Comprehensive Safety Action Plan

Sustainability and Transportation Committee
March 17, 2025

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mesa·az

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City of Mesa
ROAD SAFETY

AGENDA

1. CSAP Report Overview
2. Safety Analysis
3. Public Engagement
4. CSAP Strategies and Actions
5. Tracking and Monitoring
6. Next Steps
7. Q & A

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01 CSAP Report Overview

Why is the plan important?

1,359

This number represents the total number of people seriously injured or killed on Mesa Streets between 2017 – 2022.

That's enough to fill up three whole sections behind the dugout at Sloan Park.

Why is the plan important?

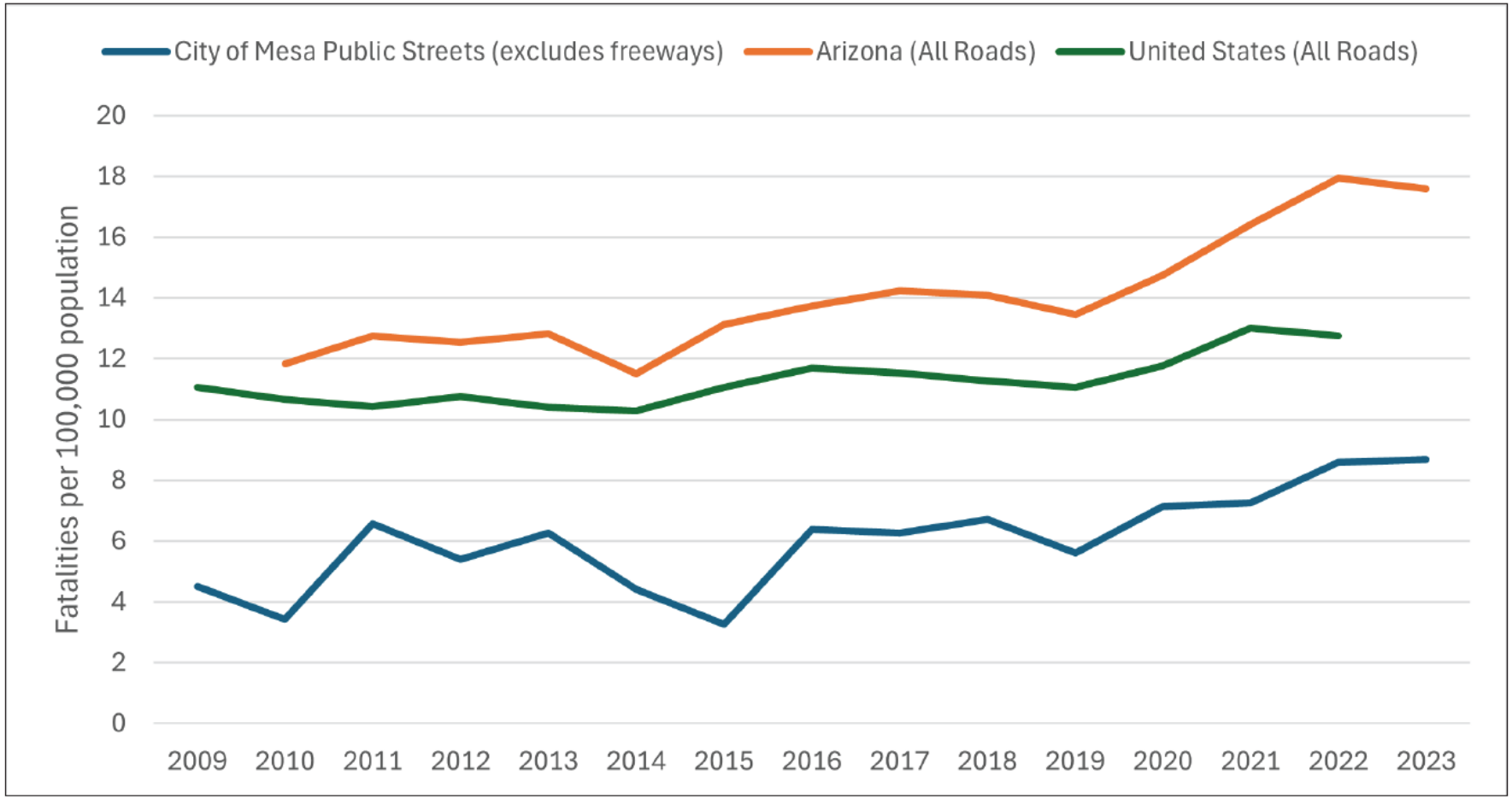
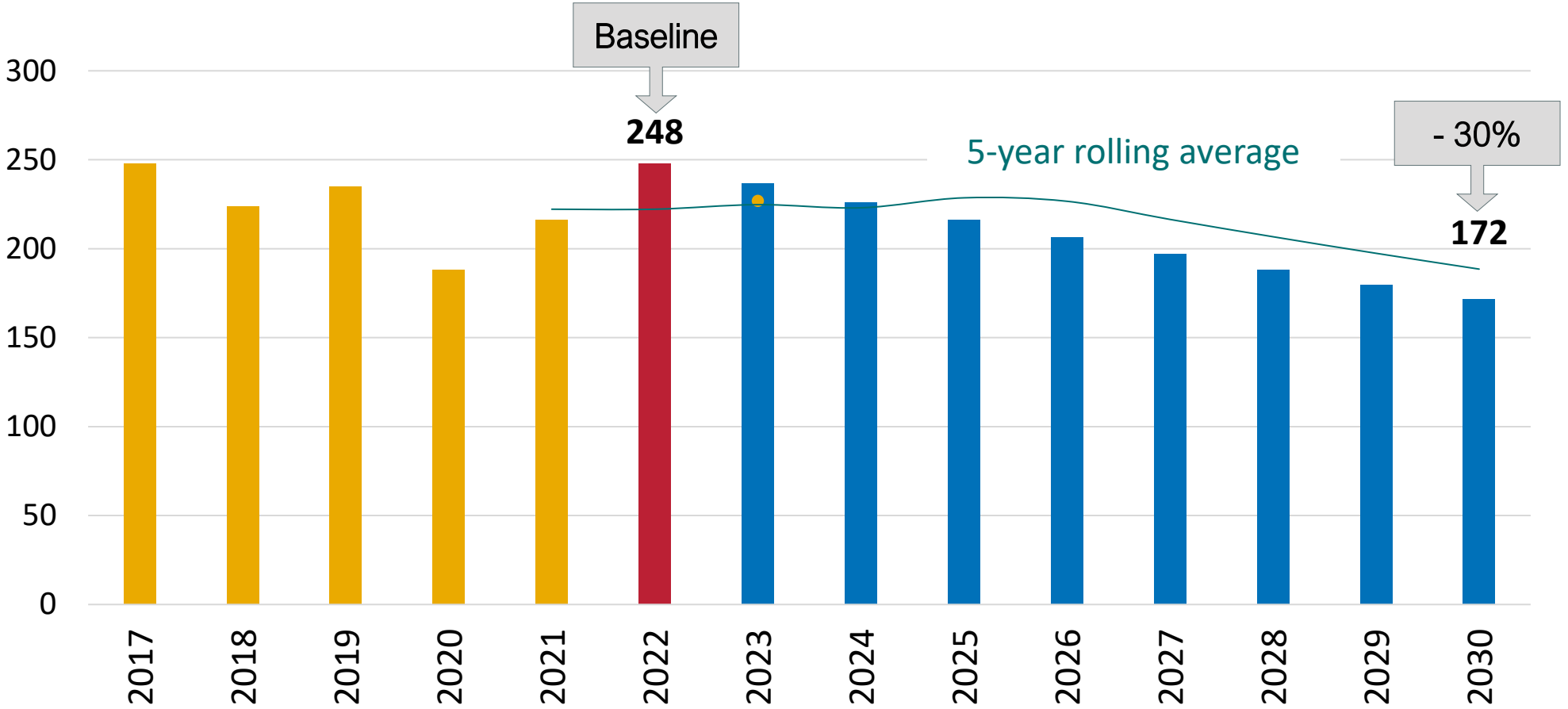


