Traffic Safety in Indiana

ITT Safety Summit, 2025

Dan McCoy, P.E., INDOT, Director of Traffic Engineering
Taylor Ruble, P.E., RSP_1, INDOT, Traffic Safety Engineer

September 2025

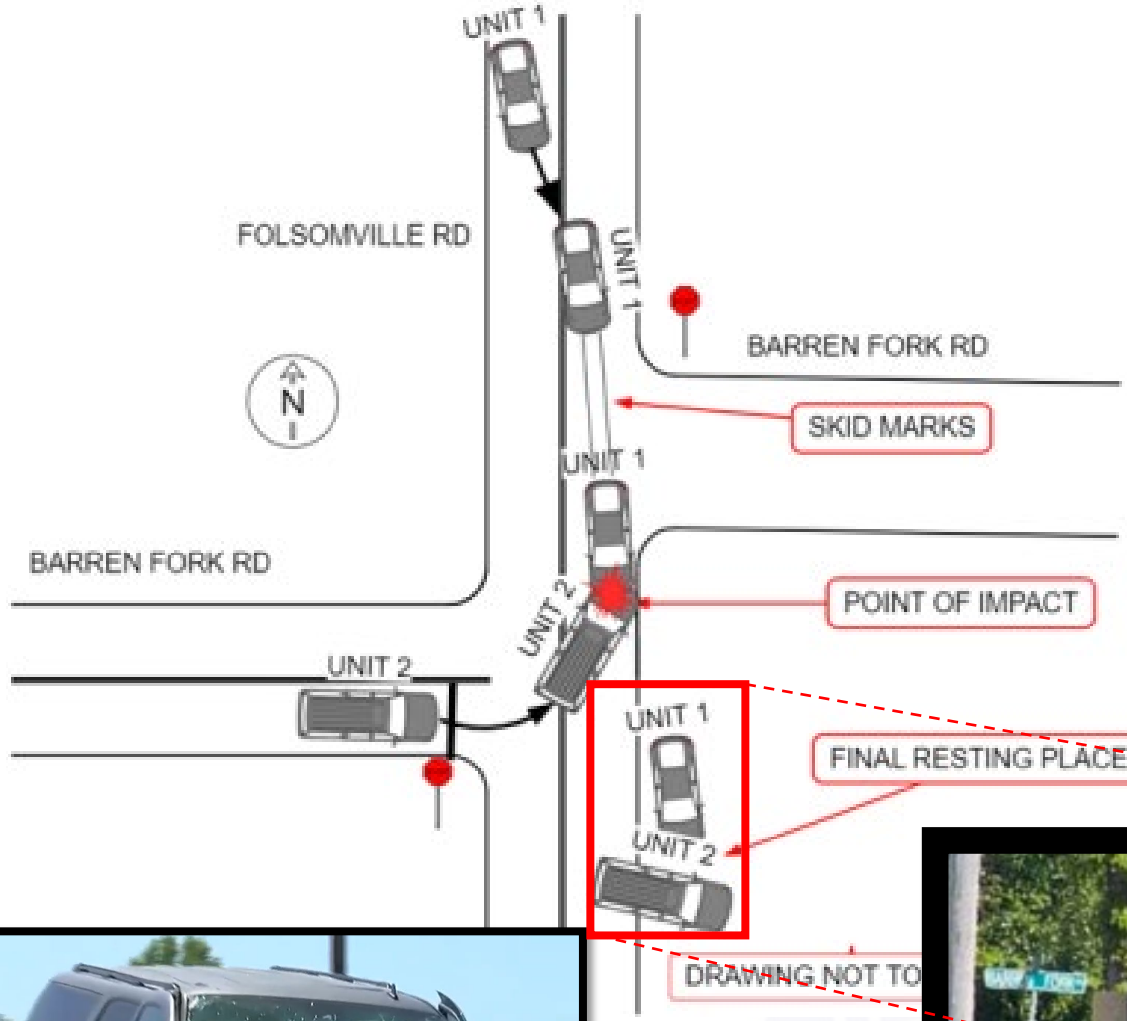
Outline

- Indiana Statewide Safety Trends
- Humans Make Mistakes & Speed Kills
- How a Safety Project Becomes a Safety Project
- Do Safety Projects Even Work?
- Low Cost and High Benefit
- New Initiatives

The Office of Traffic Safety Mission

"Reduce motor-vehicle crashes which result in fatalities or serious injuries for all road users on state and local roadways."

How Are We Doing?


UNIT 1
FOLSOMVILLE RD
UNIT 1
BARREN FORK RD
N
SKID MARKS
UNIT 1
BARREN FORK RD
UNIT 2
POINT OF IMPACT
UNIT 2
UNIT 1
FINAL RESTING PLACES
UNIT 2
DRAWING NOT TO


