



Safer Roads Key Area Meeting Summary



Date/Time:	Thursday, November 9, 2023 10:00 AM – 11:30 AM
Chair:	Lacey Tisler, NDOT Traffic Safety Engineering
Vice Chair Safe Speed:	Todd Hartline, DPS Office of Traffic Safety
Vice Chair Lane Departures:	Shawn Paterson, NDOT Design
Vice Chair Intersections:	Rod Schilling, NDOT Traffic Operations
Vice Chair Work Zones:	Casey Sylvester, NDOT Traffic Operations

Attendees

- See attached for the meeting attendees.

Topics

- **Summary from Last Quarterly Meeting** – *There were no comments on the summary from the last quarterly meeting.*
- **Monthly Fatality Data Update** – *The September state fatal report is attached. Nye County has a large number of crashes in 2023 compared to 2022.*
- **Preliminary Substance Involved Fatalities by County** – *The June report is attached.*
- **TRCC** – *An overview of the last meeting on September 19 was provided. There are a number of grants that are being pursued to aid with better collection of data. The group is working towards updating the SHSP crash data dashboard on an annual basis and adding consumption. The group is also moving forward on crash facts documents beyond the dashboard. Next meeting is on December 12 at 1:30 PM.*
- **Agency Updates**
 - **NDOT Traffic Safety:** *The Vulnerable Road Users Assessment will be released soon. Vulnerable Road Users include everyone who bikes, walks, or rolls outside of a vehicle.*
- **Presentation on Human Factors (Stephen Ratke)**
 - *The built environment shapes driver behavior, which includes psychological principles, target speed, high levels of caution, engaged attention, and physics as an input. There is a relationship between attention, caution, and speed.*
 - *Operation field can be defined by how eye tracking occurs at various speeds. The 60-foot width is a typical distance for what drivers are scanning while driving. However, the field of view decreases and the speed increases.*
 - *Most driving is done near at hypnotic state. Above 35 mph, separation of travel modes is necessary for safety.*

- *Stephen Ratke is a Senior Safety and Geometric Design Engineer for the FHWA Resource Center Safety and Design Technical Service Team and can be reached at (737) 308-4500 or via email at stephen.ratke@dot.gov.*
- **Safe Speeds Updates**
 - 2.1 Support HVE efforts with multiple-channel messaging and outreach.
 - **Joining Forces Program**
 - *There are 23 agencies who have participated over 2,000 hours 3,800 contacts, 2,600 speeding citations.*
 - *The 2023 total after the conclusion of the last event in September includes 13,700 contacts, 9,300 citations, 5,550 hours worked, 44 DUI arrests, 170 distracted citations issued.*
 - *There have been more than 11,500 citations over 2023 in total. Law Enforcement has had a different focus this year than in year's past so thank you for your efforts!*
 - **Grants Individualized to Agencies for 2024**
 - *OTS is working with Nye County Sheriff's Office, Las Vegas Metro, Henderson, North Las Vegas Police Department, Sparks Police Department, Washoe County Police Department, and Clark County School District for various grants. Many of these grants involve speeding and intersection safety.*
 - 2.2 Support legislative opportunities to curb speed and aggressive driving, such as automated enforcement in school and work zones.
 - *A local partner, the University of Nevada, Reno transportation group, has been identified for data gathering for automated traffic enforcement in Nevada to provide to legislators. They will use lidar as data gathering devices in Clark and Washoe counties to gather data.*
- **Intersections Updates**
 - 2.3 Support and document roadway lane reconfigurations throughout the state.
 - *RTC of Southern Nevada reviewed their standard drawings in relation to ADA standards in anticipation of PROWAG requirements. They are currently analyzing the design criteria to stand alone from the construction drawings, which the \$2 Million SS4A grant they received will allow them to implement.*
 - *RTC FAST team is working to identify (at least three) different technologies to detect when vehicles come too close to pedestrians & bicyclists. These efforts are beginning at high-crash locations to help develop heat maps and determine causes of these. Flamingo & Maryland is an intersection where this has been looked at, for example. This is expected to have a 6-month evaluation process with conclusions in the Spring or Summer of 2024.*
- **Lane Departures Updates**
 - 1.2 Statewide climbing and passing lane.
 - *Locations with an ADT over 1000 vehicles/day and trucks over 4% have been evaluated with for climbing and passing lanes. The network screening process eliminated areas within five miles of urban boundary and existing passing locations.*
 - *The recommendations will include two-mile segments where they plan to move approximately eleven projects forward.*

- 2.2 Apply traffic incident management (TIM) strategies to minimize disruption after incidents to improve emergency response times to crashes, improve first responders safety while on scene, reduce secondary crashes through training.
 - *There have been 171 first responders trained in 2023, which ranks Nevada number eight in the nation for most trained personnel this year. The group estimates that 392 personnel have been trained overall, with over 120 in November alone.*
- **Work Zone Updates**
 - 1.1 Research technology support and determine available data sources.
 - *The group is working to identify projects to incorporate data collection on speed feedback signs and additional devices. Currently, speed feedback signs collect data but there is not a process to use or analyze that data.*
 - *A contractor approached NDOT (on behalf of AGC) about implementing the collecting and analyzing data from technology devices in work zones. Two major contractors will be providing recommendations in projects.*
- **Open Discussion**
 - *A grant was awarded for a Rumble Strip Pilot Project where NDOT Traffic Operations worked with maintenance staff to install temporary transverse rumble strips during roadside maintenance in rural areas. NDOT staff members observed driver behavior and speed before and after installations using a radar gun.*
 - *The findings included two distinct driver behaviors. Drivers either slowed down by 5-10 mph or swerved around the transverse rumble strips.*
 - *The team observed challenges with equipment delivery delays. During the study period, winter last from fall 2022 to June 2023 which delayed the deployments. The Department is experiencing high vacancy rates in these rural areas so there were limited staff to set up the required traffic control for this deployment.*
 - *There is going to be a Traffic Safety Summit with rural traffic safety partners in May 2024 in Elko.*
 - *UNLV and the City of Henderson have worked together to observe driver behavior with dynamic rumble strips, where they saw a reduction of speed. The analysis included a hydraulic pump which raised rumble strips once an RRFB was actuated by pedestrians.*
 - *RTC of Southern Nevada received an SS4A Grant and is working towards identifying a consultant for the Southern Nevada Action Plan.*
 - *Mark your calendars for December 12 where NDOT Traffic Safety partners will be in Las Vegas to discuss the VRU safety assessment!*

Attachments:

- A. November 9, 2023, Meeting Attendees
- B. Summary (without attachments) from August 3, 2023 Safer Roads Key Area Meeting
- C. Monthly Fatality Report
- D. Preliminary Substance Involved Fatalities by County Report
- E. Actions and Strategies Update
- F. Human Factors for Speed Management Using a Safe Systems Approach Presentation

Next Meetings:

- Policy Priority Working Group – November 30, 8:30 AM – 9:30 AM
- Nevada Advisory Committee on Traffic Safety (NVACTS) – December 14, 2:00 PM – 4:00 PM
- Work Zones Action Update Meeting – Tuesday, January 16, 10:00 AM – 11:00 AM
- Lane Departures Action Update Meeting – Wednesday, January 18, 10:00 AM – 11:00 AM
- Intersections Action Update Meeting – Thursday, January 18, 1:00 PM – 2:00 PM
- Safe Speed Action Update Meeting – Thursday, January 25, 9:00 AM – 10:00 AM
- Next Safer Roads Meeting – Thursday, February 1, 10:00 AM - 11:30 AM

Distribution: All attendees and Safer Roads Roster (August 3, 2023)

Date issued: Thursday, November 17, 2023

NOTE TO RECIPIENTS: These meeting minutes record Kimley-Horn’s understanding of the meeting and intended actions arising therefrom. Your agreement that the notes form a true record of the discussion will be assumed unless adverse comments are received in writing within five days of receipt.

Safer Roads Attendee List
11-09-2023

Attendee	FirstName	LastName	Company	Email
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Safer Roads Attendee List
11-09-2023

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11-09-2023

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Safer Roads Key Area Meeting Summary



Date/Time:	Thursday, August 3, 2023 10:00am – 11:30am
Chair:	Lacey Tisler, NDOT Traffic Safety Engineering
Vice Chair Safe Speed:	Todd Hartline, DPS Office of Traffic Safety
Vice Chair Lane Departures:	Shawn Paterson, NDOT Design
Vice Chair Intersections:	Rod Schilling, NDOT Traffic Operations
Vice Chair Work Zones:	Casey Sylvester, NDOT Traffic Operations

Attendees

- See attached for the meeting attendees.

Topics

- **Summary from Last Quarterly Meeting** – There were no comments on the summary from the last quarterly meeting.
- **Monthly Fatality Data Update** – The June state fatal report is attached.
- **TRCC** – An overview of the last meeting on June 20 was provided. Next meeting is on Sept 19 at 1:30 PM.
 - There is an increase in pedestrian fatalities, bicycle fatalities, but decrease in motorcycle fatalities from the update on the monthly fatality data as of March 6.
 - Dr. Arteaga provided an update on the AI Speech Recognition project.
 - Accessing unique data elements.
 - Law Enforcement safety in the field.
 - Noeheelani Antolin has joined the UNLV School of Medicine in Laura Gryder's previous position and is involved in a few different projects.
 - Ongoing action items were reviewed and discussed.
- **NDOT Updates**
 - Traffic Safety Summit is September 12-14 in Las Vegas.
 - The next round of preservation projects will be coming out soon and there will be a focus in lane departures.
 - Model Inventory of Roadway Elements (MIRE), a guide to help transportation agencies improve their roadway and traffic data inventories, has been utilized and 37 elements have been identified.

