

# VISION ZERO



## DENTON ACTION PLAN



VZTF Meeting #3 Sign-In



## VISION ZERO TASK FORCE MEETING #3

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Training Room 1, 2, and 3 | Denton Development Services Building  
9:00 – 11:00 AM



## AGENDA

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1. Project Updates
2. Pop-Up Event Results
3. High Injury Network Updates & Study Corridors
4. Safety Countermeasures

### **Break**

5. Safe Systems Approach
6. Homework Discussion
7. Pillars Activity
8. Next Steps

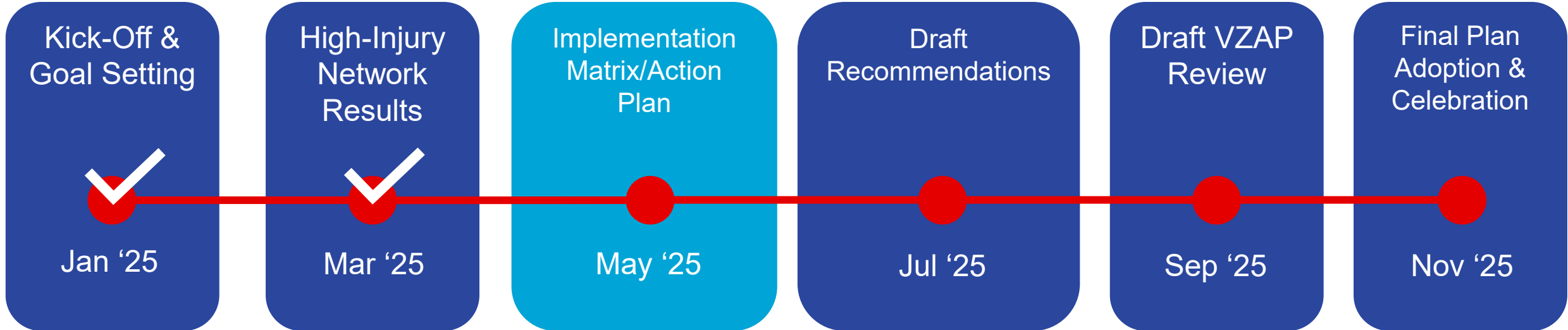


# PROJECT UPDATES

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# VISION ZERO ACTION PLAN TIMELINE



## MISSION STATEMENT

“Our mission is to create a safe, accessible, and sustainable transportation future for all Denton residents. Through data, community engagement, and innovation, we aim to eliminate fatalities and serious injuries, ensuring a network that protects and serves everyone.”



# DRAFT VISION ZERO TARGET

Alignment with TxDOT  
50% reduction by 2035  
100% reduction by 2050  
Add incremental goals





# POP-UP EVENT RESULTS

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# EXPLORIUM TOUCH A TRUCK

Saturday, May 10<sup>th</sup> at C.H. Collins Athletic Complex

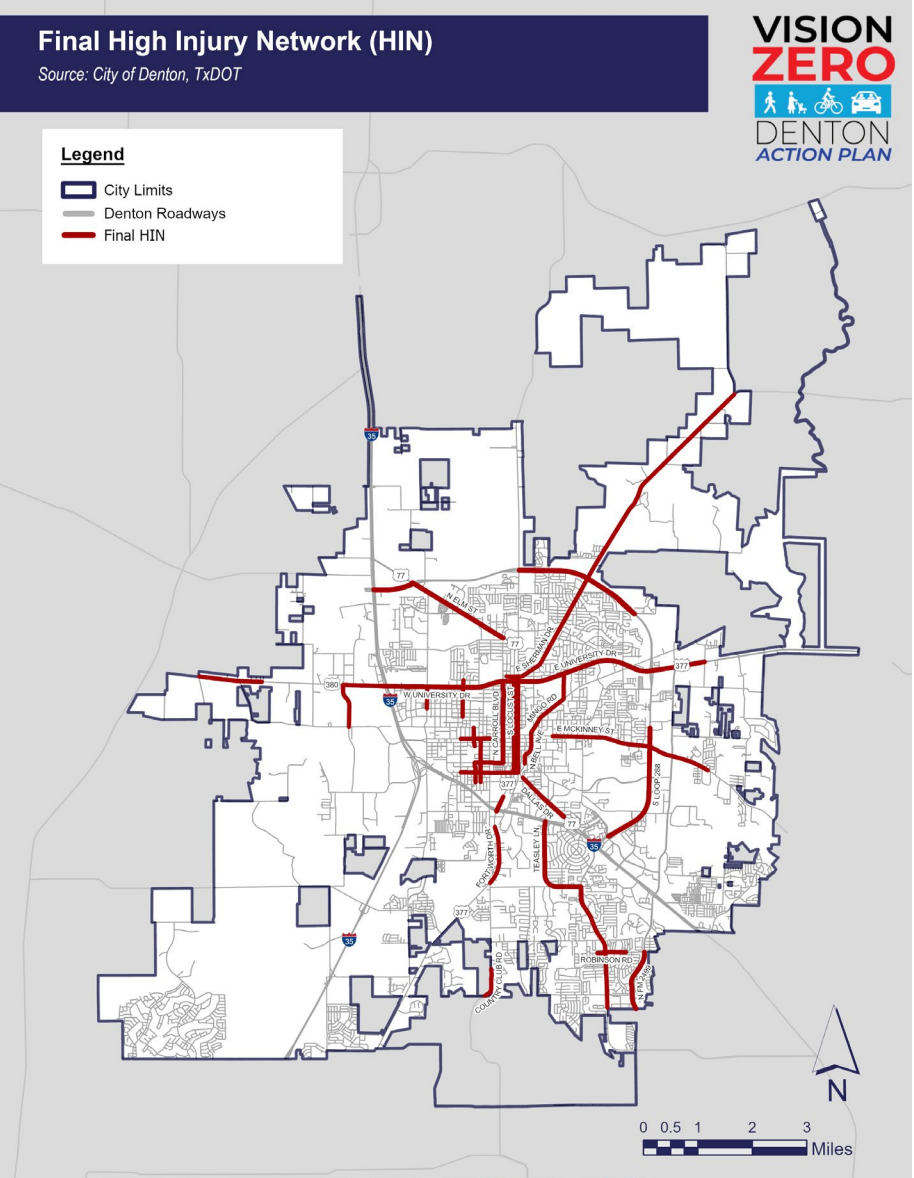
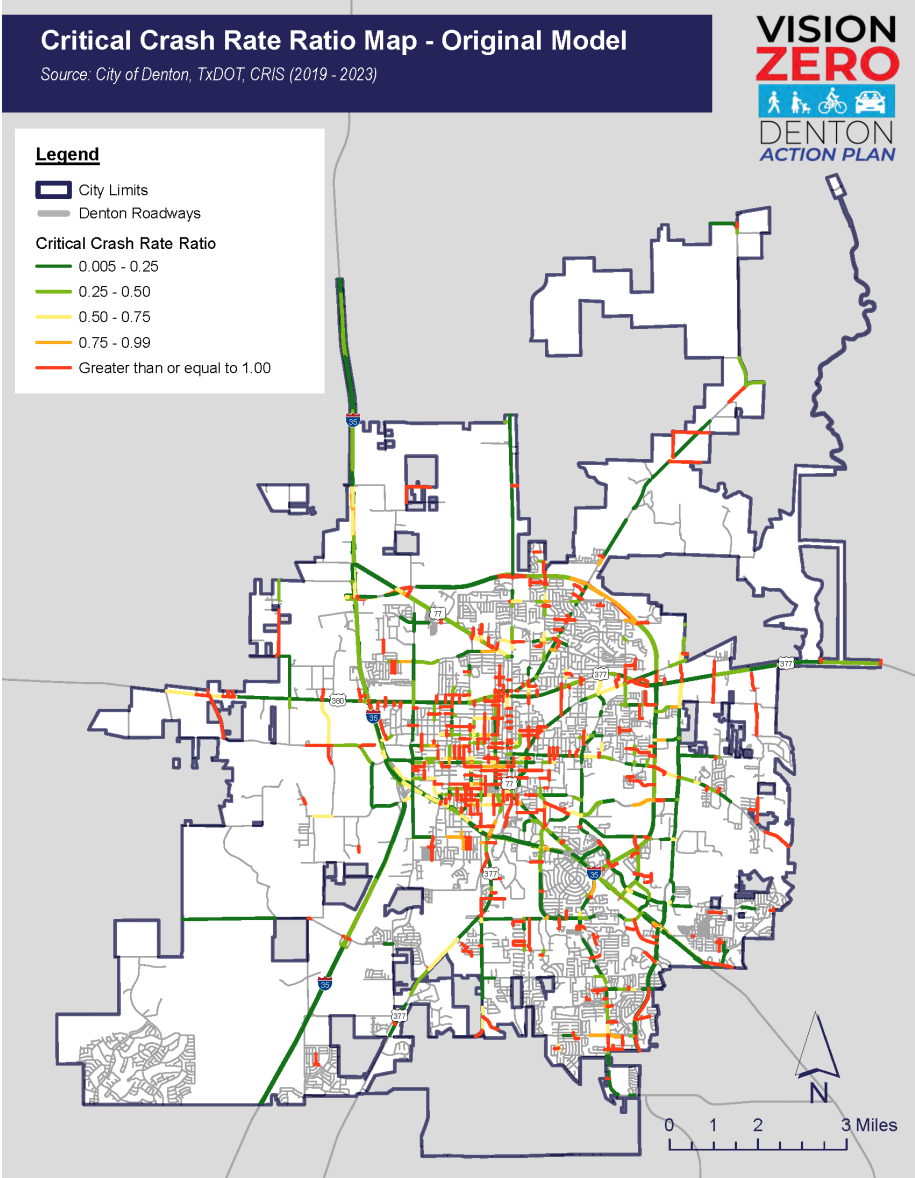