4NEWS AT 5
HIGH SCHOOL STUDENT D


NEW INFORMATION
WARRICK CO.
1 DEAD, 1 SERIOUSLY HURT IN CRASH

Those Killed in 2024

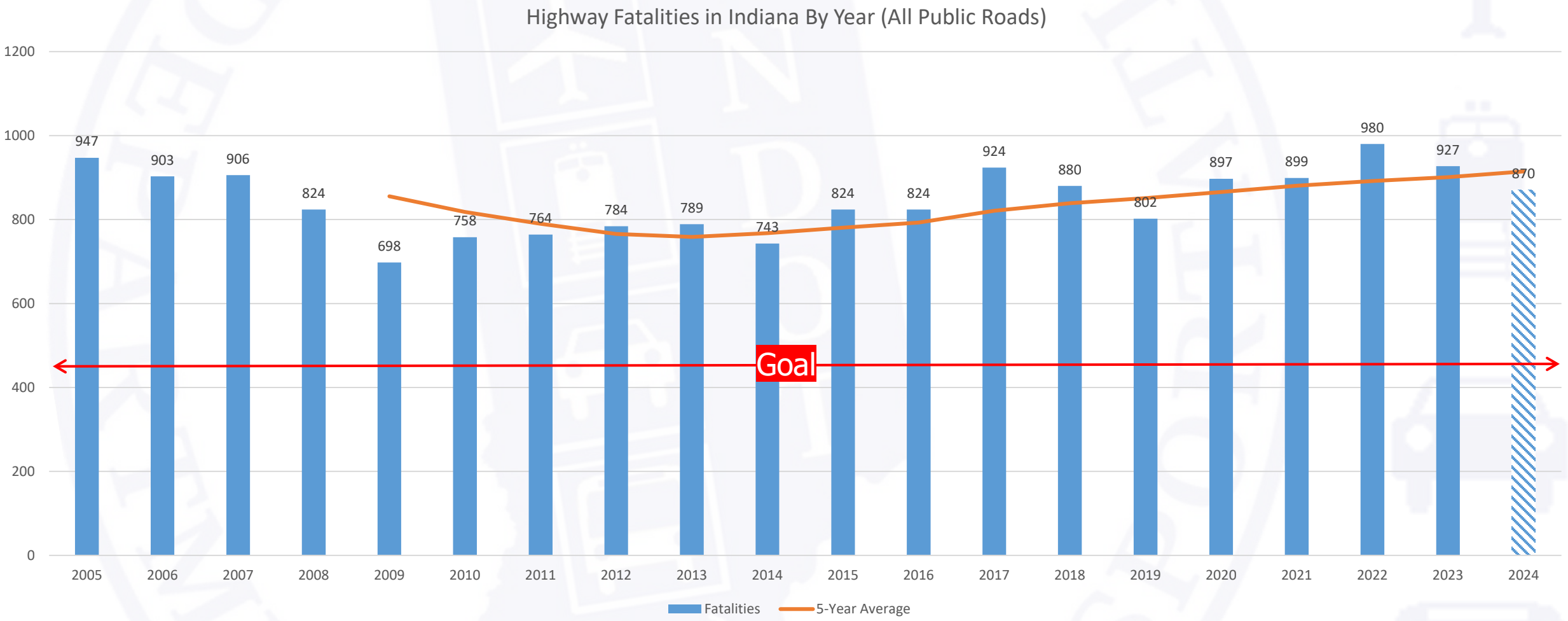
HAULEY, BILLY, CHARLES, BRAXTON, JULIO, KRISTEN, PHILLIP, BRIANNA, TYLER, BERNARD, ROGER, QUANAEE, BARRY, CHARLES, TIMOTHY, CASY, MICHAEL, ERIC, CHAD, RICHARD, JACK, ROBERT, RYAN, STEVEN, GLENN, PAMELA, ROGER, JOHNATHON, ALONZO, DARIUS, STEPHANIE, DOROTHY, KRISTOPHER, WILLIAM, JAVONTA, VINCE, RAYMOND, NORMAN, WILSON, STEVEN, THUAN, BENJAMIN, MARTIN, LUWI, STEPHANIE, ROBERT, LARRY, DESHAWN, DEBORAH, JAMES, TODD, KATHLEEN, JENNIFER, MELISSA, CODY, JOHNNIE, CRAIG, RITCHIE, ROBERT, AMANDA, PHILIP, BREAH, DEMAR, SHOMARI, CHRISTOPHER, JUSTIN, GABRIEL, JOHN, KENDRA, KENNETH, PRABHJOT, JUSTIN, VARINDER, DAKOTA, JOSE, BRYCE, SHANE, SHAUN, TAMMY, SAMANTHA, NATHANIEL, BREONNA, JOHANN, MARLON, TIMOTHY, NERISSA, NICHOLAS, OWEN, CYNTHIA, MICHELLE, SCOTT, BREAUNNA, CLAYBORN, MACKENZIE, JAMES, MICHAEL, ELAINE, STEPHEN, BRIAN, DARREN, ALEX, RICHARD, KEVIN, SPENCER, RICHARD, JOHN, DAVID, TIMOTHY, CARLOS, RICHARD, SHERRI, BRANDON, JUSTIN, JORDON, H GUNTHER, KEVIN, LATOSHA, BRIAN, ADAM, DAVID, MICHAEL, ADRIAN, JASON, ANDRE, JAY, ELIJAH, LELAND, THOMAS, CYNTHIA, DAVID, MICHAEL, RALPH, LILLYIAN, KEATON, MAXIMINO, MARION, PATRICK, JOSHUA, MASON, DANIEL, JAMES, ISSAC, SETH, BARRY, J, LARRY, KEVIN, BRENT, LAWRENCE, MARK, ALVIN, JAMES, JORDAN, MICHAEL, MARY, AARON, GARY, HAROLD, STACIE, STANLEY, ALEXANDER, TIMOTHY, UNKNOWN, TY, ADAM, CHAISE, CEARMEASE, ANTHONY, KENNETH, TRAVIS, MATTHEW, TRESHAWN JAQUEZ, JAMESLY, SUSAN, JUNE, CAROL, AMY, NANCY, COURTNEY, JEFFREY, JASON, BRANDON, LOIS, JONATHAN, ZINYETTA, DREW, LASHAUNA, ANGEL, ROBERT, ARTHUR, MORRIS, NICHOLUS, ERNEST, DONALD, JARYN, MUHAMMAD, KEITH, DENZEL, ALYSON, MONTRELL, JAYDEN, IVAN, MATTHEW, ERIC, INKWON, DAMION, JULIE, ROSS, MICHAEL, ESTEFANIA, ANA, MANUEL, OMAR, DANIEL, RANDALL, DARREN, LESTER, JAMES, TURKI FAISAL, MARION, ALYSSA, DOUGLAS, TIMOTHY, CLARENCE, NEAL, ROLEX, SHERLINE, JASON, JERRY, CARMEN, ROBERT, MARY, MICHAEL, VISHAL, SAMUEL, RODNEY, MARK, MISTY, MARSHON, PHILLIP, TYLER, JACOB, SHAWN, FIOACCHINO, GARY, COLE, JACOB, LINDA, GARY, JOSHUA, KAIDEN, HEATHER, DYLAN, FABIAN, RUSSELL, JOHN, WAYNE, BERTHA, MARGARITA, JOSIMER, DEWAYNE, JUDY, RYAN, JASON, BARBARA, SHANON, STEVEN, ANNA, CAROL, BRIAN, BRADLEY, TRACEY, PEGGY, CARL, JONATHAN, WILLIAM, MICHAEL, JEFFERY, PIYUSH, SHEILA, JOSE, JAYLEN, GARY, JOSE, TODD, ALEXANDER, LOESA, GAVIN, KYLE, OWEN, BEAU, GREGORY, DAVID, CYLE, JAMES, DALE, JOE, ROY, ANDREW, FRANKLIN, JEANETTE, CHELOT, TENISHA, JOHN, JEFFREY, BLAKE, MICHAEL, AMBRA, DOROTHY, LARRY, CHERYL, RUTH, TIMOTHY, BRADLEY, CLARENCE, LUCY, ASHTON, CHARLES, KIMBERLY, NOAH, JOSEPH, BARRY, CHRISTOPHER, MICHAEL, TOBY, THOMAS, MARIA, KYLE, KAREN, DOMENICK, ADAM, STEFFANIE, ROBERT, ADDISON, CHANDLER, MICHAEL, TEVORRI, CARY, ROGER, LAVONNE, DEAIRA, MARCUS, AMANUEL, MAGDALYNN, CHARLES, ROGER, GEORGE, ELLIOTT, PHILIP, HUMBERTO, ERICA, CHARLES, JAMES, ALIVIA, MASON, APRIL, PAMELA, RICHARD, FREDERICK, ROY, RYAN, ANDREW, BRIAN, DAVID, JALAH, BRYAN, AMY, KEVIN, JUSTUS, DANIEL, ALFRED, ABBY, LAURA, JORDAN, TERRY, JUDITH, CHRISSY, ROCKY, KELIANNE, RAYLON, FINIS, FERNANDO, GENESIS, ANTHONY, SARAH, JOSEPH, TUFF, MARQUIS, DARIA, JOHN, NORMA, TIFFANY, HAL, KYLE, RANDALL, KIERA, RENEE, JUDSON, ABEL, JASON, GREGORY, WILLIAM, YOUSSEF, CAREN, CODY, AIDIN, SARAH, TIA, JORGE, WELSY, JOE, ERIKA, BRAD, MICHAEL, MELISSA, THOMAS, COREY, BRENTEN, ROBERT, ADAM, BERNARD, KEITH, LYN, EAMON, RICHARD, TRAVIS, NICHOLAS, CHANNGDUAND, ROBERT, CHARLITA, CHRISTOPHER, STEVEN, AUSTIN, INAN, EARL, JOYCE, MICHAEL, KAROL, JOSHUA, GREGORY, DENNIS, JANICE, CONNOR, AIDEN, REBEKAH, PAWEL, DAVID, JERRY, DONALD, CLAUDE, TYLER, DALTON, KELLY, BRIAN, JOHN, TONYA, KIM, CODY, MARK, UNKNOWN, KAELYN, JASON, ETHAN, BRANDT, LUCAS, GEORGE, QUINTON, FERNANDO, MAYRA, EDRAS, TERRYOUN, TREASURE, LORETTA, PRESCILLA, PAMELA, PHILLIP, SANDRA, SARA, MARTIN, STEVEN, SURESH, CORA, VERNON, WADE, MICHAEL, ROBERT, NEAL, SASHA, DEONDREY, JOHN, LAURA, NICOLE, LLOYD, AARON, JEANCLAUDE, KENT, CHARLES, BRIAN, CAMIREN, JEREMY, STEPHEN, ANTHONY, WENDELL, JAMES, MATTHEW, CHRISTOPHER, LYLE, MICHAEL, DAVID, CHRISTOPHER, MIRTA, AYANA, DOROTHY, BRANDY, WAYNE, BLAINE, DAVID, LESTER, JORGE, TRAMPEST, CODY, IRISH, JUSTIN, REESE, ZACHARY, RYAN, SARONA, DANIEL, EVERETT, DIEGO, TIMOTHY, DOMINIQUE, ONEL, JON, CO, TYLER, TYLER, STEVEN, MAVERICK, DEBRA, TATIANA, PEDRO, PAULA, KENNETH, DILLON, CYPRIEN, JOHN, RICHARD, EDDIE, CORBIN, JOSEPH, MARK, JANET, BRUCE, TRAVIS, FORREST, JAMES, BRIAN, BENNIE, BARBARA, BRADLEY, RAVEN, BRANDY, SALVADOR, SERGEI, NEARLEAN, RANDALL, PATRICK, KARLA, DENNIS, NATHANIAL, MIHAI, ROBERT, BRYCE, BETTY, MARTHA, JADE, DARYA, BRYCE, ZACHARY, ASHLEY, SCOTT, KADEN, ANIESHA, PAUL, CHARLES, JOSEPH, RAY, NICHOLAS, JENEVA, SAMUEL, JUSTIN, KYLE, DEBORAH, CHRISTIAN, WIILIAM, ROBERT, ZACKARY, RODNEY, ALEXANDRA, JACK, IRENE, EDWARD, CHARLIE, DEBRA, DAPHNE, KASEN, DAVID, VICTORIA, ISAAC, JASON, DANIELLE, JOSE, MARCIE, DEVIN, JACK, ALEXCIA, BRANTLEY, CONNIE, PEYTON, DEREK, CHRISTOPHER, LESLIE, HASHIA, DEREK, KEVIN, NATALIE, BRENT, ANGEL, LUKE, TRICIA, CODY, MILTON, ROBERT, MICHAEL, LINDA, SETH, DAVID, MATTHEW, CRAIG, ROSE, EMILY, MAURICE, ROBIN, GERALD, CRAIG, TERENCE, MICHAEL, NATHAN, KATHLEEN, CAMERON, SHANNON, ROBIN, ERIN, VICKI, PAULA, DOUGLAS, THERESA, MIGUEL, CATHERINE, CATELYNN, ISAAK, DYLAN, BRUCE, EVERETTE, TRAVIS, JONATHAN, LELAND, WILBERTO, BRAXTON, DONTEZ, MELVIN, JAMES, NOAH, JODY, CLARENCE, LISA, KADEN, LONNIE, DOUGLAS, JUSTIN, BENJAMIN, ALLAN, JORDAN, GRACE, CHRISTOPHER, TINA, SYLINA, JONI, JULIE, LAURA, ERIC, NEOMAR, LAURI, ADAM, NICHOLAS, MARK, SHIRLEY, STACEY, RONALD, THEODORE, CHRISTOPHER, VICTOR, TRACY, JAMES, CHRIS, TAMMY, JOSE, BEVERLY, RUBEN, MARY, MELVIN, JUSTINA, STEPHEN, MYRNA, ANTHONY, NICHOLAS, NICHOLAS, MANUEL, HEATHER, ANNALYSIA, JOSEPH, LUCILLE, MICHELLE, NALANI, JAIDEN, RAGGIE, RYAN, RICARDO, NATHAN, LANDEN, MARLENE, KENNETH LOUIS, NICHOLAS, MICHAEL, LESTER, KAY, SEAN, JAMES, NEIL, JOSEPH, JESSICA, MIA, NANCY, THEO, TIRENO, DOUGLAS, JEFFERY, WALTER, MARCUS, MORGAN, JEFFREY, ERNEST, ROBERT, TARA, NAVY, JOHN, ABDULLAH, HENRY, NICOLE, MITCHELL, THOMAS, OMOTOPE, LAWRENCE, CHARLES, NOAH, RONALD, ORLEN, PAYTON, DONALD, SYLVIA, LOIS, AARON, DYLAN, CHARLES, BRAD, RYAN, MEISA, CATELYNN, SEAN, CLARENCE, KEVIN, JOSE, ARIANNA, ERIC, BETTY, RICHARD, JESSE, JAMES, ROBERT, RANDY, EDWIN, MANUEL, LARRY, JARROD, KRISTINA, ASHLEY, TIMOTHY, MAXIMINO, JOSE, TODD, ZACHARY, MARIA, VIDADELFO, VIDADELFO, NORMA, ETHAN, LAURA, DIANE, JOSEPH, SALVADOR, LUTHER, ANIESHA, JUSTIN, ROBERT, ZACHARY, JOYCE, BRAYAN, KATHLEEN, DAVID, KAY, NOAH, THEO, TIRENO, DYLAN, TARA, RICKY, STEVEN, JANA, GABRIEL, JUSTIN, JAMES, EDDIE, LINDA, MICHAEL, STEPHEN, JOSE GUADALUPE, CAROLYN, ROBERT, TONY, CHERYL, CAROLINE, RODRIGO, BENNY, CORA, STEVEN, DALTON, NATALIE, NEIL, NANCY, DONALD, MYRNA, ANNALYSIA, MICHELLE, RAGGIE, PHILIP, RYAN, RICARDO, NATHAN, LANDEN, KENNETH LOUIS, NICHOLAS, SELENA, ERIK, PEYTON, RONALD, NALANI, JAIDEN, DAVID, MICHAEL, EDWARD, CALEB, JOSEPH, KATELAN, JOSEPH, KIMBERLY, JEFFERY, SCOTT,