Figure 10: Fatalities Per 100,000 Population

Sources: City of Mesa – 2023 Annual Crash Report, Arizona – 2023 ADOT Crash Facts and ACS 1-year estimates from Census, United States – FARS.

A Path Forward

Fatalities and Serious Injuries



Estimated annual reduction of 10 fatalities & serious injuries per year

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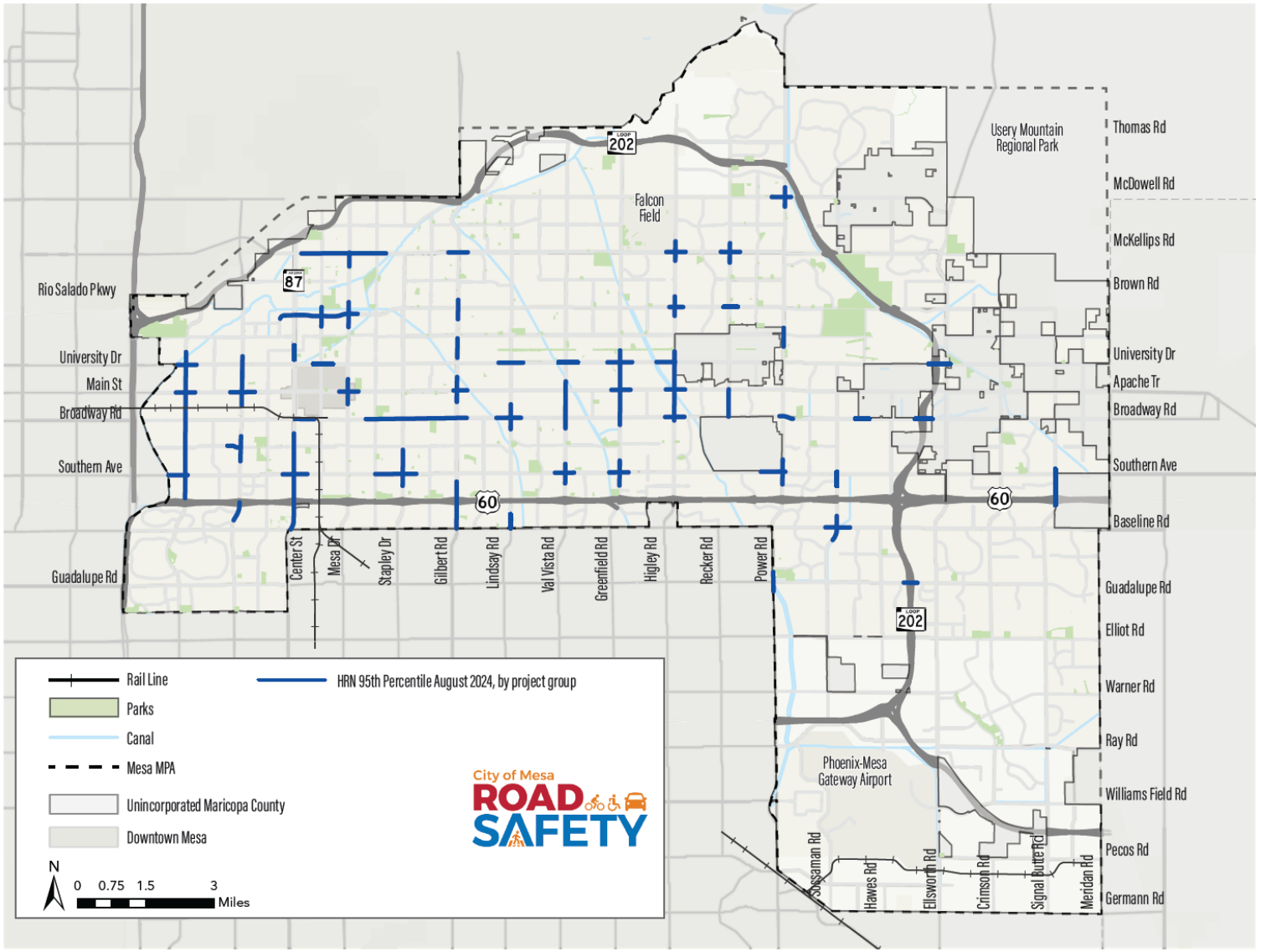
02 Safety Analysis

High Risk Network

- Segments
- Collision History
  - Severity (Fatal, Severe, Minor, Possible Injury)
  - Vulnerable Mode (Ped, Bike, Motorcycle)
  - Vulnerable Age (<18 or 65+)
  - Federal Disadvantaged Community designation
  - Results in a Collision Score
- Risk Factors
  - Segments with 6 or more overlapping factors

High Risk Network



Collision Profiles

Failed to Yield violations on streets with 40+ MPH posted speed

Head on collisions

Pedestrian collisions at signals on 6+ lane streets

Pedestrian collisions between 6 PM and midnight in commercial areas

Collisions involving drivers age 65+

Collisions involving alcohol or drugs

Bike angle collisions at intersections (signalized and unsignalized)