# HIGH INJURY NETWORK UPDATES & STUDY CORRIDORS

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# CRASH RATE RATIO VS. FINAL HIGH INJURY NETWORK

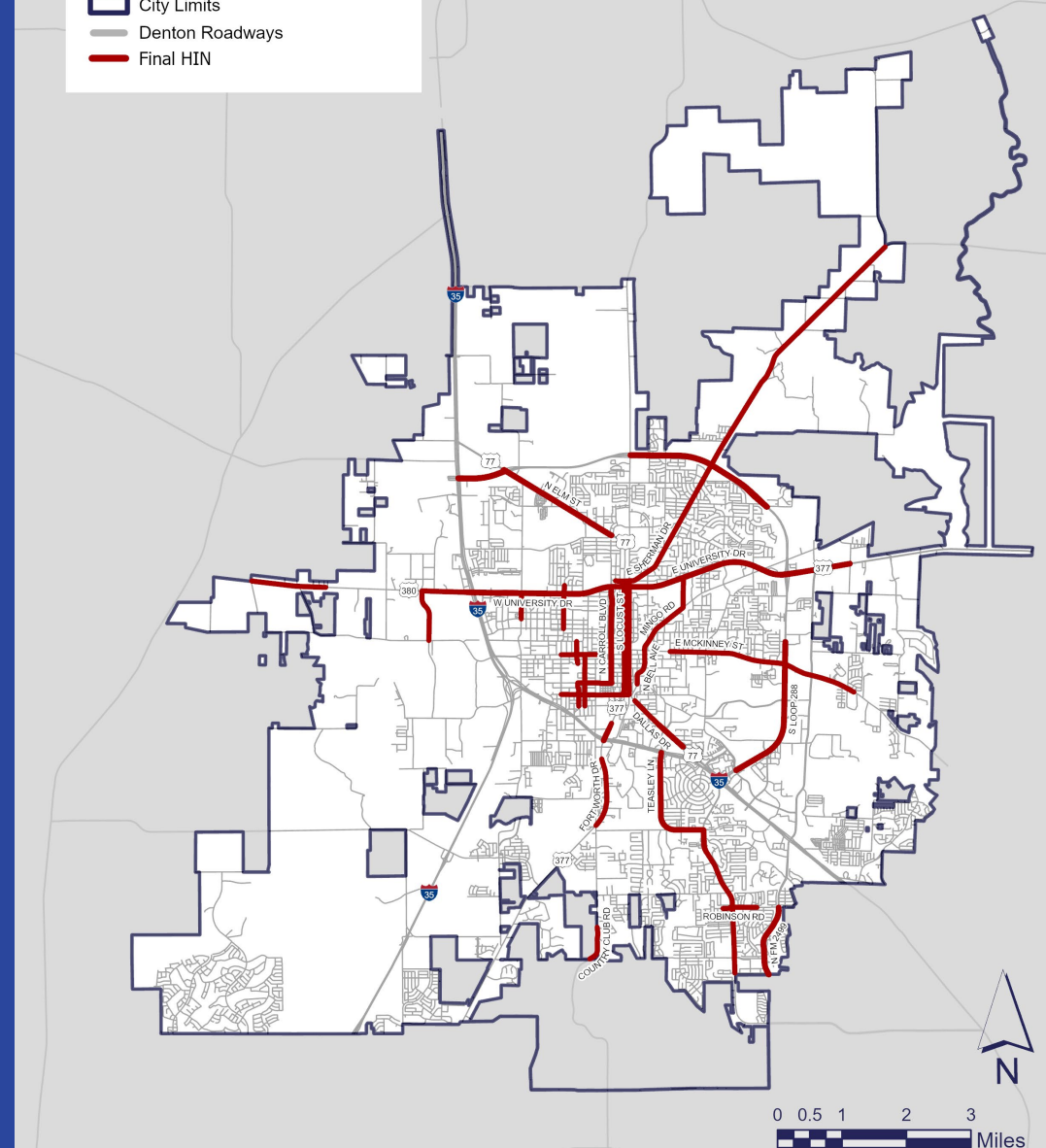


# UPDATED HIGH INJURY NETWORK (HIN)

- 9.4% of total Road Network
- 66.9% of Fatal (K), Suspected Severe Injury (A), & Suspected Minor Injury Crashes (B)
- 66.7% of Fatal Crashes
- 64.7% of Suspected Severe Injury Crashes
- 67.4% of Suspected Minor Injury Crashes