Someone is killed or seriously injured in a crash in Indiana every 93 minutes (2024)

$21.5 Billion Cost to Indiana (2023)

in Medical Bills, Property Damage & Lost Wages (FHWA Crash Costs, Preliminary)

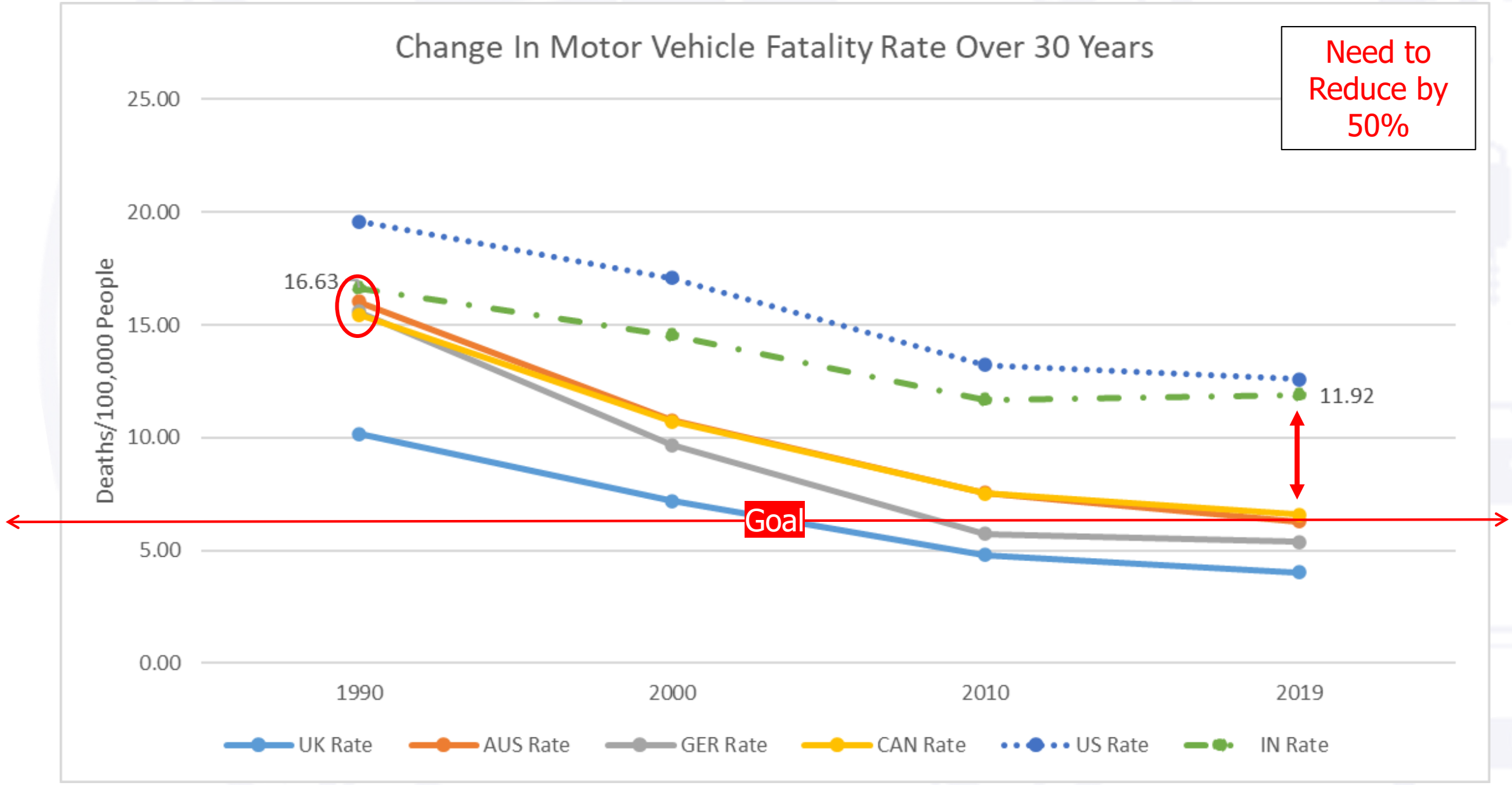
Indiana Safety Performance

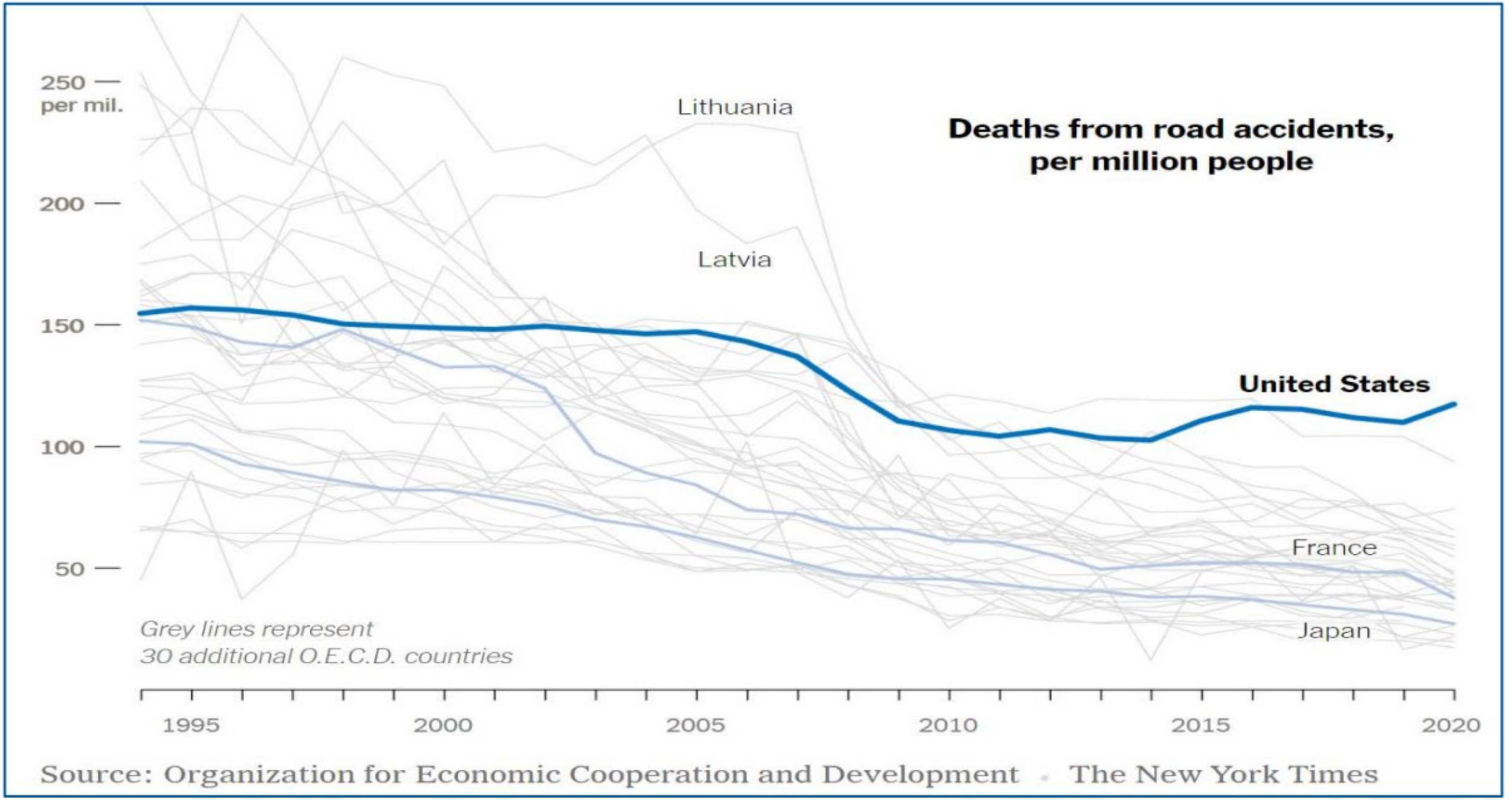


16,943 Hoosiers Killed by Motor Vehicles Over 20 years

Is This Good Performance?

How Does Indiana Compare?