Bike and Pedestrian collisions involving people 17 and under

Motorcycle and vehicle-only collisions involving left turns at signals without fully protected lefts

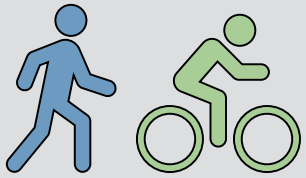
Motorcycle collisions at unsignalized intersections on arterials

Motorcycle single vehicle collisions

Road Safety Focus Areas

Vulnerable Ages (<18 & 65+)

Motorcycle



Vulnerable Road Users (Ped & Bike)

Arterial Segments

Behavior

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03 Public Engagement

Phase Two Public Engagement Elements

Event Name	Day and Date	Location	Attend / Distribute
Multi-Cultural Fair – Hispanic Chamber	Saturday, September 14	Pioneer Park	Attend In-Person
College and Career Fair	Monday, September 16	Mesa Convention Center	Attend In-Person
COM Benefits Fair	Thursday, October 5	Convention Center	Distribute Materials
Celebrate Mesa	Saturday, October 12	Red Mountain Sports Complex	Attend In-Person
Dia de Los Muertos	October 19 & 20	Mesa Arts Center	Attend In-Person
GAIN Event	Saturday, November 2	Multiple Locations	Distribute Materials

- In-person events
  - Bookmarks & Selfie Boards
  - Survey Boards
- Updated Fact Sheet
- Online Survey
  - Sept 16 through Nov 15

In Person Feedback

Do you agree with the proposed safety strategies?

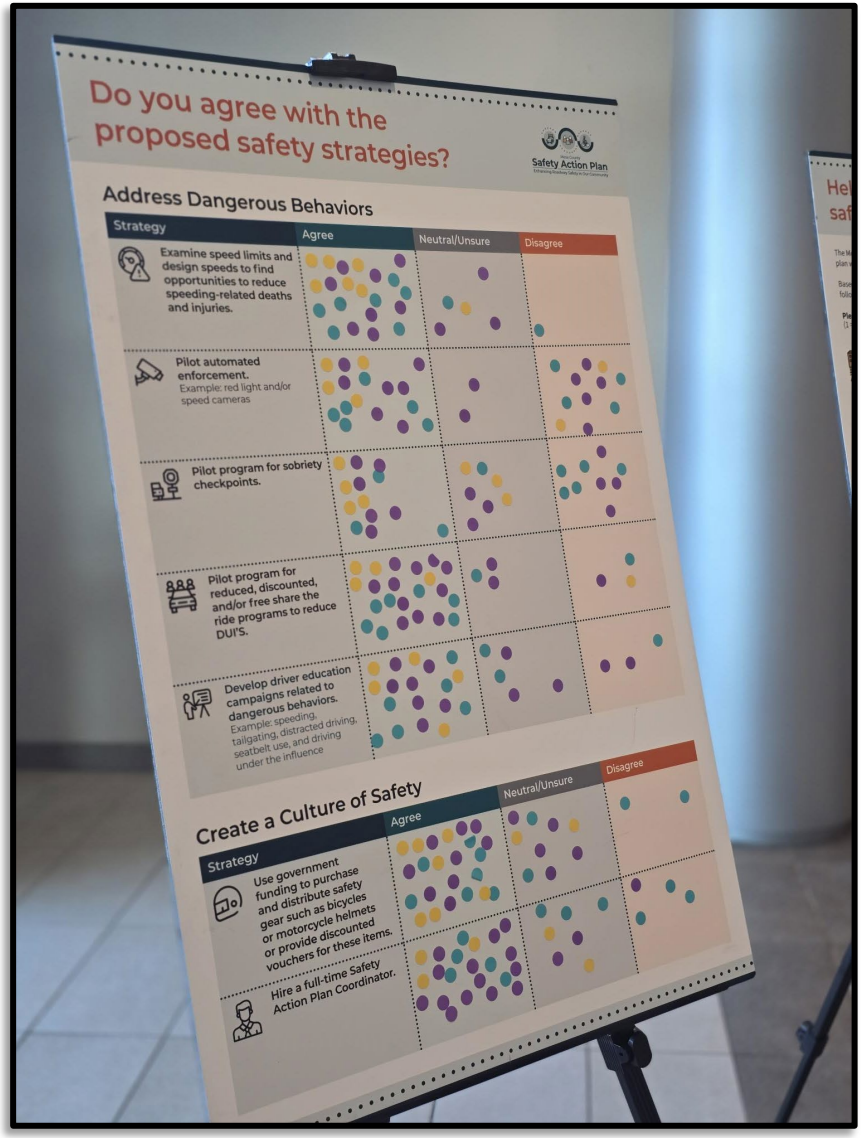
City of Mesa ROAD SAFETY
Moving Mesa Towards Safer Streets

Please review the following strategies and rank them based on your level of agreement: disagree, neutral or agree. Your feedback on these strategies will help us prioritize and refine our road safety efforts.