**Legend**

- City Limits
- Denton Roadways
- Final HIN







# STUDY CORRIDORS

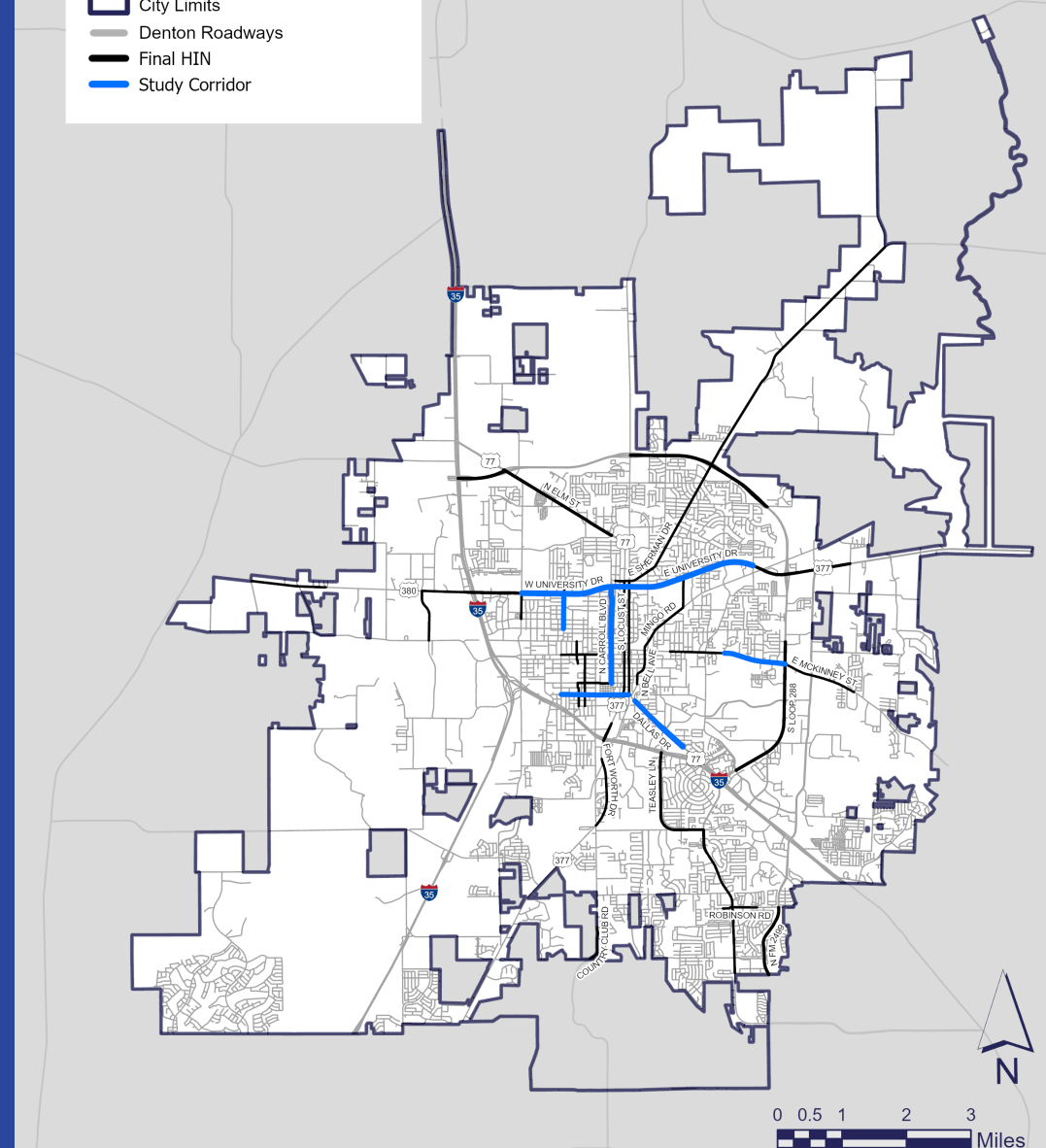
Corridor	Limits		Length (mi.)	Class	Crashes				Peak Volume	Peak CCRR
	Origin	Ending			K	A	B	Total KAB Crashes		
W University Dr	N Bonnie Brae St	Old North Rd	3.7	Primary Arterial	4	22	107	133	31,453	3.13
N. Carroll Blvd	US 380	W Highland St	1.5	Primary Arterial	1	3	53	57	28,998	3.23
Eagle Dr	Ave C	Locust St	1.1	Secondary Arterial	0	5	52	57	16,263	3.20
Dallas Dr	Johnson St	Rio Grande Blvd	1.0	Primary Arterial	2	3	27	32	26,716	3.16
Malone St	US 380	Panhandle St	0.7	Collector	0	2	8	10	30,979	2.81
E Mckinney	Audra Ln	Loop 288	2.1	Primary Arterial	0	4	23	27	33,667	3.37

## Selected Study Corridors

Source: City of Denton, TxDOT

### Legend

-  City Limits
-  Denton Roadways
-  Final HIN
-  Study Corridor





# SAFETY COUNTERMEASURES

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## COUNTERMEASURES

- Safety countermeasures refer to specific strategies or interventions endorsed by the Federal Highway Administration to enhance roadway safety and reduce the likelihood of accidents or fatalities.
- Each countermeasure is assigned a Crash Modification Factor (CMF) score. CMFs represent the proportion of crashes that can be expected after implementing a countermeasure.

Crashes

100

CMF

.6

Expected Crashes

60



# RAISED MEDIANS CMF 0.29

- Raised barriers in the center portion of the street or roadway
- Functional & aesthetic value
- They are most useful on high volume, speed, and driveway density roads