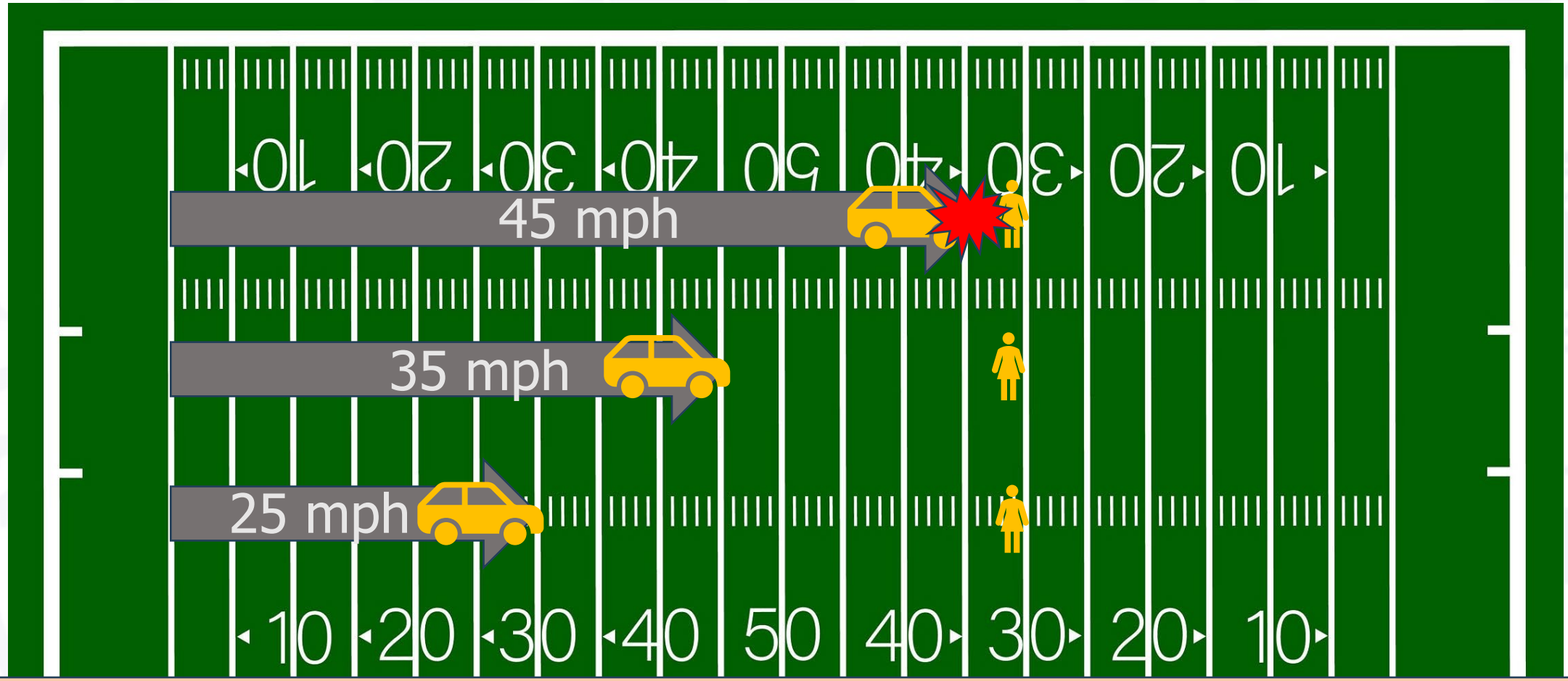

Deaths from road accidents, per million people
250 per mil.
200
150
100
50
Lithuania
Latvia
United States
France
Japan
Grey lines represent 30 additional O.E.C.D. countries
1995
2000
2005
2010
2015
2020
Source: Organization for Economic Cooperation and Development • The New York Times

Outline

- Indiana Statewide Safety Trends
- Humans Make Mistakes & Speed Kills
- How a Safety Project Becomes a Safety Project
- Do Safety Projects Even Work?
- Low Cost and High Benefit
- New Initiatives

What is the number one factor in determining the risk of injury and death?

What Determines Risk of a Crash?



$$Stopping\ Distance\ = 1.47 * \boldsymbol{speed} * reaction\ time + 1.075 * \frac{\boldsymbol{speed}^2}{deceleration}$$

(Chance of Crash)

What Determines Risk of Injury or Death in a Crash?

$$Energy = 0.5 * mass * \boldsymbol{speed^2}$$

(Chance of Injury)

IIHS Standard Vehicle Collision Test #1

Moderate Overlap Front Test (2.0) at ?? mph


0:00 / 1:07

IIHS Standard Vehicle Collision Test #1

Moderate Overlap Front Test (2.0) at ?? mph

How Fast?

IIHS Standard Vehicle Collision Test #1

Moderate Overlap Front Test (2.0) at 40 mph

How Fast?

IIHS Standard Vehicle Collision Test #2

Side Impact Test (2.0) at ?? mph


0:00 / 0:48

IIHS Standard Vehicle Collision Test #2

Side Impact Test (2.0) at
?? mph

How Fast?

IIHS Standard Vehicle Collision Test #2

Side Impact Test (2.0) at
37 mph

How Fast?

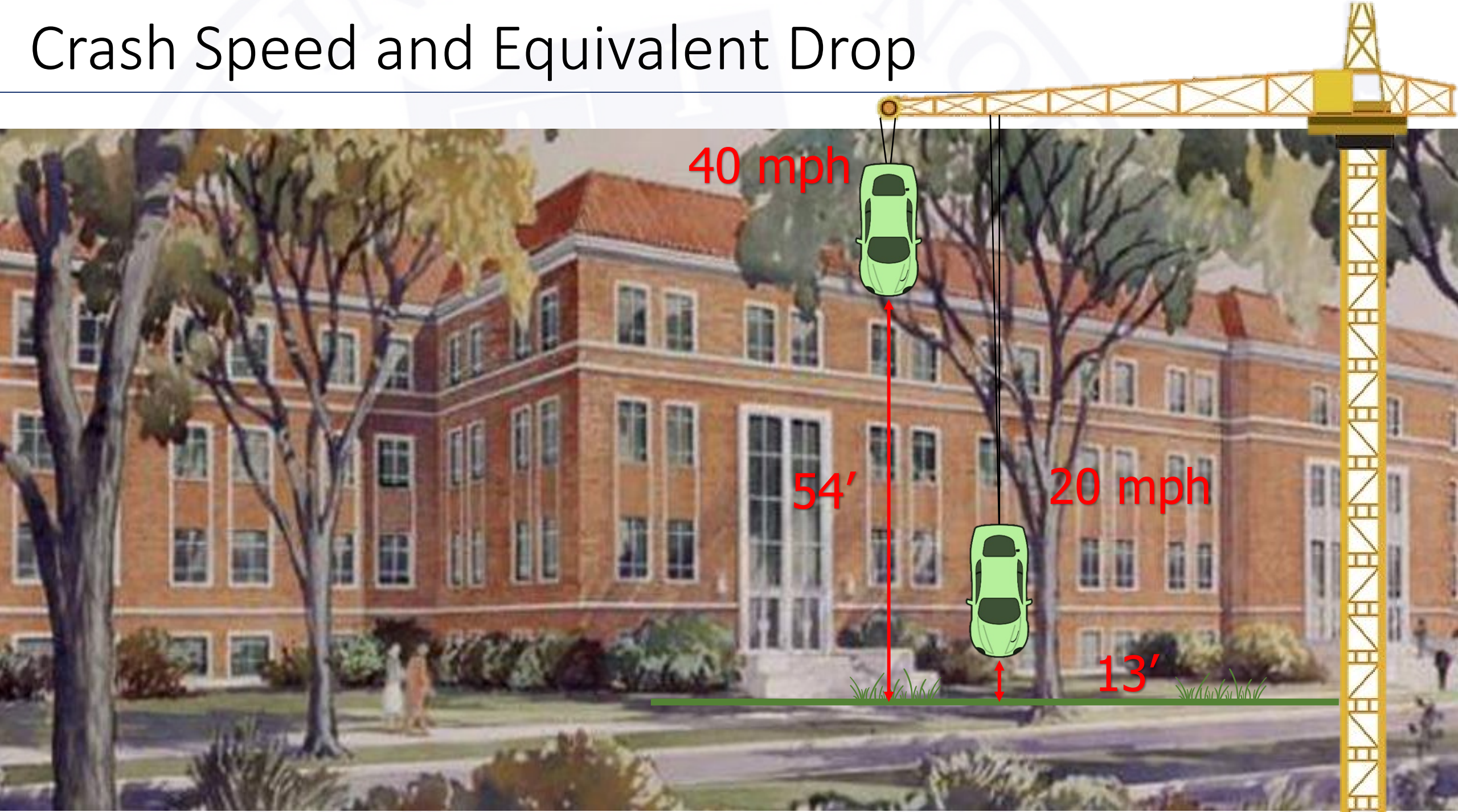
Why are vehicles not tested at higher speeds?