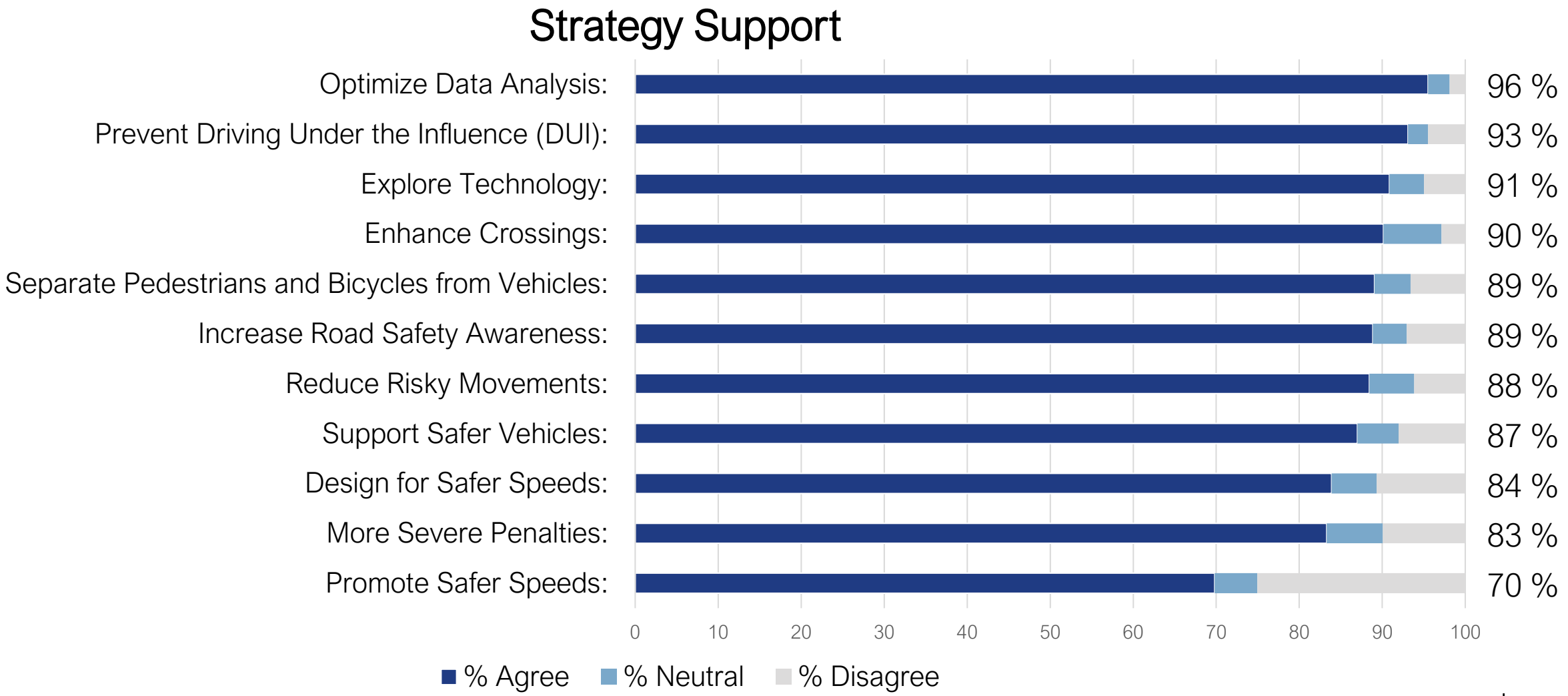
Non-Infrastructure

Strategy	Agree	Neutral/Unsure	Disagree
Promote Safer Speeds: Mesa will promote safer speeds through enforcement, including expanding the use of automated enforcement systems, such as red light and speed cameras.			
More Severe Penalties: Mesa will advocate for more severe penalties for dangerous driving behaviors, especially in cases where someone is seriously injured or killed.			
Increase Road Safety Awareness: Mesa will increase awareness through education campaigns for community members under 25 and over 65, and motorcyclists.			
Prevent Driving Under the Influence (DUI): Mesa will strengthen our enforcement and education programs to prevent driving under the influence of alcohol, drugs and prescription medications.			
Optimize Data Analysis: Mesa will continue to publish an annual crash report with more data to better understand crash types and how to prevent them.			

The United States Department of Transportation has adopted the Safe System Approach to help address the safety crisis on America's roadways. The Safe System Approach is the guiding paradigm of Mesa's Comprehensive Safety Action Plan, that will help move us closer to our shared safety goals.



Phase Two Survey Results



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04 CSAP Strategies and Actions

Strategy Refinement Process

Started with 100 actions targeting 10 collision profiles

Refined and adjusted based on technical team feedback

Categorized into infrastructure and non-infrastructure strategies

Finalized 28 actions with 9 strategies (13 infrastructure, 15 non-infrastructure)

Strategy Prioritization

- Identified and established metrics to prioritize strategies tailored to infrastructure and non-infrastructure.

Strategies Prioritized By:

Infrastructure

FHWA Hierarchy:
1. Remove Severe Conflicts
2. Reduce Vehicle Speeds
3. Manage Conflicts in Time
4. Increase Attentiveness and Awareness

+

Collision Profile Score

Non-Infrastructure

Public Sentiment:
1. Enforce Existing Laws
2. Driver Education
3. Encouragement

+

Collision Profile Score

Infrastructure Strategies

1. Enhance Crossings

2 Actions

2. Reduce Risky Movements

4 Actions

3. Separate Peds & Bikes from Vehicles

2 Actions

4. Design for Safer Speeds

3 Actions

5. Support Safer Vehicles

2 Actions

Non-Infrastructure Strategies

1. Increase Road Safety Awareness

10 Actions

2. Prevent DUIs

2 Actions

3. Optimize Data Analytics

3 Actions

Sample Strategy & Action - Infrastructure

Reduce Risky Movements

Action: *Install raised medians to reduce conflict points on arterial roads.*

Sample Strategy & Action - Non-Infrastructure

Increase Road Safety Awareness

Action: *Continue to publish an annual crash report with more data to better understand crash types and how to prevent them.*

Strategy and Action Effectiveness

Action #	Action Name	Source	Description	Estimated Crash Reduction	Applicable Crashes
Reduce Risky Movements					
1	**Raised Medians for Access Control**	CMF ID 2220	Install Raised Medians	55%	Angle/LT crashes, Principal Arterials
	Left-in Left-out Operations	CMF ID 11064	Install left-in left-out treatment	33%	Angle/LT crashes
2	**Implement Roundabouts**	CMF ID 4868	Conversion of intersection to roundabout	42%	All crashes
6	**Protect Left Turn Movements**				
	Permissive to Protected-Permitted	CMF ID 4270	Change permissive left-turn phasing to protected/permissive	14%	LT Crashes
	Permissive to Protected	CMF ID 333	Change from permissive to protected	99%	Angle/LT Crashes
	Change 5 - section "doghouse" signal head	CMF ID 7697	Change from 5-section "doghouse" protected/permissive left turn to flashing yellow arrow protected/permissive left turn	25%	LT Crashes
11	**Straight Arrows at Freeways**	CMF ID 11507	Install/modify wrong way signage	49%	Other (assumed related to on-ramp turning activity)