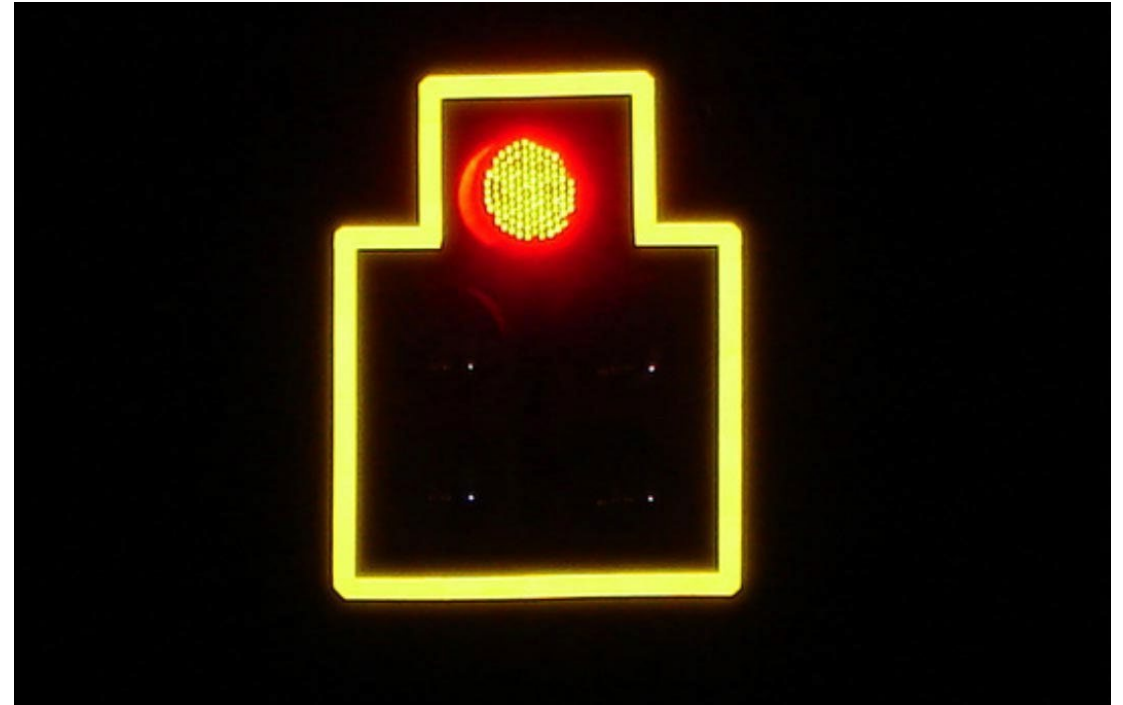
# HIGH CONTRAST LANE MARKINGS CMF 0.75

- Road markings that are designed to be easily distinguishable from the surrounding pavement
- Improve visibility and clarity for drivers
- Can reduce lane departure, intersection, distracted driving, and impaired driving-related crashes



## RETROREFLECTIVE BACKPLATES CMF 0.85

- Backplates made by framing a signal head with a 1-to-3-inch yellow retroreflective border
- Improved visibility of signals, especially at night
- Can assist with intersections, distracted driving, and impaired driving



# ROUNDBABOUTS

## CMF 0.59

- Intersection with a circular configuration that safely and efficiently moves traffic
- Reduce vehicle speeds, establish clear right-of-way, minimize conflict points
- Contribute to a better flow in traffic



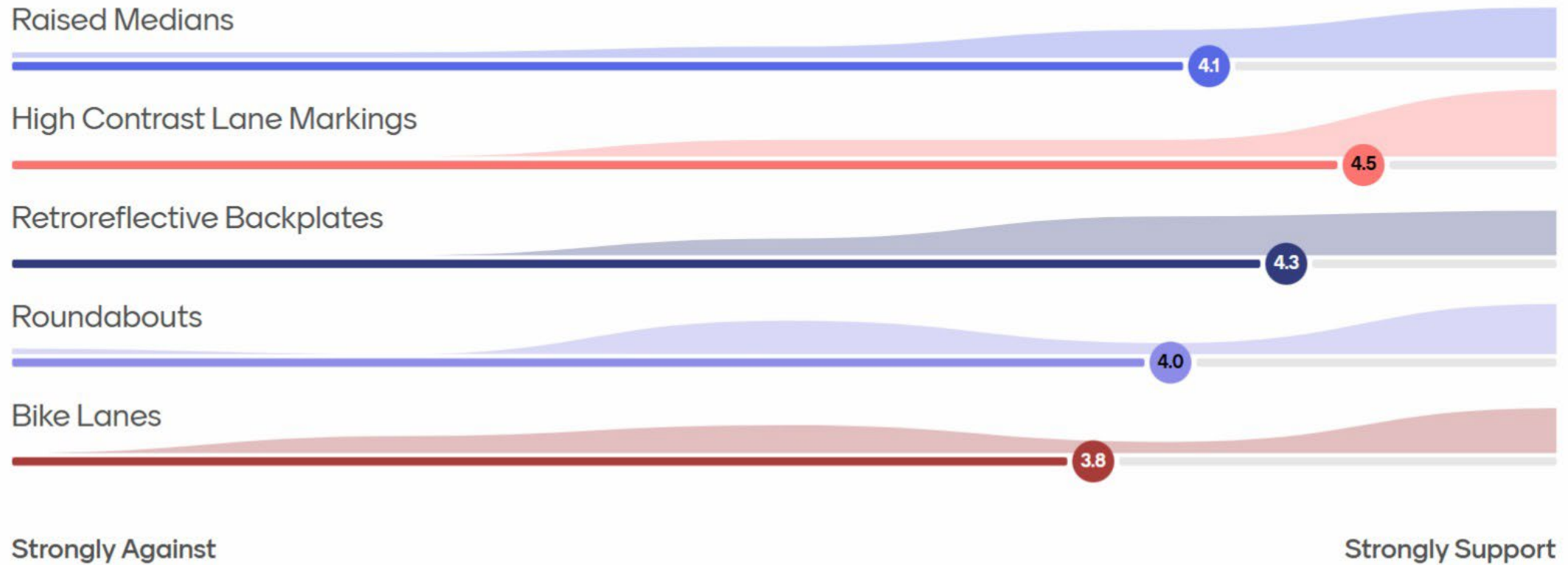
# BIKE LANES

## CMF 0.435

- Designated area of a roadway that is reserved for bicycles
- Reduce conflicts between cyclists and motorists
- Encourage multimodality