- Crashes at 45+ mph are more likely to be non-survivable regardless…
- Crashes at 45+ mph are too likely to damage the test dummy…

“What was your fastest speed coming to this conference?”

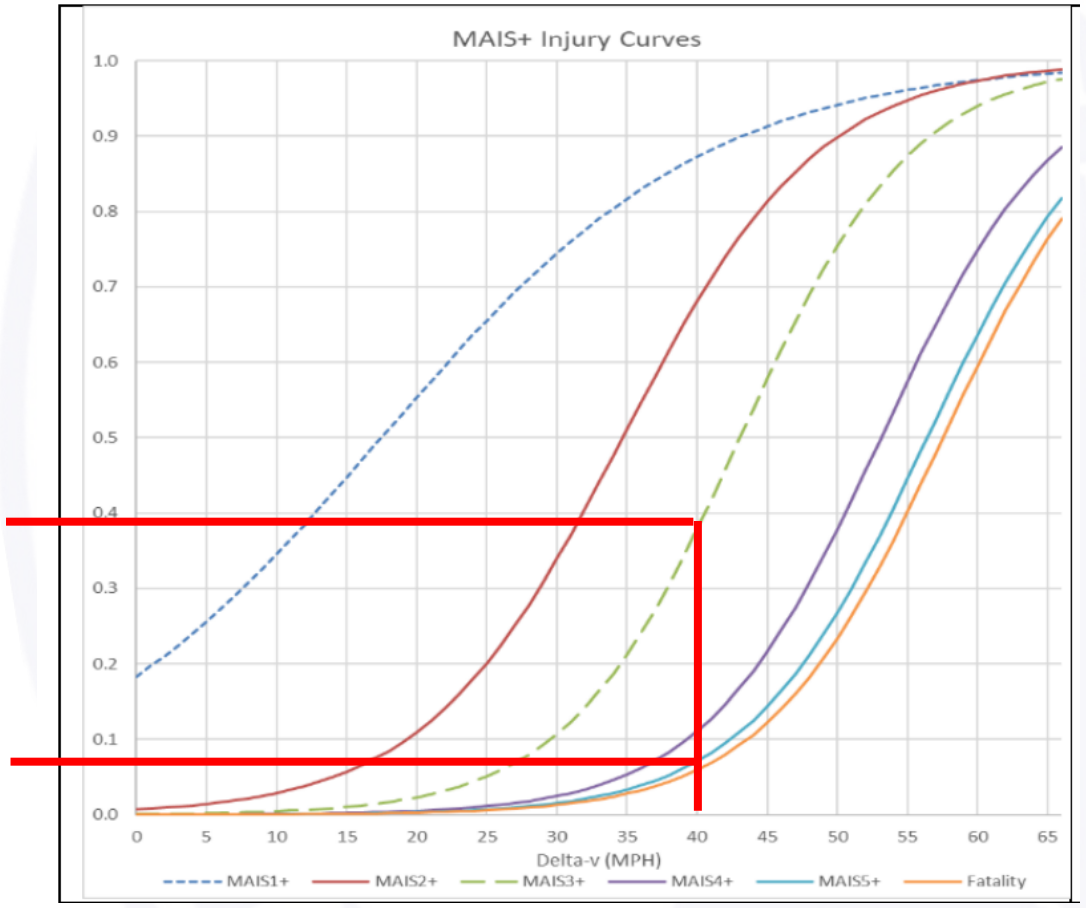
What a crash test at 70 mph might look like:

Crash Speed and Equivalent Drop



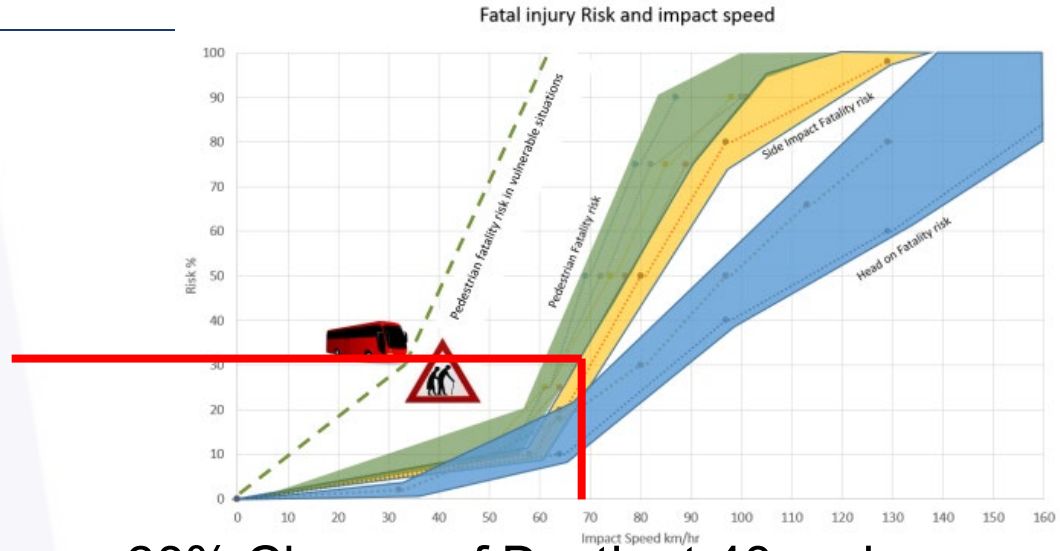
Speed Kills

Belted! Motorist Risk (Frontal Impact)