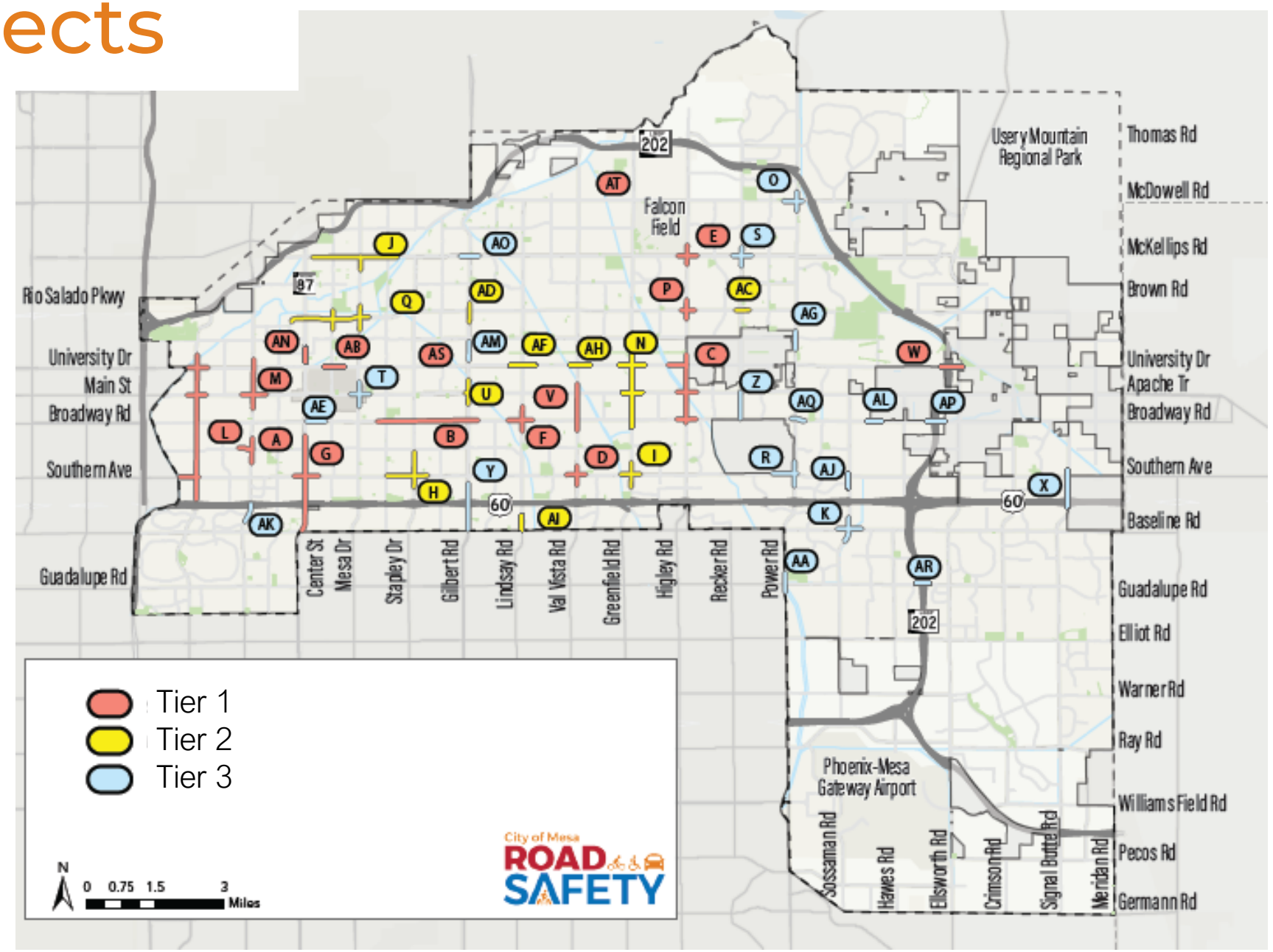
CSAP Projects

Projects were identified, considering:

- HRN Score
- KSI/Mile
- Pedestrian, Bicycle, Motorcycle Crashes
- Predictive Safety Analysis

Project Totals:

- Tier 1 - 16
- Tier 2 - 11
- Tier 3 - 19



Tier 1 HRN Project Sheets

PROJECT A

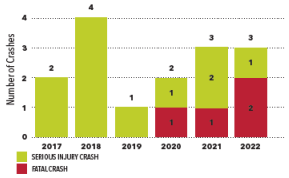
TIER 1

Alma School Road (6th Avenue to Emerald Avenue) including **Pueblo Avenue** (Alma School Road to Standage)

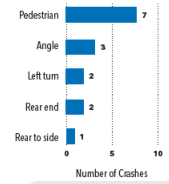
Alma School Road (0.47 miles) has three lanes in each direction, a two-way left-turn lane in the center of the roadway, and painted bike lanes. Pueblo Avenue (0.23 miles) is unstriped, with sufficent width for one lane in each direction and additional pavement. Alma School Road has fronting residential and commercial properties and is supported by transit service. Pueblo Avenue has fronting houses. Within the project limits, there are two signalized intersections and two all-way stops.

SEVERE CRASH SUMMARY

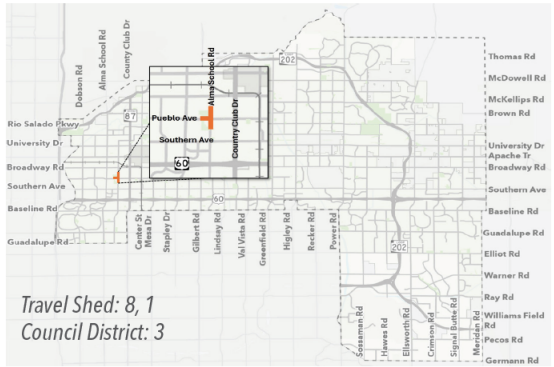
Crashes by Year and Injury Severity



Crashes by Collision Manner



PERIOD CRASH TOTAL	PED/BIKE CRASHES
15	7
FATAL CRASHES	SERIOUS INJURY CRASHES
4	11



METRICS

SEVERE CRASHES PER MILE:	PED & BIKE CRASHES PER MILE:	MOTORCYCLE CRASHES PER MILE:	HIGH RISK NETWORK COLLISION SCORE:
21.43			

DISADVANTAGED POPULATION: **59%**

CORRIDOR LENGTH THAT TOUCHES DISADVANTAGE: **66%**

JUSTIFICATION

This project was selected for short term improvements because it has a HRN score above 9,000. Within the project limits, over the last 6 years evaluated there have been 4 fatal crashes, 11 serious injury crashes, 10 pedestrian crashes, 7 bicycle crashes and 3 motorcycle crashes.