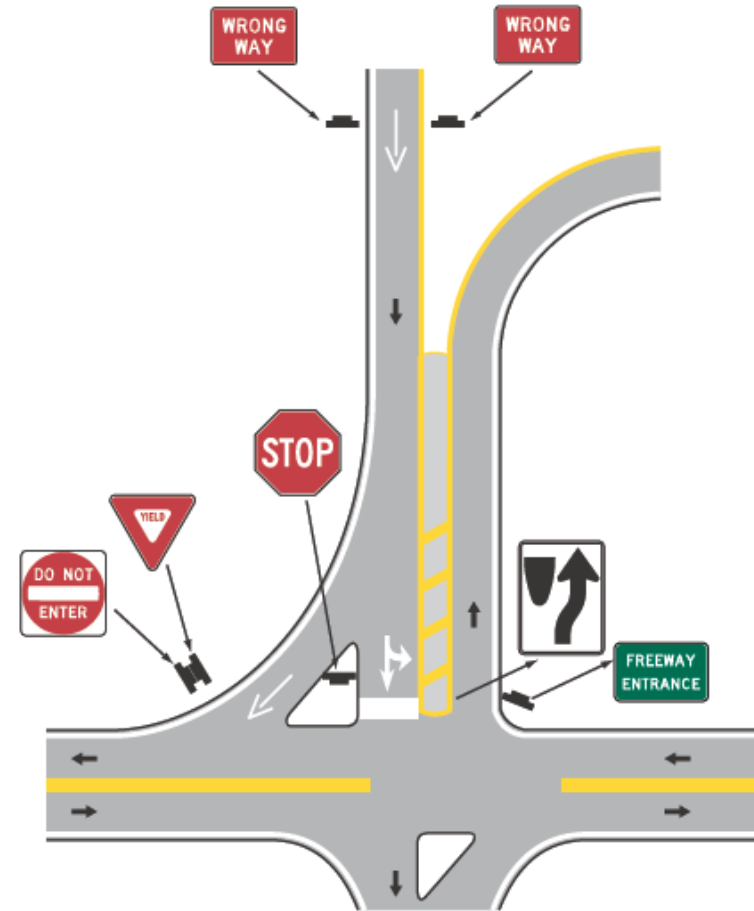


# Level of Support



# LANE DESIGNATION MARKINGS AND SIGNS CMF 0.75

- Pavement markings are painted or applied symbols, lines, and patterns on road surfaces to convey traffic regulations, guidance, and warnings to drivers
- Reduce confusion, improve flow, minimize the risk of crashes



## RECTANGULAR RAPID FLASHING BEACON (RRFB) CMF 0.31

- RRFBs consist of two, rectangular-shaped yellow indications, each with a light-emitting diode (LED)-array-based light source
- Low-maintenance improvement
- Should be deployed at targeted locations



## IMPROVING SIGNING AND VISIBILITY AT SIGNALS CMF 0.732

- Improvements may include lighting, high-visibility crosswalks, and signing and pavement markings
- Low-cost improvements that can be deployed on a large scale



# SIDEWALKS

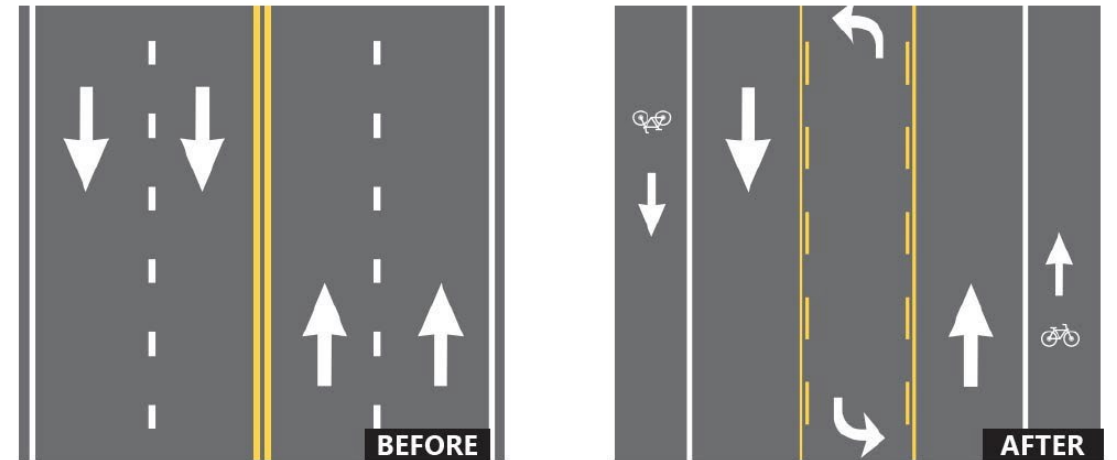
## CMF 0.598

- Defined space or pathway for use by a person traveling by foot or using a wheelchair
- Improve the safety and mobility of pedestrians
- Increased separation increases safety and comfortability



# ROADWAY RECONFIGURATION CMF 0.53

- A Roadway Reconfiguration typically involves converting an existing four-lane undivided roadway to a three-lane roadway consisting of two through lanes and a center two-way left-turn lane
- Opportunity to repurpose existing ROW



# Level of Support

Lane Designation Markings & Signs

4.5

Rectangular Rapid Flashing Beacon

4.0

Improving Signing & Visibility at Signals

4.3

Sidewalks

4.6

Roadway Reconfiguration

3.6

Strongly Against

Strongly Support

## SPEED FEEDBACK SIGNS CMF 0.95

- System of speed measurement and feedback sign alerting and warning drivers if exceeding the speed limit
- Feedback signs may display the actual speed or a warning message



## MIDBLOCK CROSSINGS CMF 0.45

- Designated pedestrian crossings away from an intersection
- Inexpensive method to increase pedestrian safety
- Encourage pedestrians to use dedicated crossings
- Alert drivers to pedestrian crossings



## PEDESTRIAN REFUGE ISLAND CMF 0.44

- Pedestrian Refuge Island shortens pedestrian exposure when crossing an intersection
- Most useful at intersections with high traffic volumes



# CURB EXTENSIONS

## CMF N/A

- Curb extensions visually and physically narrow the roadway, creating safer and shorter crossings for pedestrians while increasing the available space for pedestrians or other amenities
- Help with speed reductions, and increased safety



## WIDER EDGE LINES CMF 0.63

- Increasing edge line striping width
- Wider edge lines increase lane marking visibility
- Effective low-cost method



# Level of Support

Lane Designation Markings & Signs

4.5

Rectangular Rapid Flashing Beacon

4.0

Improving Signing & Visibility at Signals

4.3

Sidewalks

4.6

Roadway Reconfiguration

3.6

Strongly Against

Strongly Support

VZTF Meeting #3 Sign-In



**BREAK**

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# SAFE SYSTEM APPROACH

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# SAFE SYSTEM – A CHANGE IN APPROACH

## Traditional Safety Principles



Prevent  
Crashes



Improve  
Human  
Behavior



Control  
Speeding



Individuals are  
Responsible



React Based  
on Crash  
History



## Safe System Principles



Prevent Death  
and Serious  
Injury



Design for  
Human Mistakes  
and Limitations



Reduce the  
Impact of  
Crashes



Shared  
Responsibility



Proactively  
Identify and  
Address Risks

# SAFE SYSTEM ELEMENTS



**Safe road users**



**Safe vehicles**



**Safe speeds**



**Safe roads**



**Post-crash care**

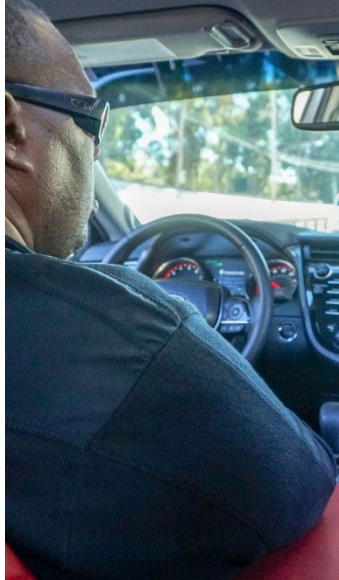
# SAFER PEOPLE



**Walk**



**Bike**



**Drive**

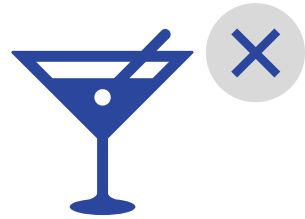


**Transit**

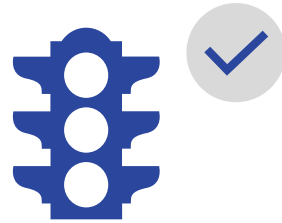


**Other**

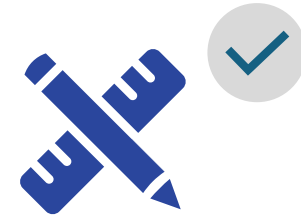
# SAFER PEOPLE



**Not  
distracted or  
impaired**



**Follow rules**



**Act within the  
limits of the  
road design**

# SAFER VEHICLES



- **Active safety**

- Measures to reduce the chance of a crash occurring
  - Mass of vehicle
  - Lane departure warning
  - Autonomous emergency braking

