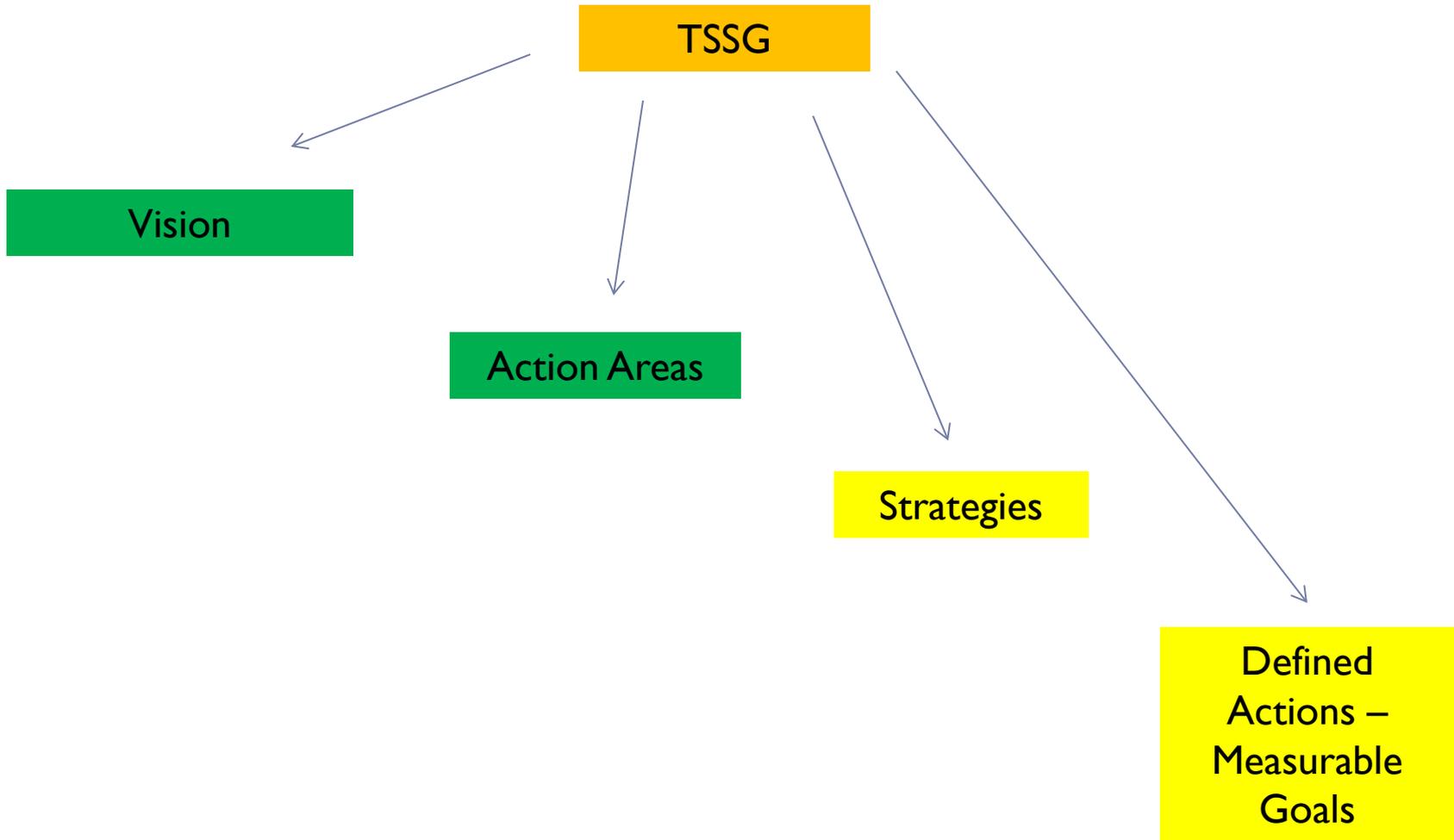
Toward Zero

- ▶ Toward Zero Deaths
- ▶ Every Life Counts – Toward Zero Deaths

Arriving Safely

- ▶ All user arrive safely at their destinations
- ▶ Highway users reach their destination safely
- ▶ All road users arrive safely at their destinations
- ▶ Arrive Alive

Process



Action Areas

What are the most important issues for this plan to address?