- *FHWA deadline for this data collection is Sept 30, 2026.*
 - *Team members will be sent to a training for this.*
- *Vulnerable Road Users Assessment*
 - *The assessment has substantial progress and will be sent to NVACTS for approval when it has been completed.*
 - *33% of last year's crashes were related to VRUs*
- **OTS Updates**
 - *The team anticipated multiple funding sources, so this includes local agencies that they work with.*
 - *There's a big project to utilize the eGrants software which will assist with business planning and involves better reporting and functionality*
 - *The OTS team is working with an outside vendor to update to this system in 2024.*
 - *Anita Pepper, a new PIO has been added onto the team.*
 - *She will be working through new website design, outreach opportunities, etc.*
 - *Lots of communications to come!*
 - *In preparation of tri-annual (2024-2026) Highway Safety Plan submittal to NHTSA, a Nevada Equity Data Analysis Fact Sheet was developed and can be found in Attachment E.*
- **NVACTS Updates**
 - *The update was provided by Lacey Tisler and Amy Davey on behalf of Andrew Bennett.*
 - *At the last meeting, the group summarized legislative updates related to Traffic Safety. See Attachment F for this information.*
 - *New non-voting members have been added to the group:*
 - *Lacey Tisler, Chief Traffic Safety Engineer, NDOT*
 - *Kevin Tice, Traffic Records Program Manager, Department of Public Safety*
 - *Shannon Bryant, Nevada Committee on Testing for Intoxication, Washoe County Courts*
 - *Next meeting is September 14 at the conclusion of the Traffic Safety Summit.*
- **Safe Speeds Updates**
 - *2.1 Support HVE efforts with multiple-channel messaging and outreach.*
 - *The main support comes from the joining forces events.*
 - *Final event of the year in September*
 - *There were 26 agencies and over 3,700 speed citations issued, due to drinking, seatbelts, insurance, red light, etc. from the March event.*
 - *US 95 Corridor has had a cluster of fatalities has occurred due to unsafe passing and speeding.*
 - *Rapid Response funding and Law Enforcement partners are being utilized to improve the situation.*
 - *NDOT is putting together a collaborative response with short, mid, and long-term projects.*

- *There have been 12 fatalities in the Beatty, NV area this year so far, compared to the 6 fatalities from last year.*
- 3.1 – Use education and messaging to change culture of normalized speeding
 - *OTS has a new PIO, Anita Pepper, who went through a process internally as a new employee and met with each of the teams facilitating OTS programs.*
 - *These conversations were focused on creating a social norming campaign relative to the speeding issue in NV and the statistics. (Similar to what NHTSA does 20-22 – 5% increase, for example.)*
 - *OTS has met with Tara Goddard, Traffic Safety Researcher from Texas A&M, who will be a keynote speaker at the Traffic Safety Summit.*
 - *The conversation was focused on how speeding has been normalized in the US and the culture surrounding this.*
 - *Her session at the Traffic Safety Summit will include car culture and windshield bias.*
 - *Traffic Safety Research Roadmap (NCHRP 17-96) is a tool used to support traffic safety goals and it would also facilitate public acceptance of other traffic safety programs.*
 - *This research will be published in September 2023.*
 - *From these efforts, NDOT, OTS, and other agencies can utilize this tool as an aid in the efforts to improve the Traffic Safety Culture.*
- **Intersections Updates**
 - 2.1 – Determine locations with high nighttime crashes and recommendations
 - *A presentation was shared and can be found in Attachment G.*
 - *Adaptive Lighting installations have been successful in rural environments*
 - *Managed Lighting Control System*
 - *A Pilot Project has analyzed 3 interchanges in Washoe Valley and a few places in a more urban state in Reno.*
 - *This project will be completed by end of 2024, where recommendations will be provided.*
 - *Specific ‘dimly lit’ intersections will be evaluated, and the system will be used to help identify locations that need further assistance.*
 - 3.1 – Support efforts for automated enforcement in the state through the use of safety cameras.
 - *National Stop on Red Week (Aug 6-12, 2023)*
 - *A presentation was shared and can be found in Attachment H.*
 - *An event will be held on Aug 8 (next Wednesday) at Sahara/Decatur.*
 - *Consideration for this to be a governor’s proclamation.*
 - *NHTSA came out with the Highway Traffic Safety Events calendar for 2024.*
 - <https://www.trafficsafetymarketing.gov/sites/tsm.gov/files/2023-08/events-calendar-2024-15963-v4-tag.pdf>

- **Lane Departures Updates**

- 1.2 Statewide climbing and passing lane
 - *Risk and Risk Prioritization has been evaluated to help prioritize locations.*
 - *From this analysis, 10 passing lanes, 5 truck climbing lanes have been identified.*
 - *The GIS map with this information is currently being processed.*
- 2.2 Apply traffic incident management (TIM) strategies to minimize disruption after incidents to improve emergency response times to crashes, improve first responders safety while on scene, reduce secondary crashes through training.
 - *NDOT is excited to announce that a new coalition is beginning in Carson City.*
 - *Focus is local municipalities and law enforcement, including towing, fire, sheriff, NDOT, NHP, Lake Tahoe, Carson Metro.*
 - *Welcome letters will be sent this week to educate about TIM.*
 - *The contact list is still being compiled but will be utilized for the bimonthly meetings.*

- **Work Zone Updates**

- *Strategies have been identified for this group and have been added to the Action Tracking Tool.*
- *A few folks attended a training from Washington DOT where smart work zones were discussed.*
 - *Consider providing information about the start/end of work zones and traveler information.*
 - *The group who attended is working on sharing this information and working on specifications to compile for implementation into future projects.*
- *One of the goals for this work zone group includes collecting work zone data. This includes travel times, vehicle speeds, etc.*
- *Background software (similar to 511) will be available Fall 2023 and this data will be available for use by August 2024.*

- **Open Discussion**

- *Preliminary Schedule is available at the link below for the Traffic Safety Summit*
 - <https://zerofatalitiesnv.com/safety-summit/safety-summit-schedule/#pageSubNav>
- *Law Enforcement Training events on August 22 and 23 through Below 100.*
 - <https://www.below100.org/>

Attachments:

- A. August 3, 2023, Meeting Attendees
- B. Summary (without attachments) from May 4, 2023 Safer Roads Key Area Meeting
- C. Monthly Fatality Report
- D. Actions and Strategies Update
- E. Nevada Equity Data Analysis Fact Sheet
- F. Traffic Safety Legislative Overview from NVACTS
- G. Managed Lighting Presentation
- H. Stop on Red 2023 Presentation

Next Meetings:

- Nevada Advisory Committee on Traffic Safety (NVACTS) – September 14, 12:00 PM – 2:00 PM
- Work Zones Action Update Meeting – Tuesday, October 3, 10:00 AM – 11:00 AM
- Lane Departures Action Update Meeting – Wednesday, October 11, 10:00 AM – 11:00 AM
- Safe Speed Action Update Meeting – Thursday, October 12, 9:00 AM – 10:00 AM
- Intersections Action Update Meeting – Thursday, October 12, 1:00 PM – 2:00 PM
- Next Safer Roads Meeting – Thursday, November 2, 10:00 AM - 11:30 AM
- 2023 Traffic Safety Summit – September 12-14, 2023
 - Registration is open: <https://zerofatalitiesnv.com/safety-summit/>

Distribution: All attendees and Safer Roads Roster (August 3, 2023)

Date issued: Thursday, August 10, 2023

NOTE TO RECIPIENTS: These meeting minutes record Kimley-Horn’s understanding of the meeting and intended actions arising therefrom. Your agreement that the notes form a true record of the discussion will be assumed unless adverse comments are received in writing within five days of receipt.

DATE OF REPORT: 10/3/2023
 DATA AS OF: 9/30/2023

TO: PUBLIC SAFETY, DIRECTOR NDOT, HIGHWAY SAFETY COORDINATOR, NDOT TRAFFIC ENGINEERING, FHWA, LAW ENFORCEMENT AGENCIES
 FROM: THE OFFICE OF TRAFFIC SAFETY, STATE FATAL DATA
 PREPARED BY: ADAM ANDERSON, FARS ANALYST
 SUBJECT: FATALITIES BY COUNTY, PERSON TYPE, DAY, MONTH, YEAR AND PERCENT CHANGE.

Month	2022 Crashes	2023 Crashes	% Change	Month	2022 Fataals	2023 Fataals	% Change
JAN	20	25	25.00%	JAN	31	27	-12.90%
FEB	23	15	-34.78%	FEB	24	17	-29.17%
MAR	38	26	-31.58%	MAR	40	26	-35.00%
APR	31	37	19.35%	APR	32	40	25.00%
MAY	36	30	-16.67%	MAY	38	33	-13.16%
JUN	40	32	-20.00%	JUN	40	35	-12.50%
JUL	30	33	10.00%	JUL	31	41	32.26%
AUG	30	33	10.00%	AUG	33	36	9.09%
SEP	32	30	-6.25%	SEP	33	32	-3.03%
OCT			0.00%	OCT			0.00%
NOV			0.00%	NOV			0.00%
DEC			0.00%	DEC			0.00%
Reporting Period Total	280	261	-6.79%	Reporting Period Total	302	287	-4.97%
Year End Total	383			Year End Total	416		

KNOWN FATAL COMPARISON BETWEEN 2022 AND 2023.

COUNTY	2022 Crashes	2023 Crashes	% Change	2022 Fatalities	2023 Fatalities	% Change	2022 Occupants	2023 Occupants	% Change	2022 Unrestrained	2023 Unrestrained	% Change
CARSON	6	5	-16.67%	6	6	0.00%	4	3	-25.00%	4	0	-100.00%
CHURCHILL	10	7	-30.00%	10	7	-30.00%	5	5	0.00%	3	1	-66.67%
CLARK	169	174	2.96%	186	187	0.54%	80	84	5.00%	26	32	23.08%
DOUGLAS	5	2	-60.00%	5	2	-60.00%	4	2	-50.00%	2	0	-100.00%
ELKO	9	4	-55.56%	11	4	-63.64%	9	3	-66.67%	6	2	-66.67%
ESMERALDA	0	2	200.00%	0	2	200.00%	0	2	200.00%	0	0	0.00%
EUREKA	4	0	-100.00%	4	0	-100.00%	4	0	-100.00%	2	0	-100.00%
HUMBOLDT	5	3	-40.00%	5	4	-20.00%	5	3	-40.00%	1	2	100.00%
LANDER	3	1	-66.67%	5	1	-80.00%	5	1	-80.00%	4	1	-75.00%
LINCOLN	4	3	-25.00%	4	3	-25.00%	2	3	50.00%	2	1	-50.00%
LYON	6	5	-16.67%	6	5	-16.67%	3	3	0.00%	2	2	0.00%
MINERAL	2	2	0.00%	2	3	50.00%	2	3	50.00%	0	0	0.00%
NYE	7	15	114.29%	8	24	200.00%	6	22	266.67%	4	4	0.00%
PERSHING	5	0	-100.00%	5	0	-100.00%	5	0	-100.00%	2	0	-100.00%
STOREY	2	0	-100.00%	2	0	-100.00%	0	0	0.00%	0	0	0.00%
WASHOE	42	36	-14.29%	42	37	-11.90%	25	14	-44.00%	7	4	-42.86%
WHITE PINE	1	2	100.00%	1	2	100.00%	0	2	200.00%	0	1	100.00%
Reporting Period Total	280	261	-6.79%	302	287	-4.97%	159	150	-5.66%	65	50	-23.08%
Year End Total	383			416			219			86		

KNOWN COMPARISON OF FATALITIES BY PERSON TYPE BETWEEN 2022 AND 2023.