- **Passive safety**

- Protective systems for when crashes do occur
  - Seatbelts and airbags
  - Crash-absorbing vehicle crumple zone

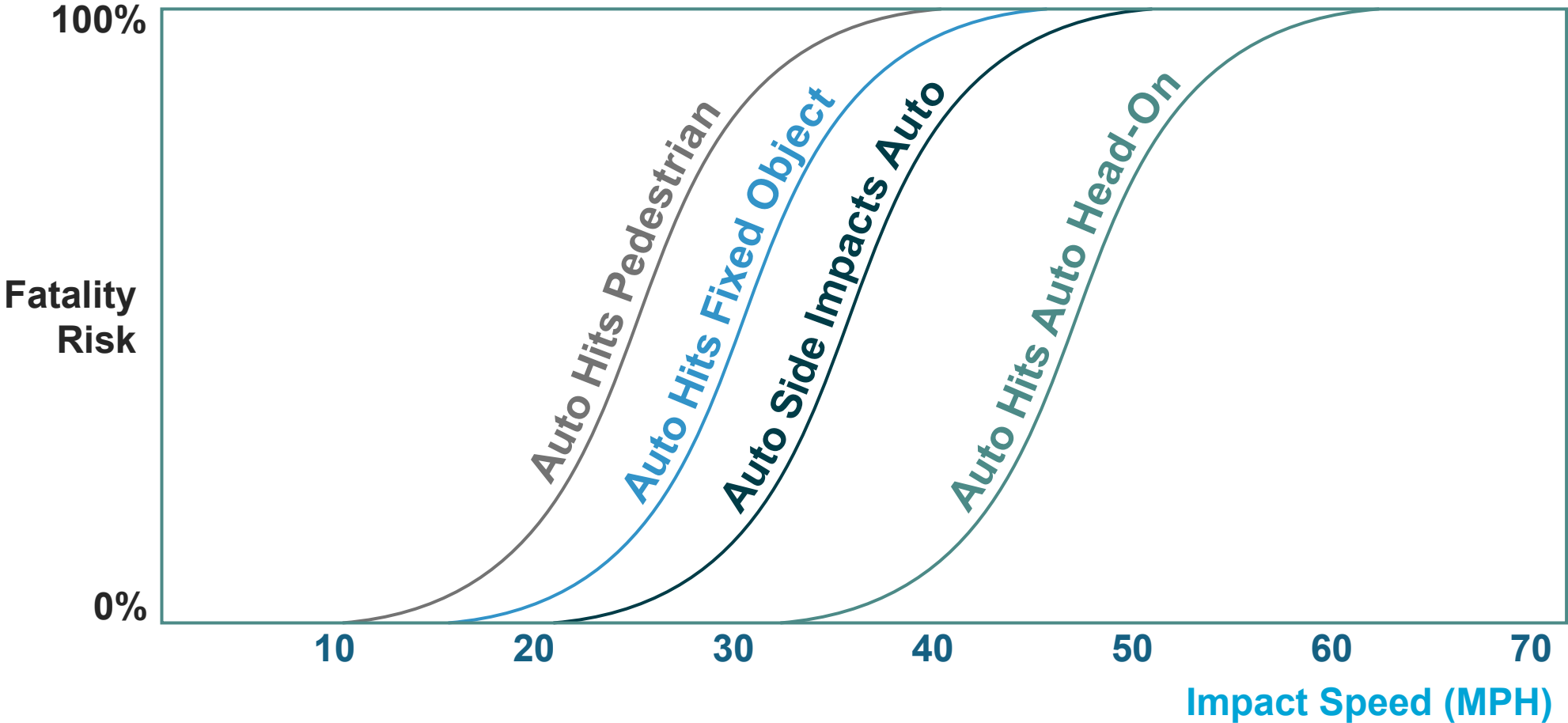
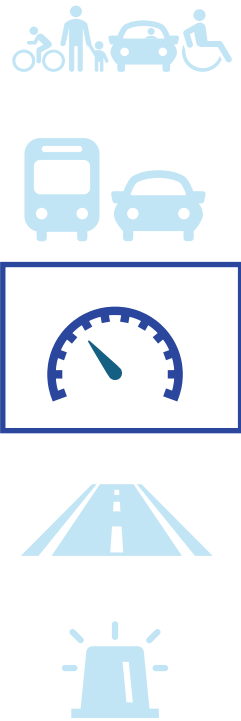
- **Other road user safety**

- Measures that protect other road users
  - Bicyclist and pedestrian detection
  - Vehicle size and design

- **New technology**

- Leveraging connected and automated vehicle (CAV) technology to improve safety

# SAFER SPEEDS



## SAFER SPEEDS

Hit by a vehicle  
traveling at

23

MPH

10% risk of death



Hit by a vehicle  
traveling at

42

MPH

50% risk of death



Hit by a vehicle  
traveling at

58

MPH

90% risk of death



# SAFER SPEEDS

- This requires redesigning streets with lower target speeds built in, lowering speed limits, and enforcing limits to ensure that people follow them



# SAFER ROADS



**Safe roads are designed and operated to:**

- 1. Prevent crashes**
- 2. Keep impacts on the human body at tolerable levels**

# SAFER ROADS: PREVENTING CRASHES



Preventing crashes involves:



**Separating  
users in space**



**Separating  
users in time**



**Increasing  
attentiveness  
and awareness**

# SAFER ROADS: CRASH KINETIC ENERGY



Managing crash kinetic energy involves:



**Managing speed**



**Manipulating mass**



**Manipulating crash angles**

# SAFER ROADS: THE ROADWAY SYSTEM



Safe roads include all aspects of the roadway system:



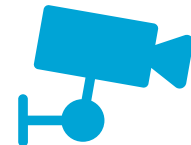
**Design**



**Construction**



**Maintenance**



**Operation**

# POST CRASH CARE



Vital post-crash actions include:



**First responders**



**Medical care**



**Crash investigation**



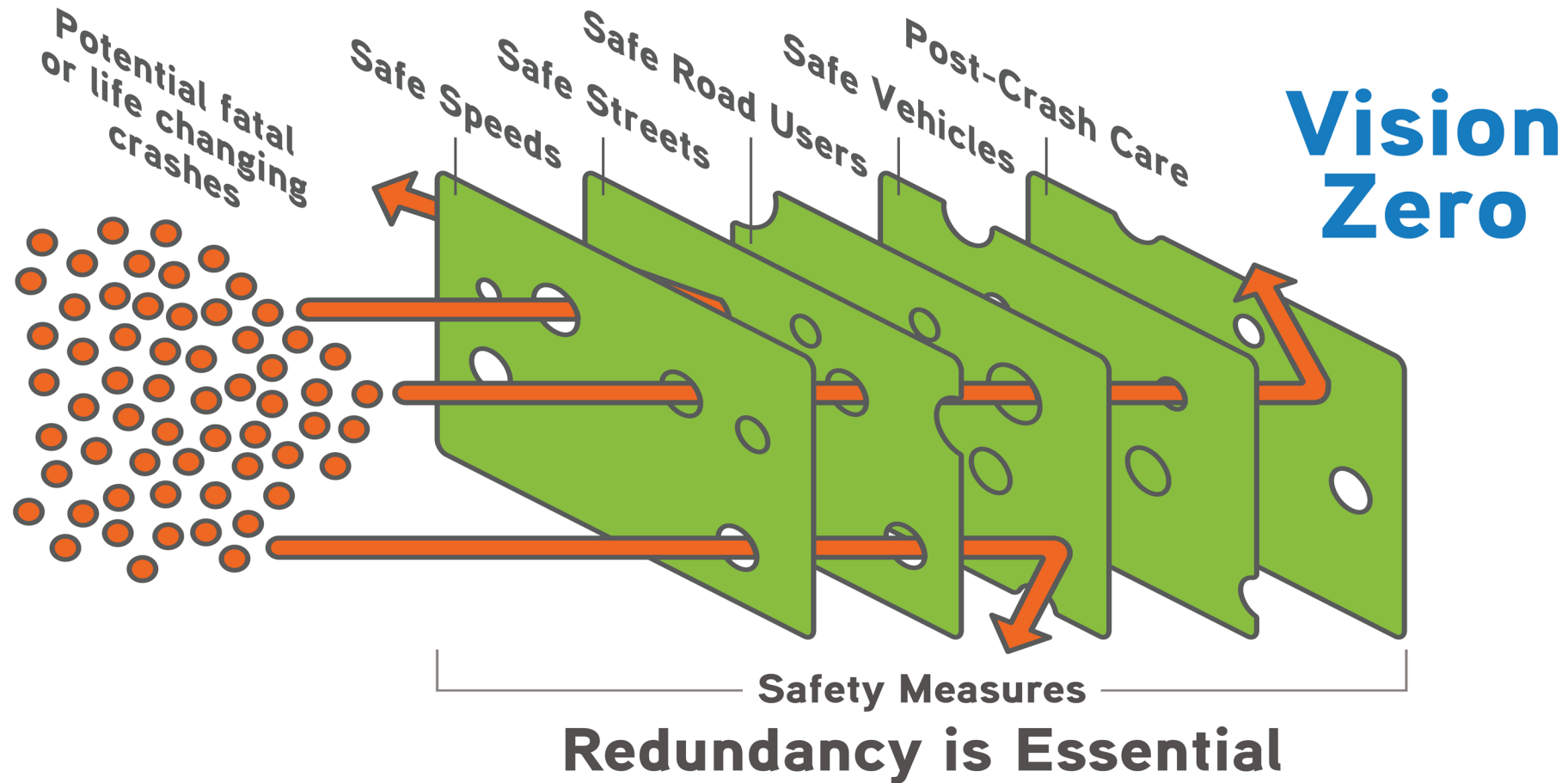
**Traffic incident management**



**Justice**

# SAFE SYSTEM APPROACH

The loss of life and injury on our streets is not inevitable, it is preventable.





# HOMework DISCUSSION

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# HOMEWORK

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- Review Toward Zero Deaths (TZD) actions and select the top 20 that would make the most sense within Denton
- Use the Interactive Web Map to suggest changes to the High Injury Network (HIN)



# SURVEY SUMMARY CHARTS

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**Policies with over 50% of votes incorporated these themes:**