RAISED MEDIANS

Existing Medians: 0 LF
TMP Proposed Medians: 0 LF
CSAP Proposed Medians: 2,490 LF

APPLIED STRATEGIES

- Reduce Risky Movements: 1, 2, 6
- ~~Support Safer Vehicles~~
- Separate Peds and Bikes from Vehicles: 13
- Enhance Crossings: 7, 12
- Design for Safer Speeds: 5, 8

ROW WIDTH

Alma School Road: 80' - 120'
Pueblo Avenue: 80'

SPEED LIMIT

Alma School Road: 40 mph
Pueblo Avenue: 25 mph

ESTIMATED CRASH REDUCTION

The estimated crash reduction for the top three applied strategies are:

60.8%, 1.52 KSI Crashes/Yr

1. 55%, 0.55 KSI Crashes/Yr
7. 43%, 0.14 KSI Crashes/Yr
6. 99%, 0.83 KSI Crashes/Yr

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PROPOSED PROJECT DEVELOPMENT SHEET
PROJECT A

Y2K ENGINEERING, LLC

FEBRUARY 2025

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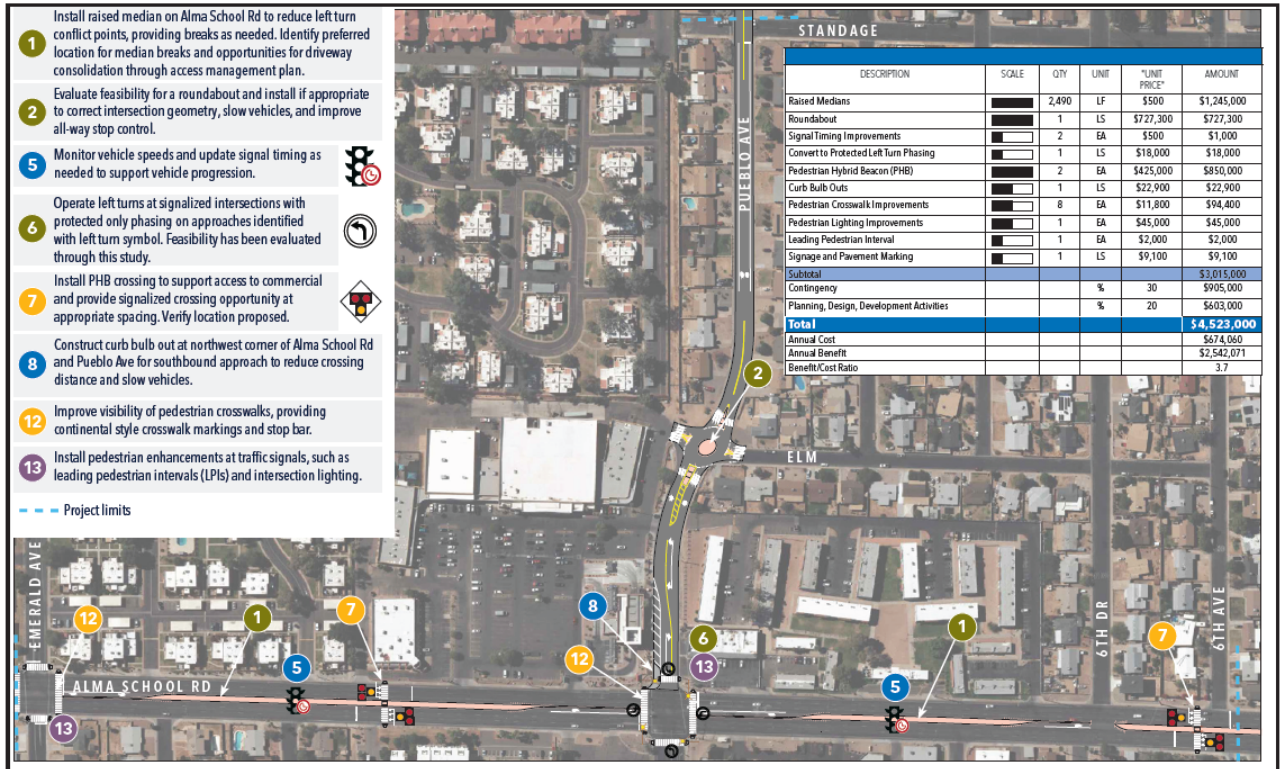
1. Install raised median on Alma School Rd to reduce left turn conflict points, providing breaks as needed. Identify preferred location for median breaks and opportunities for driveway consolidation through access management plan.
2. Evaluate feasibility for a roundabout and install if appropriate to correct intersection geometry, slow vehicles, and improve all-way stop control.
5. Monitor vehicle speeds and update signal timing as needed to support vehicle progression.
6. Operate left turns at signalized intersections with protected only phasing on approaches identified with left turn symbol. Feasibility has been evaluated through this study.
7. Install PHB crossing to support access to commercial and provide signalized crossing opportunity at appropriate spacing. Verify location proposed.
8. Construct curb bulb out at northwest corner of Alma School Rd and Pueblo Ave for southbound approach to reduce crossing distance and slow vehicles.
12. Improve visibility of pedestrian crosswalks, providing continental style crosswalk markings and stop bar.
13. Install pedestrian enhancements at traffic signals, such as leading pedestrian intervals (LPIs) and intersection lighting.

Project limits



DESCRIPTION	SCALE	QTY	UNIT	"UNIT PRICE"	AMOUNT
Raised Medians		2,490	LF	$500	$1,245,000
Roundabout		1	LS	$727,300	$727,300
Signal Timing Improvements		2	EA	$500	$1,000
Convert to Protected Left Turn Phasing		1	LS	$18,000	$18,000
Pedestrian Hybrid Beacon (PHB)		2	EA	$425,000	$850,000
Curb Bulb Outs		1	LS	$22,900	$22,900
Pedestrian Crosswalk Improvements		8	EA	$11,800	$94,400
Pedestrian Lighting Improvements		1	EA	$45,000	$45,000
Leading Pedestrian Interval		1	EA	$2,000	$2,000
Signage and Pavement Marking		1	LS	$9,100	$9,100
Subtotal					$3,015,000
Contingency			%	30	$905,000
Planning, Design, Development Activities			%	20	$603,000
Total					**$4,523,000**
Annual Cost					$674,060
Annual Benefit					$2,542,071
Benefit/Cost Ratio					3.7

DISCLAIMER: THE CONCEPT AS SHOWN WILL NEED TO BE FURTHER DEVELOPED FOLLOWING STANDARD CITY PROJECT DEVELOPMENT PROCESSES, INCLUDING PUBLIC ENGAGEMENT ACTIVITIES.