COUNTY	2022 Pedestrian	2023 Pedestrian	% Change	2022 Motorcyclist	2023 Motorcyclist	% Change	2022 Bicyclist	2023 Bicyclist	% Change	2022 Other Scooter, Moped, ATV	2023 Other Scooter, Moped, ATV	% Change
CARSON	1	2	100.00%	1	1	0.00%	0	0	0.00%	0	0	0.00%
CHURCHILL	1	0	-100.00%	4	2	-50.00%	0	0	0.00%	0	0	0.00%
CLARK	51	55	7.84%	42	39	-7.14%	10	5	-50.00%	3	4	33.33%
DOUGLAS	0	0	0.00%	1	0	-100.00%	0	0	0.00%	0	0	0.00%
ELKO	0	1	100.00%	2	0	-100.00%	0	0	0.00%	0	0	0.00%
ESMERALDA	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
EUREKA	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
HUMBOLDT	0	0	0.00%	0	1	100.00%	0	0	0.00%	0	0	0.00%
LANDER	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
LINCOLN	0	0	0.00%	2	0	-100.00%	0	0	0.00%	0	0	0.00%
LYON	0	1	100.00%	3	1	-66.67%	0	0	0.00%	0	0	0.00%
MINERAL	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
NYE	0	1	100.00%	1	1	0.00%	1	0	-100.00%	0	0	0.00%
PERSHING	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
STOREY	0	0	0.00%	2	0	-100.00%	0	0	0.00%	0	0	0.00%
WASHOE	7	13	85.71%	10	6	-40.00%	0	4	400.00%	0	0	0.00%
WHITE PINE	0	0	0.00%	1	0	-100.00%	0	0	0.00%	0	0	0.00%
Reporting Period Total	60	73	21.67%	69	51	-26.09%	11	9	-18.18%	3	4	33.33%
Year End Total	91			86			15			5		

THIS REPORT IS A POINT IN TIME COMPARISON

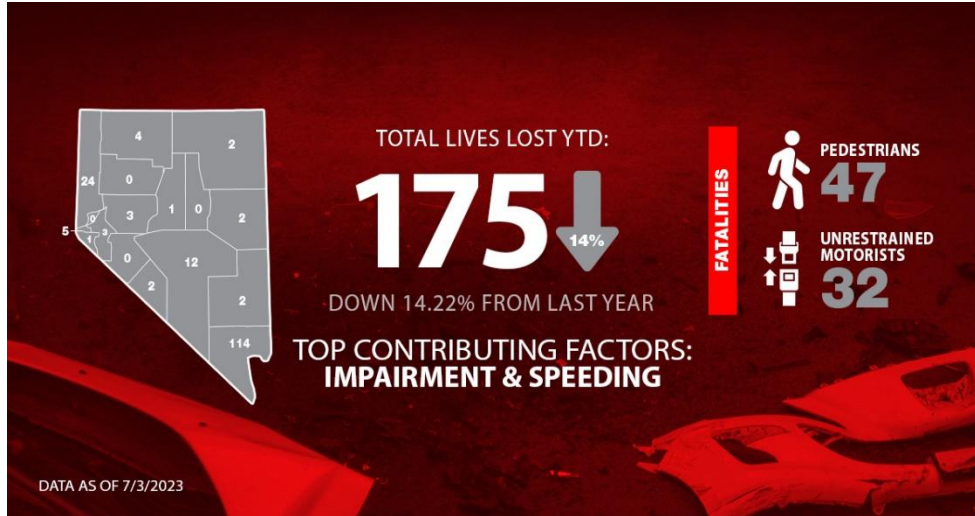
THIS DATA DOES NOT INCLUDE DATA FIELDS MARKED BY THE OFFICER AS UNKNOWN.

2022 DATA IS PRELIMINARY AND DOES NOT NECESSARILY INCLUDE FINAL REPORTS (FORM 5, CORONER, AND/OR TOXICOLOGY).

2023 DATA IS NOT FINAL UNTIL THE END OF DECEMBER 2024.

NOTE: The monthly report will be distributed by the 7th of each month.

- Key:
- Fatalities= Total number of reported fatalities (vehicle occupants, pedestrian, motorcyclist, bicyclist, and other).
 - Vehicle Occupants = Driver and occupant fatalities in a motor vehicle.
 - Vehicle Unrestrained = Driver and occupant fatalities in a motor vehicle unrestrained.
 - Pedestrian = Any person on foot, on a personal conveyance, or in a building.
 - Motorcyclist= A person riding any motor vehicle that has a seat or saddle for the use of its operator and is designed to travel on more than three wheels in contact with the ground.
 - Bicyclist= A person on an other road vehicle that can be propelled by pedaling (bicycle, tricycle, unicycle, pedalcar, electric bike).
 - Other = A person on a scooter, moped, ATV, or other motorized vehicle not captured above on a roadway.



DATE OF REPORT: 10/4/22
 REPORTING PERIOD: January 1-June 30, 2022-2023

TO: PUBLIC SAFETY, DIRECTOR NDOT, HIGHWAY SAFETY COORDINATOR, NDOT TRAFFIC ENGINEERING, FHWA, LAW ENFORCEMENT AGENCIES

FROM: THE OFFICE OF TRAFFIC SAFETY, STATE FATAL DATA
 PREPARED BY: ADAM ANDERSON, FATAL ANALYST

SUBJECT: SUBSTANCE INVOLVED FATALITIES BY COUNTY, MONTH, YEAR AND PERCENT CHANGE.

Key: Alcohol= Alcohol involved only
 Marijuana= Marijuana involved only
 Other Drug= Other single drug involved not including marijuana
 Poly-Substance= Any combination of involved drug(s) and/or alcohol

Important: Alcohol data reflects .08 or greater BACs.
 Marijuana, Other Drug, and Poly-Substance data reflects any amount of reported substance.
 Any Marijuana is a subset of Poly-Substance
 The data reflects the presence of substances (per NRS 484c.080) for the driver, pedestrian, motorcyclist, bike, and/or other (scooter, moped, atv) that were involved in the fatal crash; however, not necessarily the fatality.

COUNTY	2022 Crashes	2023 Crashes	% Change	2022 Fatalities	2023 Fatalities	% Change	2022 Alcohol	2023 Alcohol	% Change	2022 Marijuana	2023 Marijuana	% Change	2022 Other Drug	2023 Other Drug	% Change	2022 Poly-Substance	2023 Poly-Substance	% Change	2022 Any Marijuana	2023 Any Marijuana	% Change
CARSON	2	1	-50.00%	2	1	-50.00%	1	1	0.00%	1	0	-100.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
CHURCHILL	5	2	-60.00%	5	2	-60.00%	3	1	-66.67%	2	0	-100.00%	0	1	100.00%	0	0	0.00%	0	0	0.00%
CLARK	70	67	-4.29%	85	73	-14.12%	16	13	-18.75%	9	6	-33.33%	4	4	0.00%	48	49	2.08%	24	31	29.17%
DOUGLAS	4	0	-100.00%	4	0	-100.00%	3	0	-100.00%	0	0	0.00%	0	0	0.00%	1	0	-100.00%	0	0	0.00%
ELKO	2	1	-50.00%	2	1	-50.00%	0	1	100.00%	0	0	0.00%	0	0	0.00%	2	0	-100.00%	1	0	-100.00%
ESMERALDA	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
EUREKA	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
HUMBOLDT	1	0	-100.00%	1	0	-100.00%	1	0	-100.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
LANDER	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
LINCOLN	0	1	100.00%	0	1	100.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	1	100.00%	0	1	100.00%
LYON	2	3	50.00%	2	3	50.00%	1	2	100.00%	0	0	0.00%	0	0	0.00%	1	1	0.00%	0	1	100.00%
MINERAL	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
NYE	3	5	66.67%	3	7	133.33%	0	1	100.00%	1	2	100.00%	0	0	0.00%	2	2	0.00%	0	1	100.00%
PERSHING	1	0	-100.00%	1	0	-100.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	1	0	-100.00%	1	0	-100.00%
STOREY	1	0	-100.00%	1	0	-100.00%	1	0	-100.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
WASHOE	21	6	-71.43%	21	6	-71.43%	6	2	-66.67%	3	0	-100.00%	2	0	-100.00%	10	4	-60.00%	7	2	-71.43%
WHITE PINE	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
TOTAL FOR REPORTING PERIOD	112	86	-23.21%	127	94	-25.98%	32	21	-34.38%	16	8	-50.00%	6	5	-16.67%	65	57	-12.31%	33	36	9.09%

THIS DATA DOES NOT INCLUDE FIELDS MARKED BY THE OFFICER AS UNKNOWN.
 DATA IS PRELIMINARY AND DOES NOT NECESSARILY INCLUDE FINAL REPORTS, AS SUCH, DATA IS SUBJECT TO CHANGE.
 2022 DATA WILL BE FINAL AT THE END OF DECEMBER 2023, AND 2023 DATA WILL BE FINAL AT THE END OF 2024.

	2022 Total Crashes	2022 Total Fatalities	2023 Total Crashes	2023 Total Fatalities
	188	205	165	178
% Substance Involved	59.57%	61.95%	52.12%	52.81%



Key Area: Safer Roads (SR)

Critical Emphasis Area: Safe Speed (SP)


Strategy #1: Advance the use of infrastructure techniques and technology to manage target speeds and set speed limits.

No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
1.1	Develop a statewide Speed Management Action Plan for Nevada.	Lacey Tisler (NDOT)	Aug 2022	11/03/2022	 Completed	NDOT Speed Management Action Plan completed by 2022.	The Speed Management Action Plan has been approved by NDOT and will be posted to the website.
1.2	Implement context-sensitive speed setting approach for state-owned roadways.	Lacey Tisler (NDOT)	Jun 2024	07/21/2023	 Moderate Progress	Establish target speeds for stateowned facilities by 2024.	End date was updated from 12-31-2023 to 6-30-2024.
1.3	Install dynamic speed feedback signs within transition zones, preferably with geometric improvements, to reduce speeds where speeds/crashes are an issue.	Lacey Tisler (NDOT) Kimberly Goodwin (NDOT)	Jun 2024	07/21/2023	 Not Started	Select three locations to provide guidance from NDOT Speed Management Action Plan.	End date was updated from 12-31-2023 to 6-30-2024.

Strategy #2: Utilize high-visibility speeding enforcement targeted at high-risk locations to reduce crash severity.