What problems should you address to achieve your vision?

What problems did the data analysis reflect?

They are not:

strategies or specific actions.

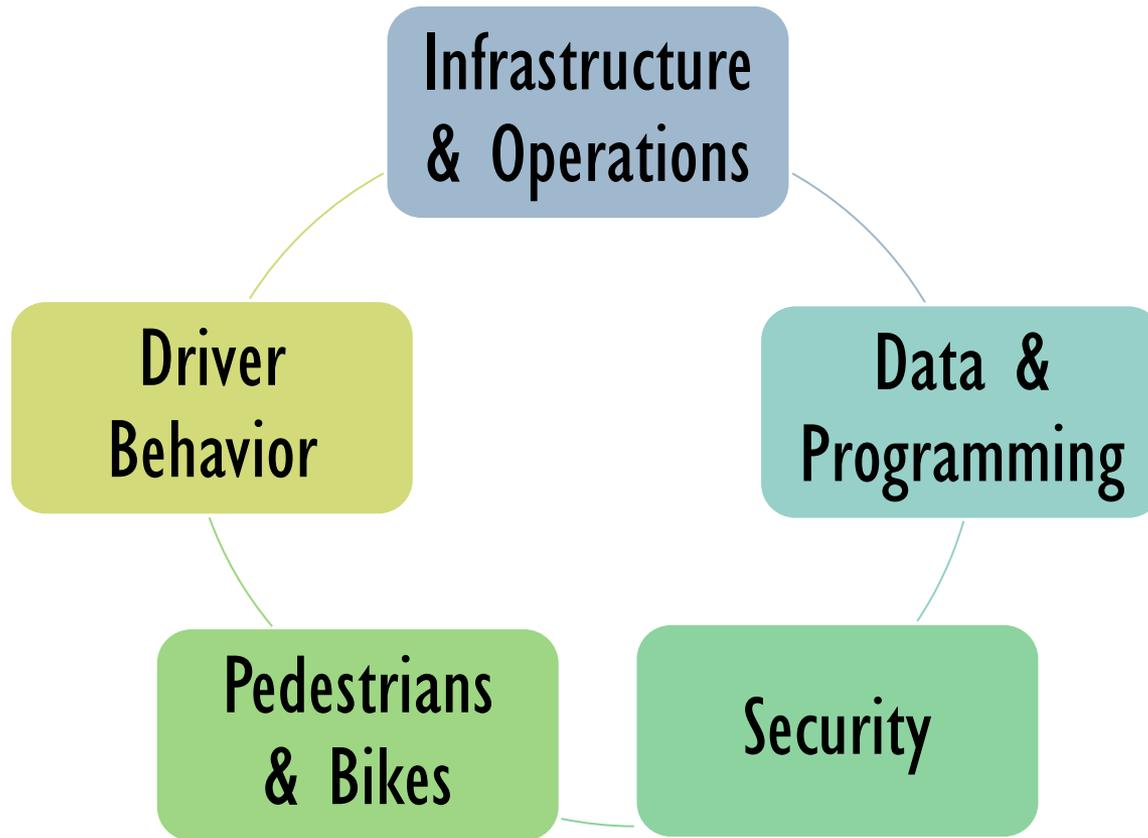
They are:

areas that specific strategies and actions will be developed for



Existing MAG Safety Plan

Goals/Strategies can be grouped in one of 5 Action Areas



Example Action Areas – Infrastructure and Operations

- ▶ Build safer roadways by design
- ▶ Intersections
 - ▶ Improve intersection safety for all roadway users
 - ▶ Improve the planning, design and operations of intersections
- ▶ Roadway and Lane Departure
 - ▶ Reduce the frequency of roadway departure crashes
 - ▶ Keep vehicles on the roadway

Example Action Areas — User Groups

▶ Younger

- ▶ Reduce young driver fatalities
- ▶ Address the over-involvement of young drivers in crashes
- ▶ Institute graduated licensing for young drivers (strategy)
- ▶ Improve teen driver performance (strategy)

▶ Older

- ▶ Sustain safe senior mobility
- ▶ Improve safety for older roadway users

▶ Pedestrians

- ▶ Make walking and street crossing safer
- ▶ Reduce pedestrian fatalities and injuries

▶ Bicycling

- ▶ Improve bicycling safety
- ▶ Reduce bicycle fatalities and injuries

▶ Motorcycle

- ▶ Improve motorcycle safety
- ▶ Reduce the number of motorcyclist fatalities.