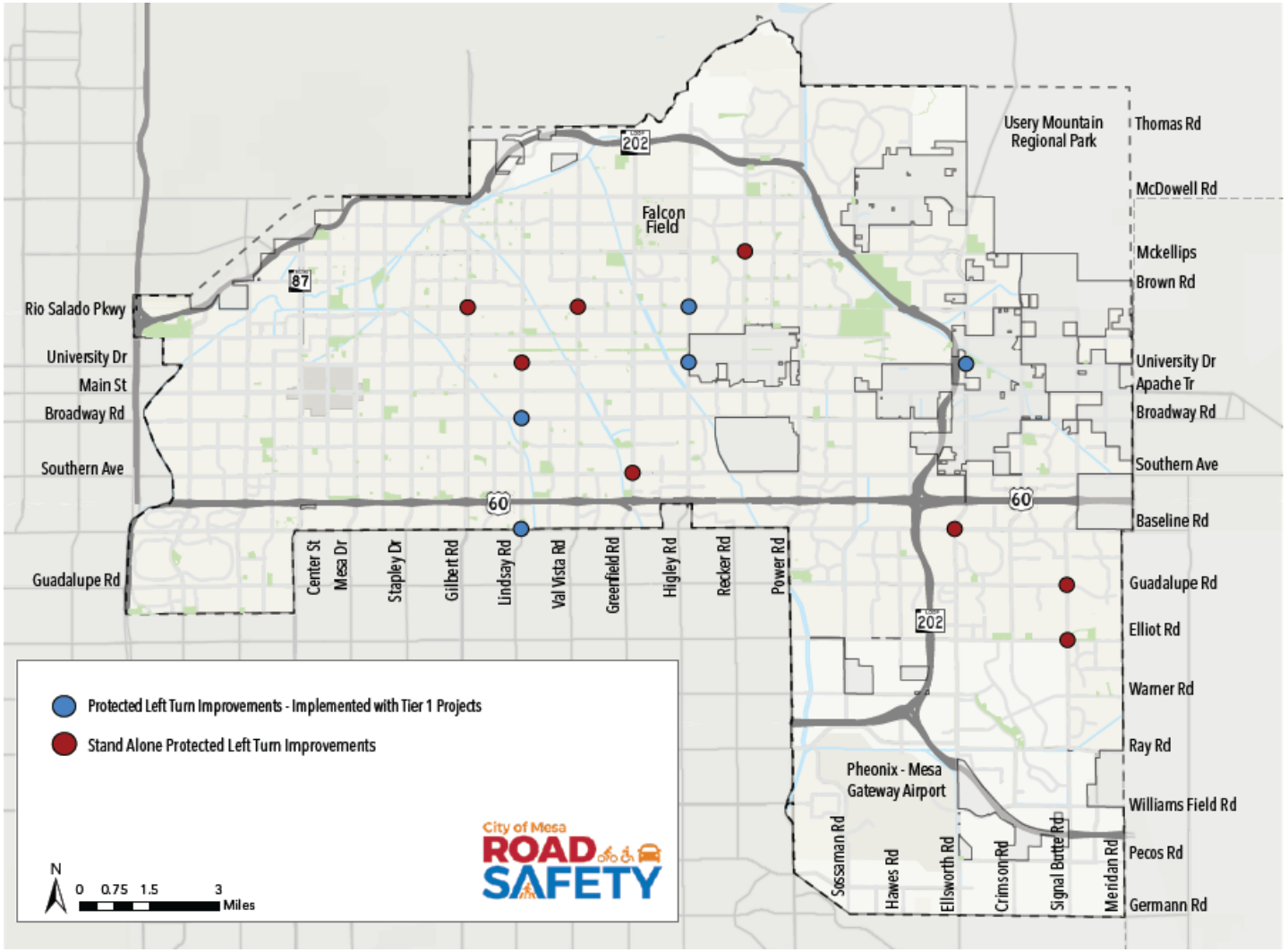
City of Mesa ROAD SAFETY

PROPOSED PROJECT DEVELOPMENT SHEET
PROJECT A

Y2K ENGINEERING, LLC

Left-Turn Phasing Evaluation

- Currently 61 of Mesa's 501 signals are fully protected
- **28 intersections** in the City were selected for left-turn phasing evaluations
- **13 intersections** are recommended for protected left turn phasing implementation
  - These intersections account for **35 KSI crashes in the past 3 years**



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05 Tracking and Monitoring

Tracking Towards The Goal

When Will We Get There?

Initial Years- Gather Information:

How/if strategies are being implemented?

How often/to what extent?

Set Targets Per Strategy:

Example

- 1 location/year
- 1 education campaign effort/quarter

Outcomes

Based on targets, each strategy can be measured for effectiveness

30% reduction by 2030

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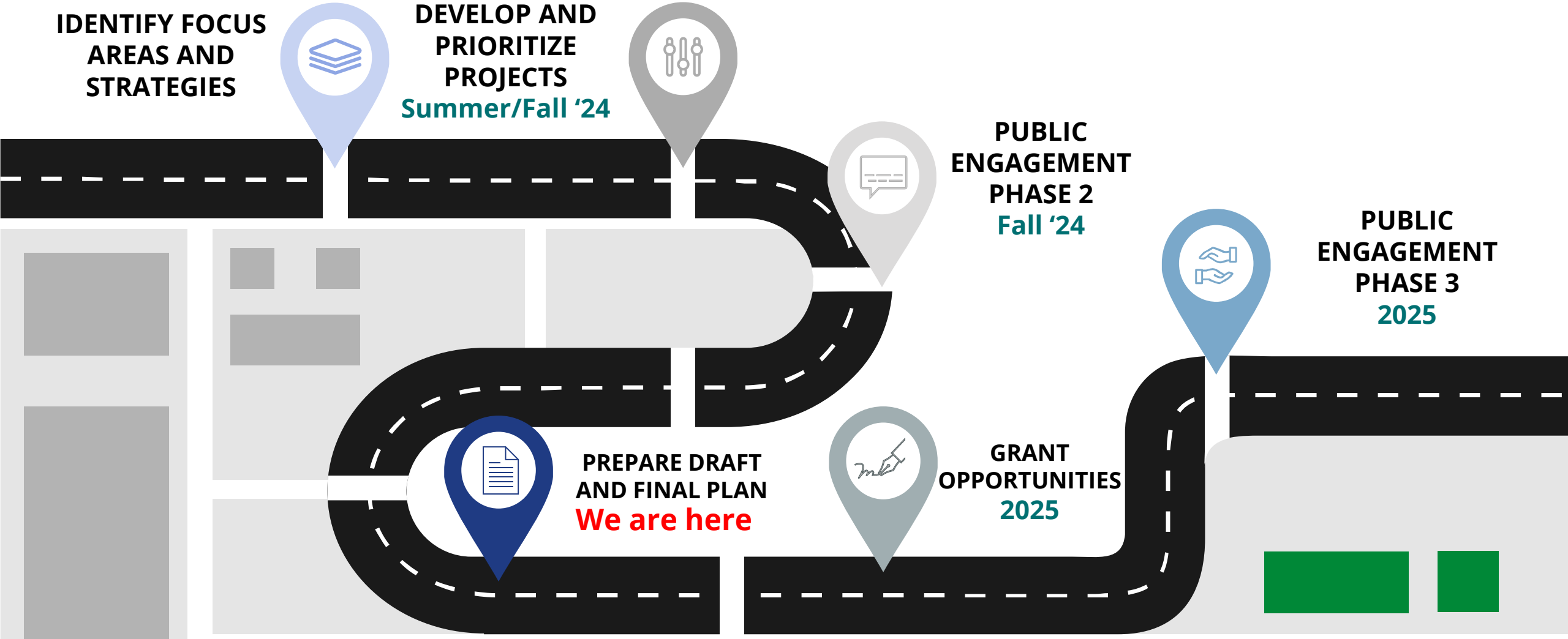
06 Next Steps