No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
2.1	Support High Visibility Enforcement (HVE) efforts for aggressive driving and speed with strong multiple-channel messaging and outreach to encourage appropriate speeds.	Todd Hartline (DPS-OTS) Lacey Tisler (NDOT)	Dec 2024	07/21/2023	 Substantial Progress	Report on the statistics from each HVE event.	End date was updated from 6-30-2022 to 12-31-2024.
2.2	Support legislative opportunities to curb speed and aggressive driving, such as automated enforcement in school and work zones.	Todd Hartline (DPS-OTS) Lacey Tisler (NDOT)	Jul 2025	07/21/2023	 Substantial Progress	Automated enforcement legislation in the 2023 session.	End date was updated from 6-30-2023 to 7-31-2025.

Strategy #3: Improve effectiveness of education and outreach about safe speed and aggressive driving.





No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
3.1	Use education and messaging to change culture of normalized speeding.	Todd Hartline (DPS-OTS)	Jul 2024	10/12/2023	 Moderate Progress	One speed campaign and presentation that focuses on culture change per year.	End date was updated from 12-31-2022 to 7-31-2024.
3.2	Promote peer-to-peer outreach programs to address social norms and shared driving behaviors for all roadway users to reduce speed and aggressive driving.	Nick Nordyke (DPS-OTS)	Jun 2024	10/12/2023	 Substantial Progress	Hold at least one peer-to-peer outreach program per year.	End date was updated from 12-31-2022 to 6-30-2024.

Critical Emphasis Area: Lane Departures (LD)

Strategy #1: Apply proven engineering countermeasures and roadway improvements to keep vehicles in their lanes.


No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
1.1	Prioritize high-risk horizontal curves and apply countermeasures.	Jordan Daker (NDOT)	Jun 2024	07/21/2023	 Substantial Progress	Apply countermeasures such as high-friction surface treatment (HFST) and enhanced signage.	End date was updated from 6-30-2022 to 6-30-2024.
1.2	Develop a statewide climbing and passing lane program.	Jordan Daker (NDOT)	Dec 2023	07/21/2023	 Substantial Progress	Prepare Climbing and Passing Lane Study and prioritize locations (multi-jurisdictional).	End date was updated from 12-31-2022 to 12-31-2023.
1.3	Update rumble strip standards and guidance on new and re-rumble strip installations.	Jordan Daker (NDOT)	Jun 2024	07/21/2023	 Initiated	Standards and guidance for new and re-rumble strip installations.	End date was updated from 6-30-2022 to 6-30-2024.

Strategy #2: Increase survivability in the event of a lane departure through engineering and emergency response.




No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
2.1	Identify opportunities to increase survivability of run-off-the-road crashes (slope flattening, shoulder widening, and roadside object removal projects).	Shaun "Murry" Deforest (NDOT) Lacey Tisler (NDOT)	Jun 2024	07/21/2023	 Moderate Progress	Number of projects that address slope flattening, shoulder widening and object removal.	End date was updated from 6-30-2022 to 6-30-2024.
2.2	Apply traffic incident management (TIM) strategies to minimize disruption after incidents to improve emergency response times to crashes, improve first responders safety while on scene, reduce secondary crashes through training.	Juan Hernandez (NDOT)	Jun 2024	07/21/2023	 Moderate Progress	Increase number of responders trained.	End date was updated from 6-30-2022 to 6-30-2024.
2.3	Decrease animal vehicle collisions: prioritize problem areas with crash data (statewide assessment).	Nova Simpson (NDOT)	Jun 2024	07/21/2023	 Moderate Progress	Report on integration of wildlife mitigation into NDOT projects and continued research on problem areas.	End date was updated from 6-30-2022 to 6-30-2024.
2.4	Identify and support technology that will increase the survivability and decrease the probability of lane departure crashes.	Juan Hernandez (NDOT)	Jun 2024	07/21/2023	 Initiated	Document successes and crash reduction associated with technologies. Increase implementation of current technologies and identify one new technology.	End date was updated from 6-30-2022 to 6-30-2024.

Critical Emphasis Area: Intersections (I)




Strategy #1: Screen the roadway network for high-risk intersections and apply effective and/or innovative countermeasures.

No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
1.1	Screen the network to identify the top high-risk signalized intersections.	Shara Thiesen (NDOT)	Jun 2022	05/09/2022	 Completed	Top high-risk signalized intersections.	Intersection screening has been completed. The list has been forwarded to Jordan and Mo to complete their action steps.
1.2	Screen the network to identify the top high-risk unsignalized intersections (separated by rural and urban).	Shara Thiesen (NDOT)	Jun 2022	05/09/2022	 Completed	Top high-risk unsignalized intersections.	Intersection screening is complete and forwarded list to Jordan and Mo.
1.3	Identify countermeasures to apply to the top high-risk signalized intersections.	Maurilio Olivares (NDOT)	Dec 2023	07/21/2023	 Substantial Progress	Identify projects to improve safety at top high-risk signalized intersections.	End date was updated from 6-30-2022 to 12-31-2023.
1.4	Identify countermeasures to apply to the top high-risk unsignalized intersections.	Maurilio Olivares (NDOT)	Dec 2023	07/21/2023	 Substantial Progress	Identify projects to improve safety at top high-risk unsignalized intersections.	End date was updated from 6-30-2022 to 12-31-2023.
1.5	Conduct safety analysis at unsignalized and signalized intersections throughout the state to determine potential systemic countermeasures to apply at intersections.	Maurilio Olivares (NDOT)	Mar 2023	07/21/2023	 Initiated	Systemic safety analysis and identification of proven safety countermeasures.	End date was updated from 6-30-2022 to 3-31-2023.

Strategy #2: Screen the roadway network for high-risk segments and apply effective and/or innovative countermeasures to improve intersection safety.

No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
2.1	Determine locations with high nighttime crashes and make recommendations to increase lighting.	Maurilio Olivares (NDOT) Xu Hao (UNR)	Mar 2024	07/21/2023	 Substantial Progress	Provide recommendations to add lighting to high nighttime crash locations. Work with agencies to educate them on lighting standards. Education on destination lighting in rural locations.	End date was updated from 6-30-2022 to 3-31-2024.
2.2	Determine a high-crash corridor where crashes could be mitigated through corridor access management, and identify a project to install islands to limit access. Utilize results from Safety Management Plans (SMP).	Perry Gross (NDOT)	Jun 2024	07/21/2023	 Substantial Progress	Determine how access management is implemented at the local level. Determine a high-crash corridor and identify a project to install islands to limit access. Access management as recommended in SMPs. Number of access management measures incorporated into NDOT Encroachment Permits.	End date was updated from 6-30-2022 to 6-30-2024.
2.3	Support and document roadway lane reconfigurations throughout the state.	Maurilio Olivares (NDOT) Gena Kendall (RTCSNV)	Dec 2023	07/21/2023	 Substantial Progress	White paper on benefits of roadway lane reconfiguration. Determine what local agencies policies are. Reach out to agencies yearly to determine if roadway lane reconfigurations are being implemented.	End date was updated from 6-30-2022 to 12-31-2023.

Strategy #3: Conduct outreach and education initiatives for target audiences that focus on eliminating high-risk behaviors at intersections.




No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
3.1	Support efforts for automated enforcement in the state through the use of safety cameras.	Jason Stallcop (RPD) Erin Breen (UNLV)	Jun 2025	07/21/2023	 Initiated	Conduct a study to prove the issue. Review hearing to determine what made the bill fail and look to make changes to address those concerns, Conduct a best practice review on automated enforcement technology, address equity in automated enforcement. (Consider calling these safety cameras).	End date was updated from 6-30-2023 to 6-30-2025.
3.2	Conduct saturation enforcement of red light running.	Jason Stallcop (RPD)	Jun 2022	08/11/2021	 Not Started	Number of red-light running citations reported statewide.	N/A
3.3	Support efforts for roundabout training in driver education and on driving test.	Sam Ahiamadi (NDOT)	Jun 2024	07/21/2023	 Moderate Progress	Review driver education materials to see if they incorporate information on roundabouts. Coordinate with the Department of Motor Vehicles (DMV) to have roundabouts included in the driving test when they are located near a DMV.	End date was updated from 6-30-2022 to 6-30-2024.

Critical Emphasis Area: Work Zones (WZ)

Strategy #1: Increase use of data sources and innovative technology to address the causes of fatalities and serious injuries in work zones.

No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
1	Research technology support and determine available data sources	Casey Sylvester (NDOT)	Nov 2023	10/03/2023	Moderate Progress	Summary of research	End date was updated from 12-31-2023 to 1-27-2024. Action item to write specification on data collection and transmission from speed feedback signs. End date was updated from 1-27-2024 to 11-22-2023.
2	Analyze crash data, provide recommendations, and develop strategies to support better decision-making.	Matthew Williams (NDOT) Casey Sylvester (NDOT)	Jun 2024	06/23/2023	Not Started	Set of education/communication/outreach strategies to inform construction workers/project managers/etc. on ways to improve safety within work zones.	N/A

Strategy #2: Increase effectiveness of Traffic Control Work Zones

No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
1	Research traffic control design, specifications, Traffic Management Plan (TMP), and review processes for work zones (i.e. alignment with MUTCD standards).	Maurilio Olivares (NDOT) Casey Sylvester (NDOT)	Nov 2024	10/03/2023	 Moderate Progress	Summary of findings based on areas of improvement and design best practices.	Have specs for speed feedback signs and for begin/end of work zone presence devices in projects that advertise beginning in Nov 2023. Likelihood of getting this out by Nov 5th are low however expect to be using these specifications sometime in November.
2	Measure effectiveness of traffic control layouts (Identify an agency to champion this effort?)	John Penuelas (RTCSNV)	Jun 2025	06/23/2023	 Not Started	Develop strategies to review traffic control plans for conformance with national standards.	N/A
3	Evaluate the feasibility for using automated enforcement within a work zone as a pilot project.	Lacey Tisler (NDOT)	Dec 2025	06/23/2023	 Not Started	Summary of findings with recommendations for use.	N/A

Strategy #3: Future Consideration: Determine impacts of work zones on capacity, mobility and safety downstream of the work zone

No.	Description	Action Step Leader	Completion (Est.)	Last Update	Status	Output Measure	Comment
1	Review projects within 0.5 mile outside of work zones which impact the safety of the corridor.	Maurilio Olivares (NDOT)	Jun 2025	06/23/2023	<input type="radio"/> Not Started	Summary of impacts that construction zones have on safety within the vicinity of a work zone.	N/A

Human Factors for Speed Management Using a Safe System Approach



Zero is our goal. A Safe System is how we get there.