▶ Commercial Vehicles /Trucks

- ▶ Improve commercial vehicle safety
- ▶ Make heavy vehicle travel safer
- ▶ Reduce crashes involving heavy trucks

Example Action Areas — User Behavior

▶ Impaired

- ▶ Reduce impaired driving
- ▶ Reduce impaired driving related fatalities
- ▶ Reduce alcohol-impaired driving

▶ Training and Licensing (all strategies)

- ▶ *Ensure* drivers are properly licensed
- ▶ *Ensure* drivers are licensed and competent
- ▶ Increase driver safety awareness
- ▶ Increase enforcement and public information and education on traffic safety issues
- ▶ Improve driver decisions about rights of way and turning

▶ Restraints

- ▶ Increase seatbelt usage
- ▶ Increase occupant restraint usage
- ▶ Increase the use of safety restraints for all occupants

▶ Speeding/Aggressive

- ▶ Putting the brakes on aggressive driving
- ▶ Reduce speeding and aggressive driving

▶ Distraction/Alertness

- ▶ Curb distracted driving and keep drivers alert
- ▶ Improve driver alertness / reduce driver distraction

Example Action Areas — Consequences, Data & Resources

▶ Crash Consequences

- ▶ Improve Post crash survivability
- ▶ Minimize the consequences of leaving the road (strategy)
- ▶ Enhance emergency medical capabilities to increase survivability (strategy)

▶ Data and Decision-making

- ▶ Improve traffic records
- ▶ Improve safety data collection, access and analysis
- ▶ Make more effective safety decisions

▶ Resources

- ▶ Increase the amount of funding for safety improvements

What issues do we need to act on?

Based on the data, and your knowledge of safety issues:
What areas should we take action in?

- Freeways vs. Arterials and Local Roads? Intersections?
Other?
- Pedestrians?
- Bicyclists?
- Younger?
- Impaired?
- Restraints?

Discussion on Action Areas

1. Split into groups for review and discussion (count off by 5)
2. Select a scribe and spokesperson
3. Define 7 or 8 emphasis actions
4. Use verbs such as: reduce, improve, prevent, save,
5. Report out results
6. Develop common list
7. Discuss
8. Build Consensus on Action Areas

2005 MAG STSP Goals

Infrastructure and Operations

- ▶ Promote Road Safety Audits for New and Existing Developments
- ▶ Reduce the Crash Clearance Time
- ▶ Reduce Severe Intersection Crashes
- ▶ Conduct Safety Reviews Of Proposed LRT and BRT Operations
- ▶ Starting at Design
- ▶ Improve Lighting, Signage and Delineation for Older Road Users
- ▶ Improve Lighting, Signage and Accessibility for Physically Handicapped Users
- ▶ Reduce Time to Respond and Clear Crash Sites
- ▶ Improve Traffic Safety in Work Zones

Pedestrians Bicyclists

- ▶ Reduce the Number of Crashes that Involve Bicyclists or Pedestrians
- ▶ Improve Safety on Access Routes to Schools
- ▶ Incorporate Safety Considerations in Pedestrian and Bicycle Planning
- ▶ Promote Safe Multi-Modal Access
- ▶ Reduce Mid-Block Pedestrian Crashes

Driver Behavior

- ▶ Improve the Overall Public Awareness on Key Road Safety Issues
- ▶ Reduce Crashes Related to DUI, Speeding, Red-Light Running and the Illegal Passing of Stopped School Buses
- ▶ Strengthen Driver Training and Licensing Standards
- ▶ Educate the Public on Safe Actions to Take at Road Crash Sites

Data and Programming

- ▶ Develop a Reliable and Efficient Method to Assess the Safety Performance
- ▶ of the Regional Transportation System.
- ▶ Better Utilize Available Road Safety Funds

Security

- ▶ Enhance Transportation Security