**Speed**



**Vulnerable  
Populations**



**Post Crash Care**



**Commercial Motor Vehicles  
(CMVs) & Work Zones**



**Planning  
Integration**



**Roadway Design**

# SURVEY SUMMARY CHARTS

## Speed



Targeted Enforcement

Encourage Safer Speeds

Roadway Design to Decrease Speeding

## Vulnerable Populations



Focus on Kids & Elderly

Active Transportation Plan Improvements

Educational Programs for Children

## Post Crash Care



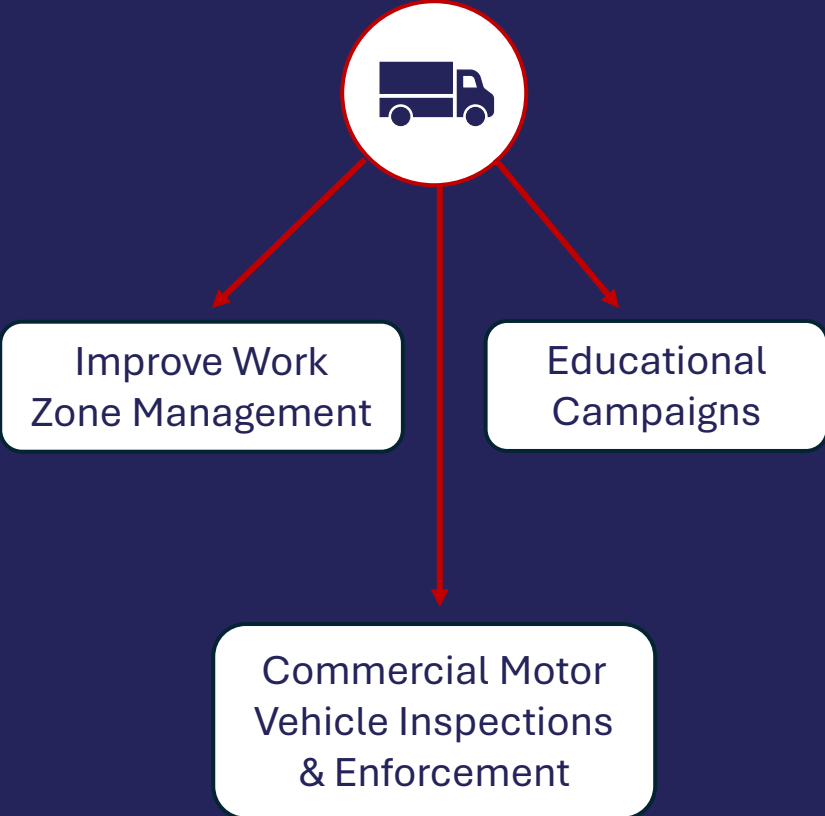
Upgrade Communication Equipment

Access to Intelligent Transportation Systems

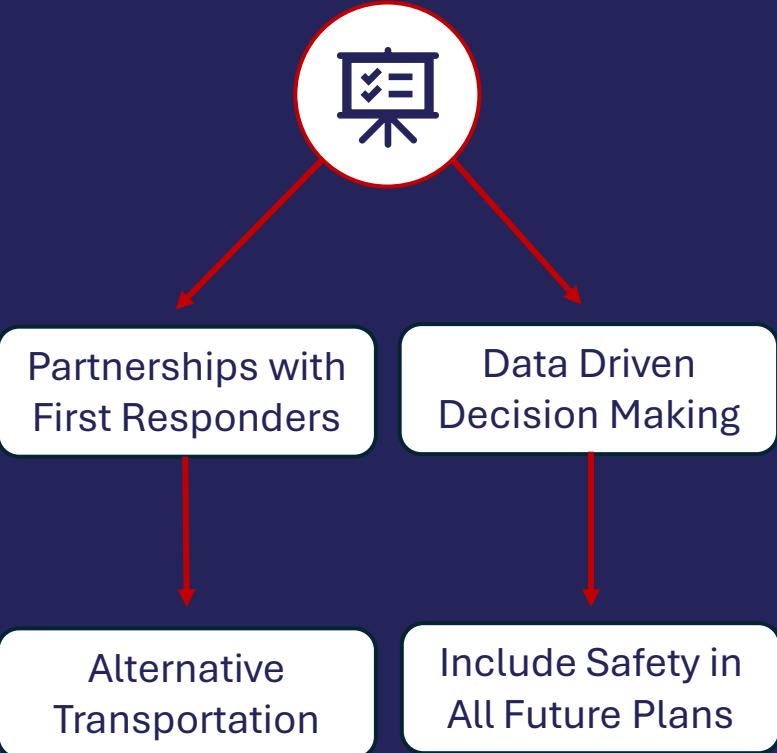
EMS Preemption

# SURVEY SUMMARY CHARTS

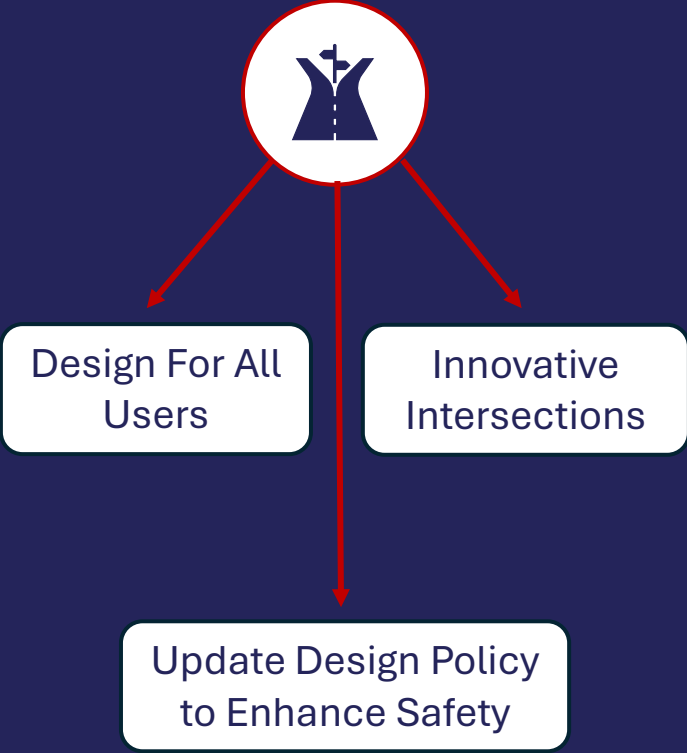
## Commercial Motor Vehicles (CMVs) & Work Zones



## Planning Integration



## Roadway Design





# PILLARS ACTIVITY

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# FIVE PILLARS OF THE SAFE SYSTEMS APPROACH



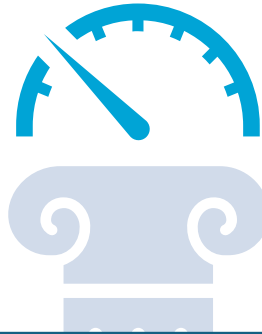
## Safer People

- Vulnerable Road Users
- Impaired Driving
- Occupant Protection
- Distracted Driving
- *Teen Drivers*
- *Older Drivers*



## Safer Vehicles

- *Vehicle Technology*
- *Crashworthiness*



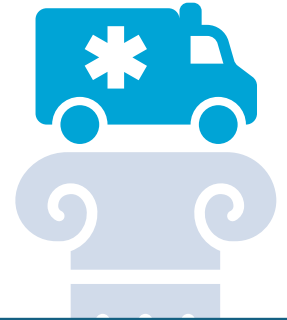
## Safer Speeds

- Speed Related
- *Aggressive Driving*
- *Target vs Design Speed*



## Safer Roads

- Roadway & Lane Departures
- Intersection Safety
- *Intelligent Transportation Systems (ITS) & Advanced Technology*

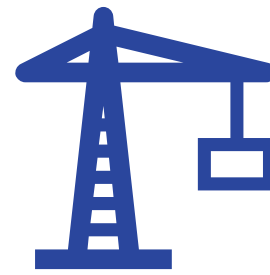


## Post-Crash Care

- *Post Crash Care*
- *911 Access*
- *Incident Detection*
- *EMS Response & Capacity*
- *On-Scene Medical Care*
- *Ambulances*

# STRATEGIES/ ACTIONS

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## Strategy & Project Selections

### Strategy Examples

- Expand on the neighborhood traffic calming program
- Update design standards to address deficiencies that may contribute to roadway/lane departure crashes
- Create a Safe Routes to School Partnership Program
- Develop a campaign strategy to remind drivers to use safe driving behaviors at intersections
- Expand and update the use of emergency vehicle preemption technology
- Develop a process that would support the installation of more midblock crosswalks at targeted locations with high pedestrian traffic

# ACTIVITY INSTRUCTIONS

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## Part 1: Breakout Groups

- Split into 5 groups
  - One group for each “Pillar”
- Spend 15 minutes brainstorming policy/program actions that support your group’s “Pillar”
- Share your group’s actions

## Part 2: Open Gallery

- Add actions to the other “Pillars”
- Vote on actions based on your level of support
  - Red
  - Green



# NEXT STEPS

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# NEXT STEPS

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July 16, 2025

- **VZTF Meeting #4:** Draft Recommendations

September 17, 2025

- **VZTF Meeting #5:** Draft VZAP Review

November 19, 2025

- **VZTF Meeting #6:** VZAP Final Plan & Recognition of the VZTF

# VISION ZERO



## DENTON ACTION PLAN

THANK YOU

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### Project Management Team Contact Information

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