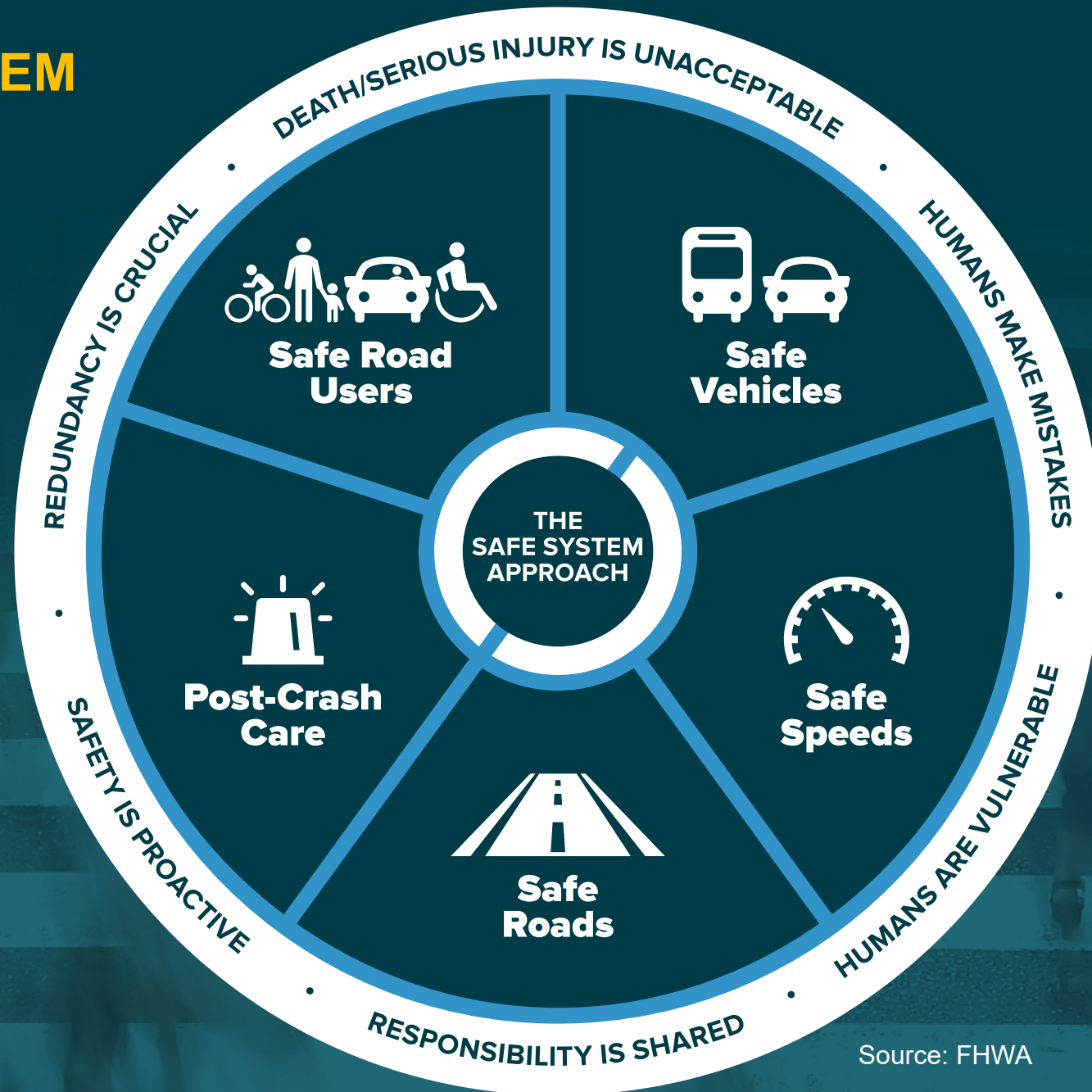
U.S. Department of Transportation
Federal Highway Administration

ZERO IS OUR GOAL
A SAFE SYSTEM IS HOW WE GET THERE

DISCLAIMERS

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THE SAFE SYSTEM APPROACH



Death/serious injury is unacceptable



Humans make mistakes



Humans are vulnerable




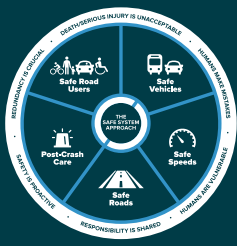
Responsibility is shared



Safety is proactive

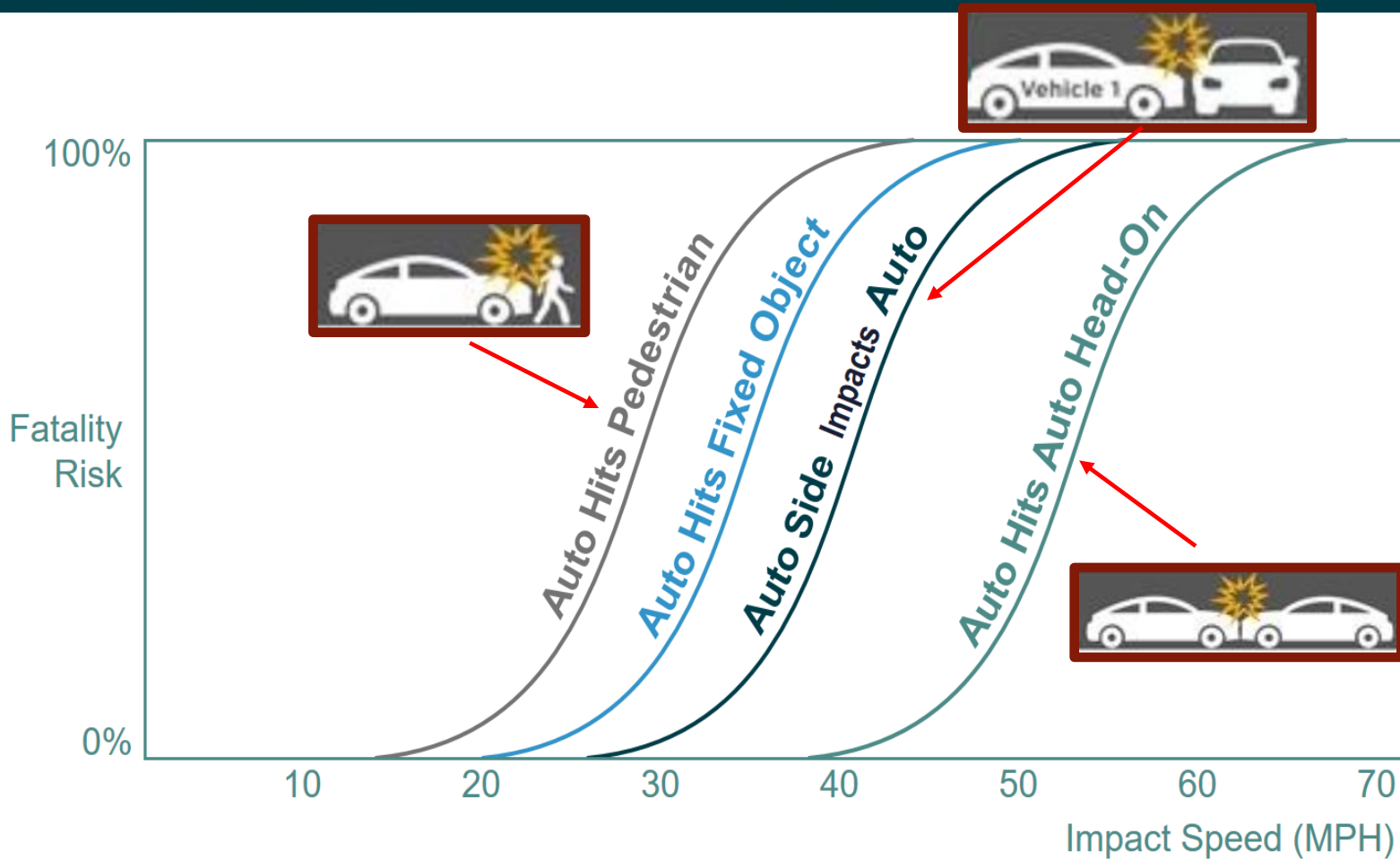


Redundancy is crucial



Humans are vulnerable

The Safe System Approach involves matching vehicular operating speeds to the appropriate conditions of the road