NEXT STEPS


IDENTIFY FOCUS AREAS AND STRATEGIES
DEVELOP AND PRIORITIZE PROJECTS
Summer/Fall '24
PUBLIC ENGAGEMENT PHASE 2
Fall '24
PUBLIC ENGAGEMENT PHASE 3
2025
GRANT OPPORTUNITIES
2025
PREPARE DRAFT AND FINAL PLAN
We are here

City of Mesa

ROAD SAFETY

07 Q&A

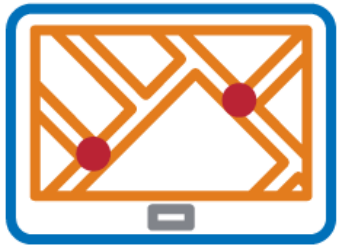
CSAP Building Blocks

Task 1: Project Management	**Task 2:** Discovery and Data Analysis	**Task 3:** Engagement and Collaboration	**Task 4:** Benchmarking Policies and Processes
– Continuous Project Management Team Meetings	– Review Background Documents – Systemic Safety Analysis – High Risk Network – Top Collision Profiles – Equity Analysis	– Five Transportation Advisory Board Meetings – Two Sustainability and Transportation Committee Meetings – Two Phases of Community Touchpoints	– Highlighting Existing Work Efforts – Safe Systems Benchmarking – Alignment with Federal Safety Goals and Guidance – Alignment with Best Practice Design Standards and Guidance

CSAP Building Blocks

Task 5: Strategy And Project Selections

- Establishing Infrastructure Strategies and Developing Actions
- Establishing Non-Infrastructure Strategies and Developing Actions
- Developing Prioritization Methodologies



Task 6: Project Identification

- HRN Project Development
- Systemic Left Turn Phasing Evaluation
- Countermeasure Effectiveness and Benefit/ Cost Ratio
- Developing Performance Review Cycle

Task 7: Prepare Draft and Final Plan

- Identifying Funding Opportunities
- Final Report

Task 8: Post Plan Support and Outreach Services

- Community Outreach
- Safety Pledge

Collision Profiles & Injury Severity

Collision Profiles	Share of Citywide KSI
Failed to Yield violations on streets with 40+ MPH posted speed	31.27%
Collisions involving drivers age 65+	23.47%
Collisions involving alcohol or drugs	21.22%
Motorcycle and vehicle-only collisions involving left turns at signals without fully protected lefts	19.37%

63% *of the time someone is seriously injured or killed, it is one or more of these four collision profiles*

KSI = Killed or Seriously Injured

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Fact Sheet

(Front)

FALL 2024

City of Mesa

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Moving Mesa Towards Safer Streets

The City of Mesa is committed to **a 30% reduction in fatalities** and **serious injuries** caused by motor vehicle crashes **by 2030**. To achieve this goal, the City is developing a **Comprehensive Safety Action Plan**.

The Action Plan is for ALL roadway users who live, work or play in the City.

The City asked the community (including drivers, pedestrians and bicyclists) about their transportation and mobility safety concerns from **April 3 – May 31, 2024**.

2,559 people completed the survey

Common themes included:

- **42%** of respondents agreed that Mesa streets are **safe**.
- Most respondents felt red-light running and distracted driving were the behaviors of **greatest concern**.
- Respondents indicated that intersections, main roads and turn lanes are the areas with the **highest perceived risk**.
- Most respondents said they would feel safer by **improving enforcement** of current traffic laws and **improving the design** of roadways, bike facilities and sidewalks.

THIS PLAN WILL:

- EVALUATE ALL TRANSPORTATION MODES
- INCORPORATE PUBLIC INPUT
- EMPLOY DATA-DRIVEN SOLUTIONS
- EDUCATE THE COMMUNITY
- INTEGRATE EQUITY
- ESTABLISH COMMITMENT
- IMPLEMENT TARGETED SOLUTIONS

Fact Sheet
(back)

NEXT STEPS:

City of Mesa ROAD SAFETY
Moving Mesa Towards Safer Streets

Based on public feedback and technical analysis, the project team is identifying strategies to build a community culture of safety and save lives. These strategies will be evaluated for implementation in the next phase of the project. A key piece of the evaluation process is community feedback on plan elements. The public can share their input through an online survey this fall.

Strategies being evaluated include:

Managing traffic flow and providing drivers up-to-date information with enhanced technology and communication systems to reduce the risk of crashes.

Installing and enhancing mid-block crossings for pedestrians and bicyclists.

Encouraging safer speeds on Mesa roadways through infrastructure and enforcement enhancements.

Reducing turning vehicle conflict points by installing raised medians, particularly near intersections.

Enhancing education on road safety risks for community members under 25 and over 65.

Re-building traffic signals or expanding intersections to be able to protect left turn phases to reduce conflicts.

STAY ENGAGED WITH US!

Give Feedback – Provide your feedback on plan elements through a survey on the project website and at upcoming community events this fall.

Get Involved - Sign up for information and updates on the website.

Spread the Word - Share the website and information about the Action Plan with your family, friends, co-workers and neighbors!

MesaSaferStreets.com Transportation.Info@mesaaz.gov 480.644.2160

SCAN ME

Sample Strategy & Action - Infrastructure

Separate Pedestrians & Bikes From Vehicles

Install buffered and separated bicycle lanes, including pavement markings, green paint, and physical barriers, where there is right of way or pavement space to accommodate a buffer or separation.

Left-Turn Phasing Evaluation

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  - These intersections account for 35 KSI crashes in the past 3 years