Source: FHWA

Designing and operating safe roads is an exercise of managing kinetic energy

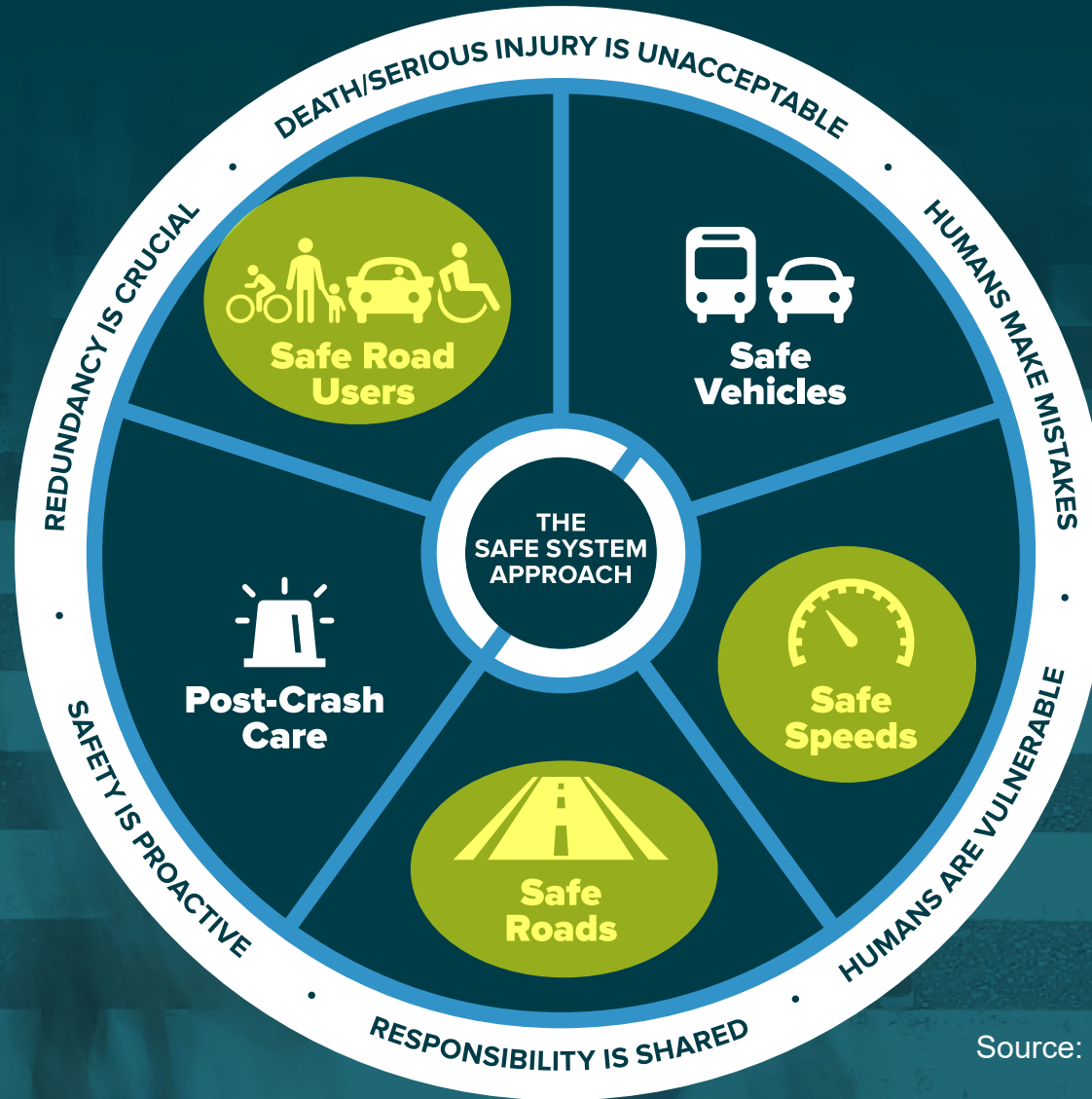
$$K = \frac{1}{2}mv^2$$

ACHIEVING SAFE SPEEDS – WHO IS RESPONSIBLE?


Death/serious injury is unacceptable



Humans make mistakes


Humans are vulnerable




Responsibility is shared


Safety is proactive


Redundancy is crucial

Thoughts on the Safe Roads Element



Roads should be designed for the behavior we want

How fast would you drive on these roads?



“Understanding and influencing behavior as an outcome of the system”
New Zealand Speed Management Guide

Dixie Highway Proposed Reconfiguration - West Palm Beach, FL

How the Built Environments Shapes Driver Behavior

A Naturalistic Driving Study

Slides courtesy of:

Patricia C. Tice, Corresponding Author

University of Central Florida

Tel: 407-758-0137; Email: ptice@knights.ucf.edu

Roadway Design Philosophy

Historic Design

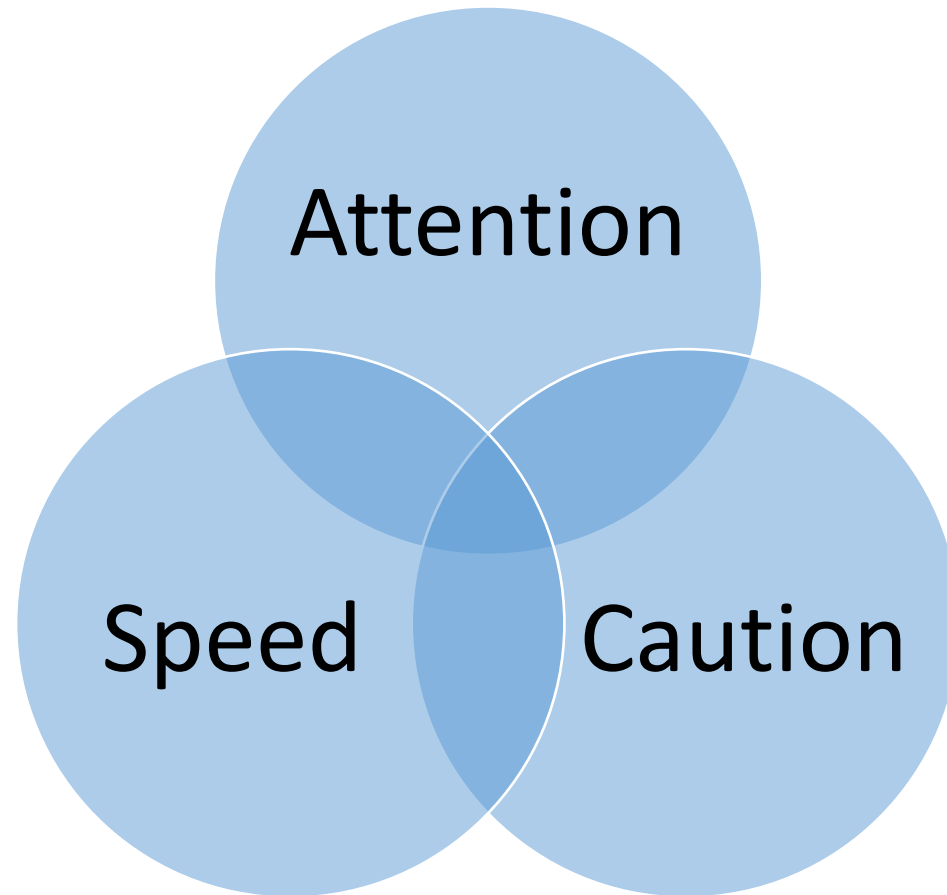
- Worst Case Scenario
 - Laws of Physics
 - Highest Speed
 - Weakest Driver
 - Widest Safety Margins
 - Human Factors as an input

“Design-To” Concept

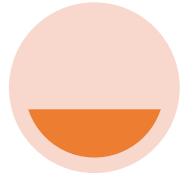
- Behavior Shaping
 - Psychological Principles
 - Target speed
 - High levels of caution
 - Engaged attention
 - Physics as an input

- But how? Where’s the data?

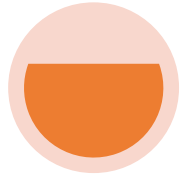
Urban Driver Behavior



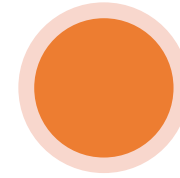
3 ways to approach the problem:



Within the Cross
Section



Context around
the road



Mental
Frameworks

Data: What can we measure?

Target features (Independent Variables)

Roadway
Built Environment
Users
System

Walkscore

Context
Classification

Hierarchical
Classification

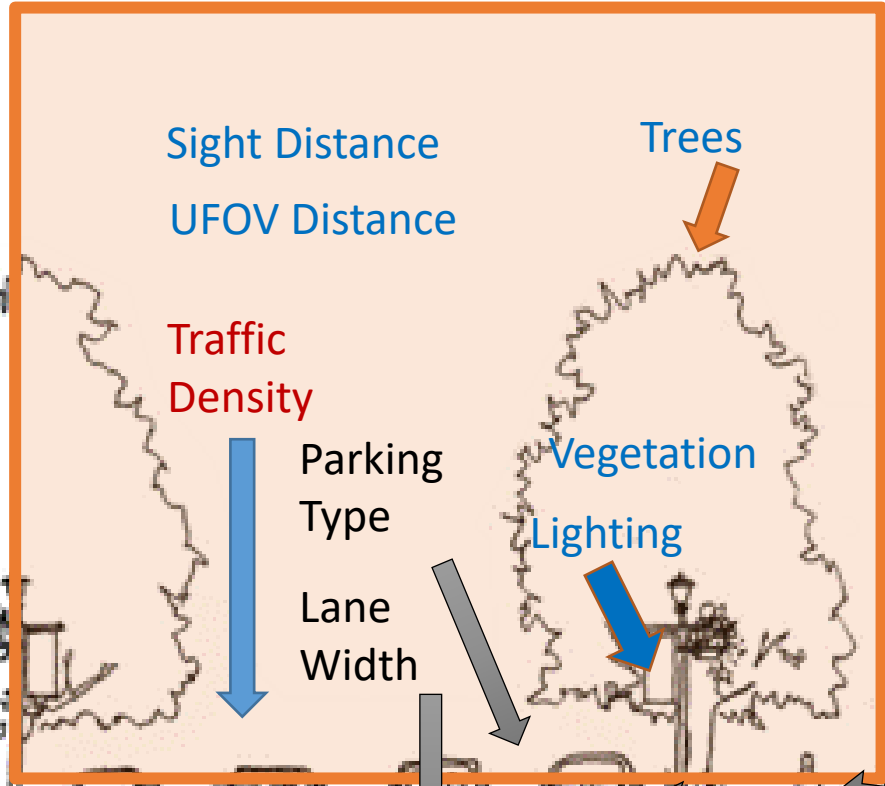
Vulnerable
Users

Sidewalks

Bike Lanes

Number of Lanes

Median



Aspect ratio
H/W

of Stories

Land Use

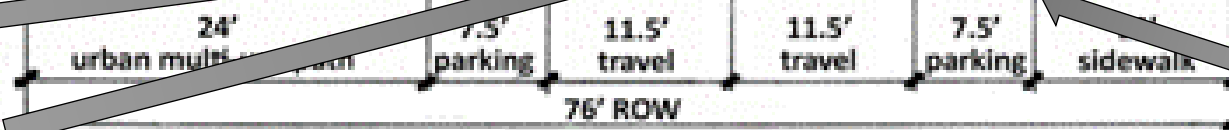
Building
Placement

Doorway Density

Driveway Spacing/
Block Length

Clear Zone width
at eye height

Corridor Width



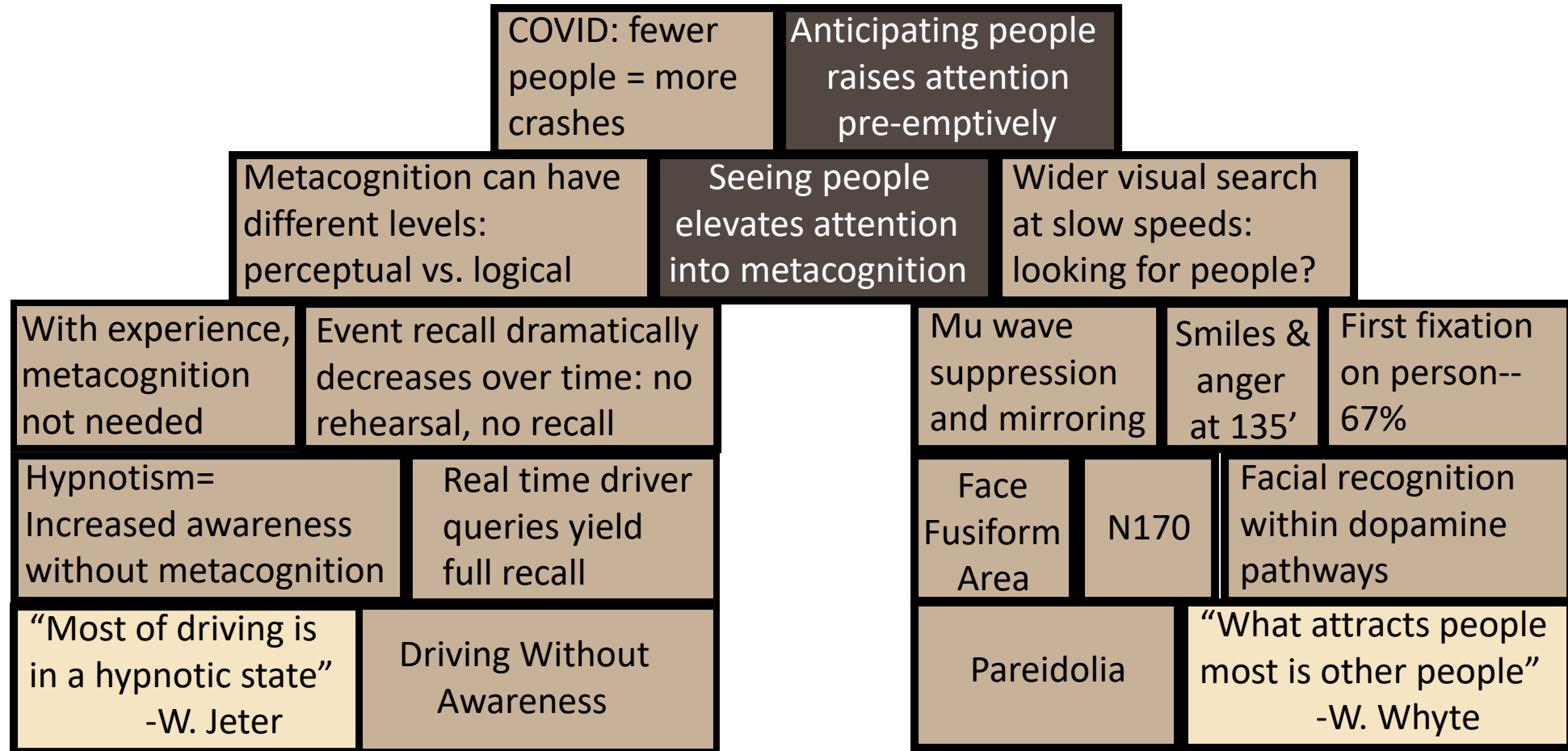
SHRP2 Naturalistic Driving Data

Eye-tracking Data Tabulation

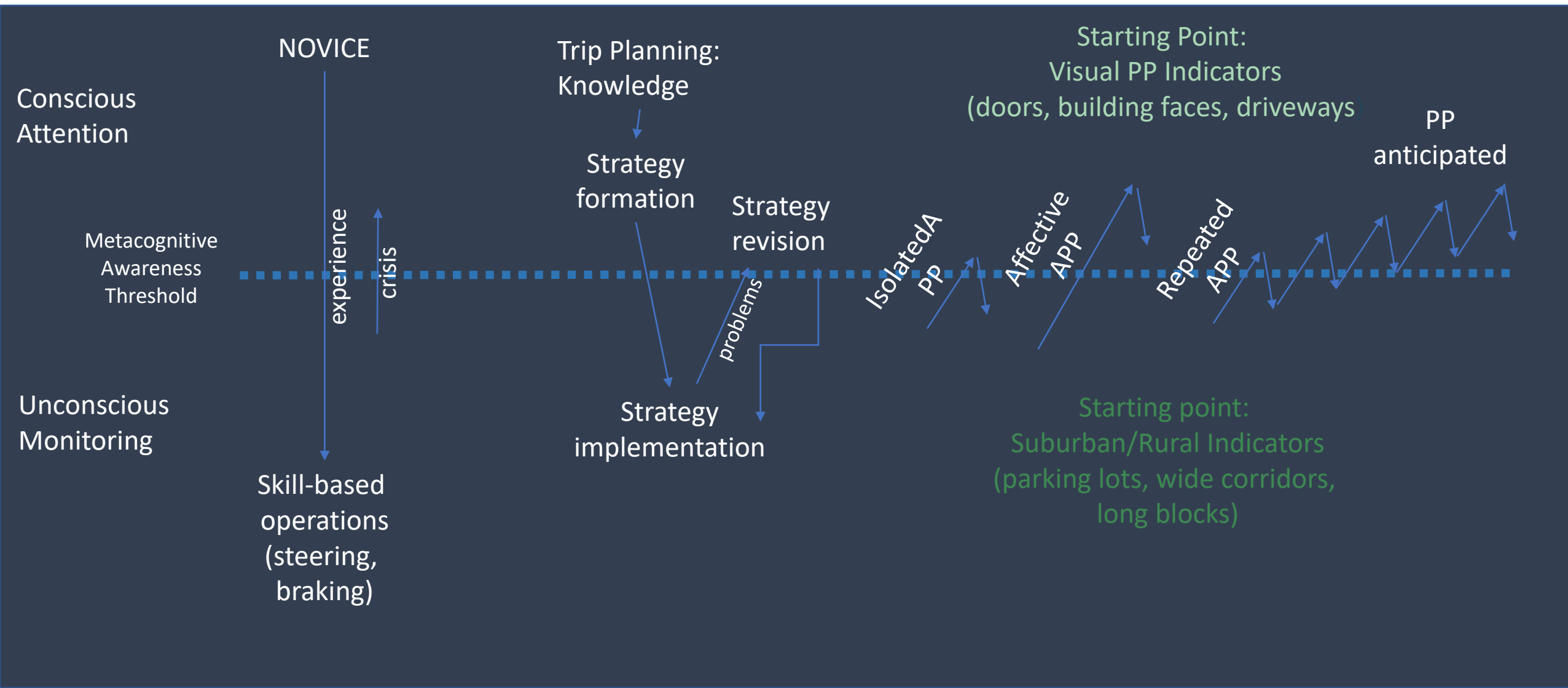
- 200 locations
 - Split between Seattle and Tampa
 - 10 epochs per location,
 - 10 readings/sec
- On-task vs. Off-Task
- High level Task Type
- LOS
- Vulnerable User Presence

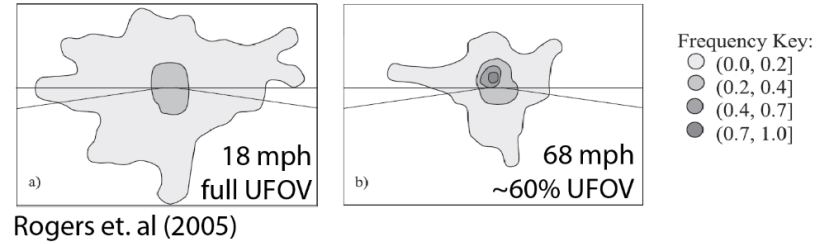


Theory of Driving: Building the Conditioned Anticipation of People Model



Conditioned Anticipation of People Model (CAP)

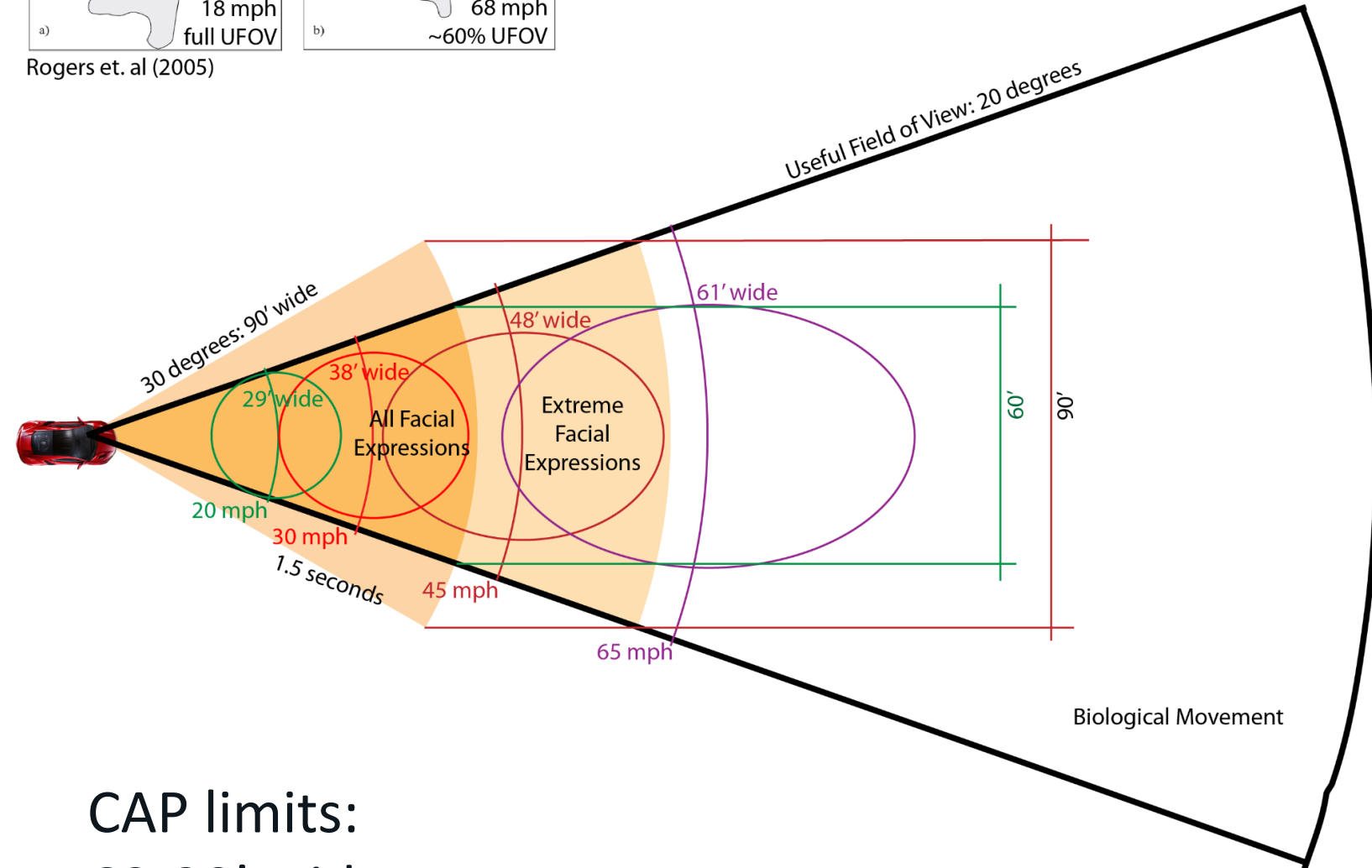




Operational Field

Visual range:

- 90 feet for all facial expressions
- 135 feet for intense expressions
- Increased latency for up to 30°
- 300 feet for human form at night
- Driver focuses 1-2 seconds in front of the vehicle, centering around 1.5 seconds



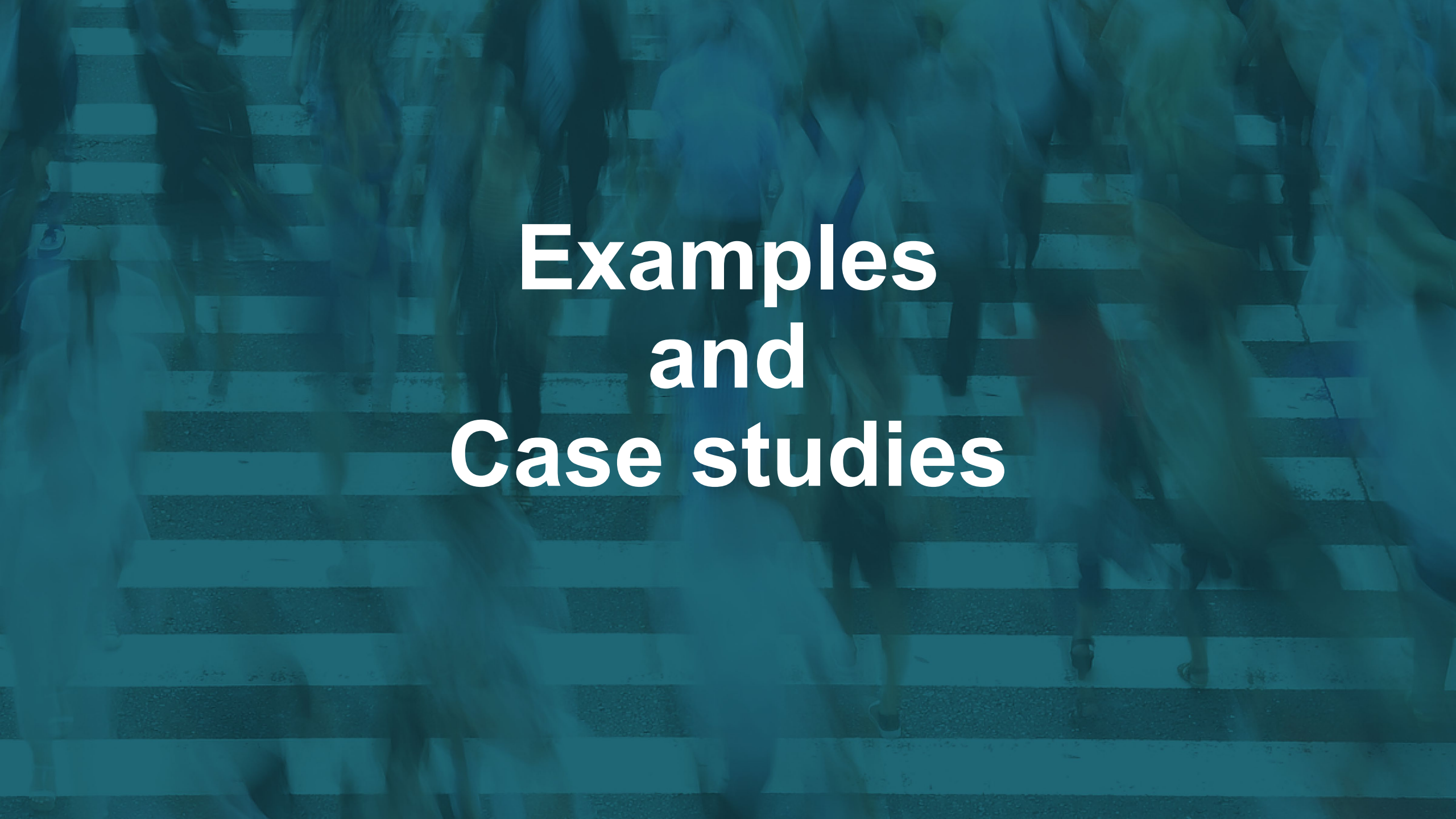
CAP limits:

60-90' wide

Up to 40 mph (59 feet per second)

NATURALISTIC DRIVING STUDY TAKEAWAYS

- Most driving is done in a near hypnotic state
- Driving above 35mph requires looking so far ahead on the road that drivers can't recognize expressions and social cues
- Active cognition happens when forced by interaction with humans
- Roadway visual width at driver's eye height is a key determinant of selected driving speeds
- Above 35mph, separation of modes is necessary for safety



Examples and Case studies

Delft, South Holland

Google Street View

Sep 2020

See latest date

DELFT, NL



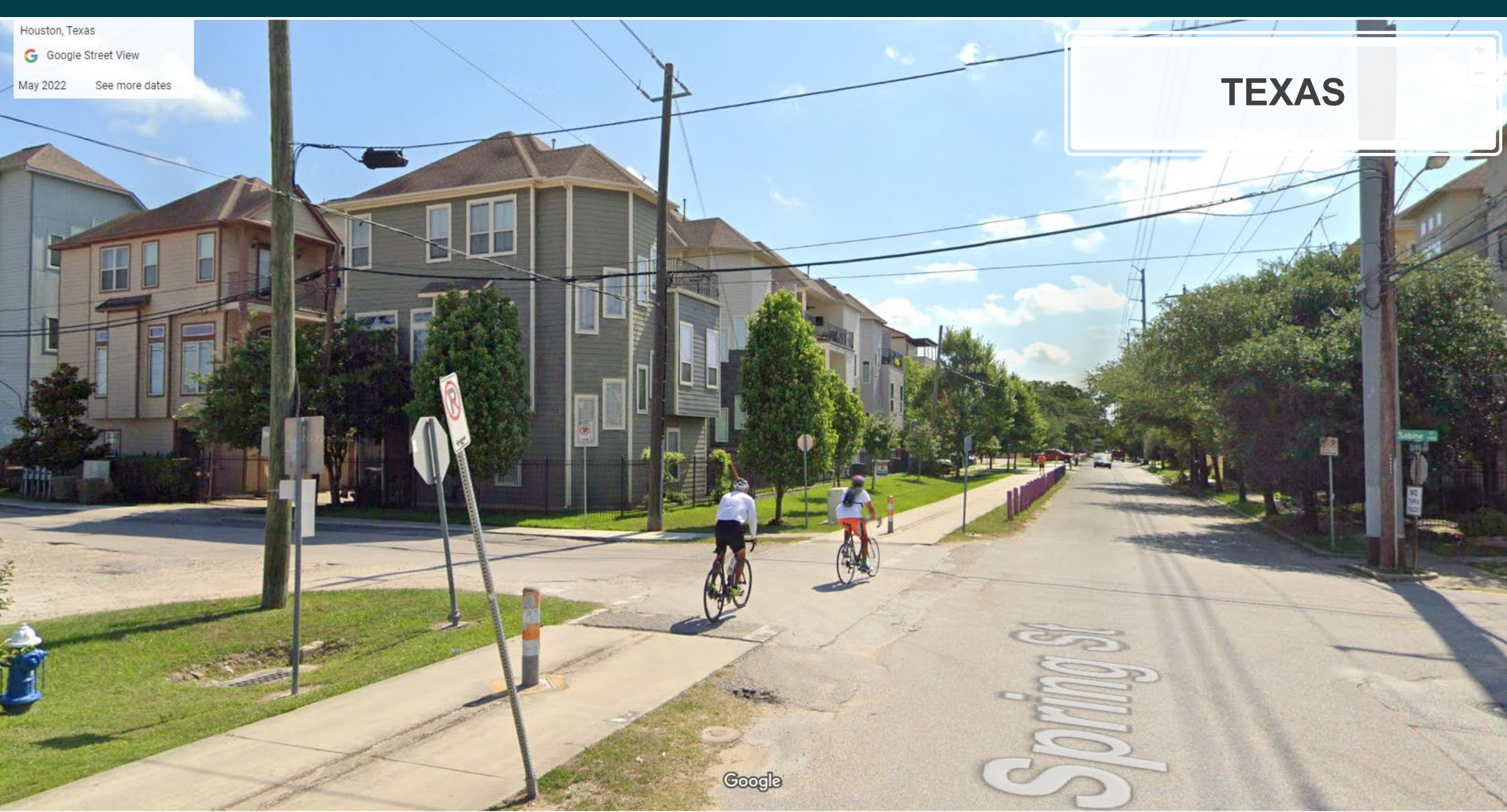
Delft, South Holland

Google Street View

Sep 2020

[See latest date](#)





Google

The application of Safe System approaches to infrastructure planning, design, and operations would represent a fundamental shift in how transportation agencies consider, analyze, and make decisions during project development and offer mechanisms to advance safety across the U.S.

Meaning of *disruptor* in English

disruptor

noun [C]

UK  /dɪsˈrʌp.tə/ US  /dɪsˈrʌp.tə/

... changes the traditional way an industry operates, especially in a new and effective way

Design Criteria:

- Design Volume
- Design Vehicle
- Design Speed
- **Design Kinetic Energy Threshold**

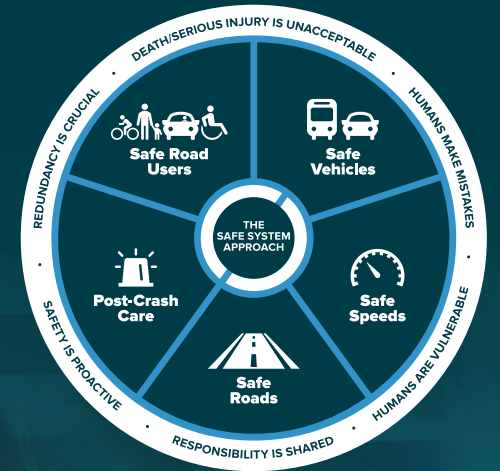
A blurred, teal-tinted photograph of a crowd of people walking across a crosswalk. The text is overlaid in the center.

**It's okay to make vehicle drivers
pay attention**



THE SAFE SYSTEM APPROACH

Zero is our goal. A Safe System is how we get there.



Stephen Ratke, PE (NV), RSP2i

Senior Safety and Geometric Design Engineer

FHWA Resource Center

Safety and Design Technical Service Team

737-308-4500

Stephen.Ratke@dot.gov

FHWA Resources: <https://highways.dot.gov/safety/zero-deaths>