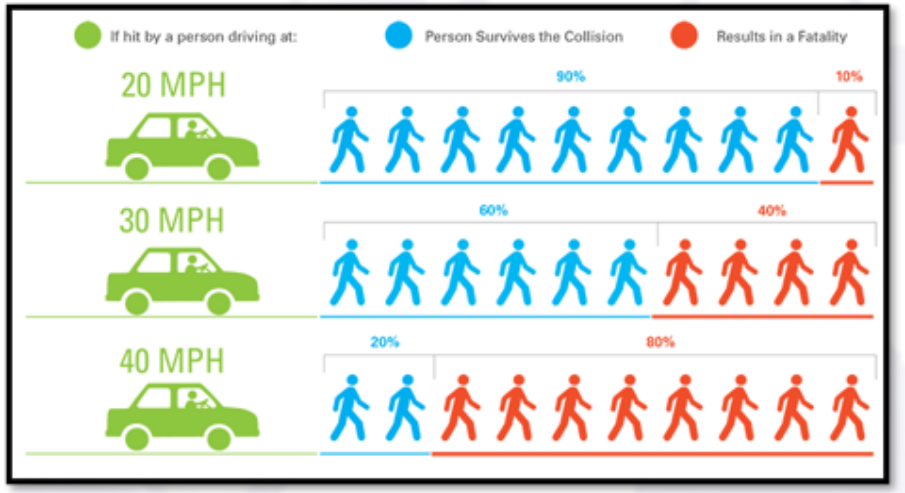
8% Chance of Death at 40 mph
38% Chance of Serious Injury+ at 40 mph

Motorist Risk (Side Impact)



30% Chance of Death at 40 mph (Mackie Research)

Pedestrian Risk

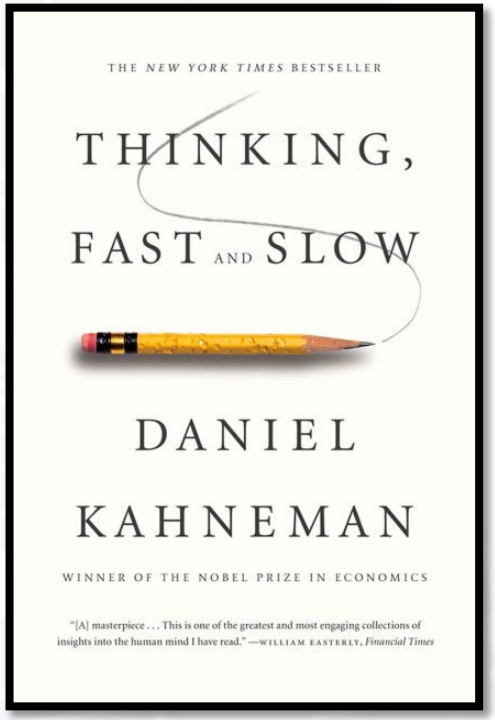


80% Chance of Death at 40 mph

Humans Make Mistakes

Brain System #1

- "Autopilot"
- Distracted, Focused Elsewhere
- Great at repetitive tasks
- Reaction Time ~ (0.5 to 1.0 sec)
- Bad at surprises



Brain System #2

- Deliberative Thinking
- Focused on the Task
- Great at Novel Tasks
- Reaction Time ~ (0.15 to 0.25 sec)
- Ready for Anything

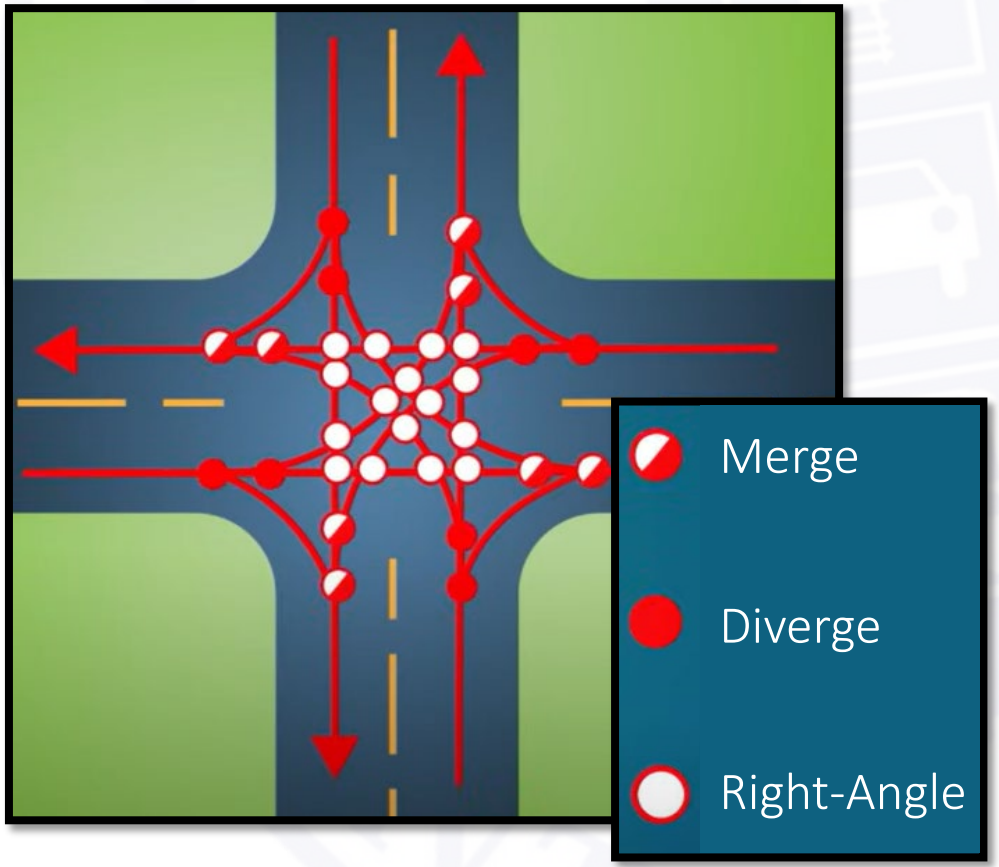
- When drivers are tired, distracted, on the phone, bored, etc. they slip into System #1.
- In System #1, may travel 45 ft extra before braking at 40 mph compared to System #2

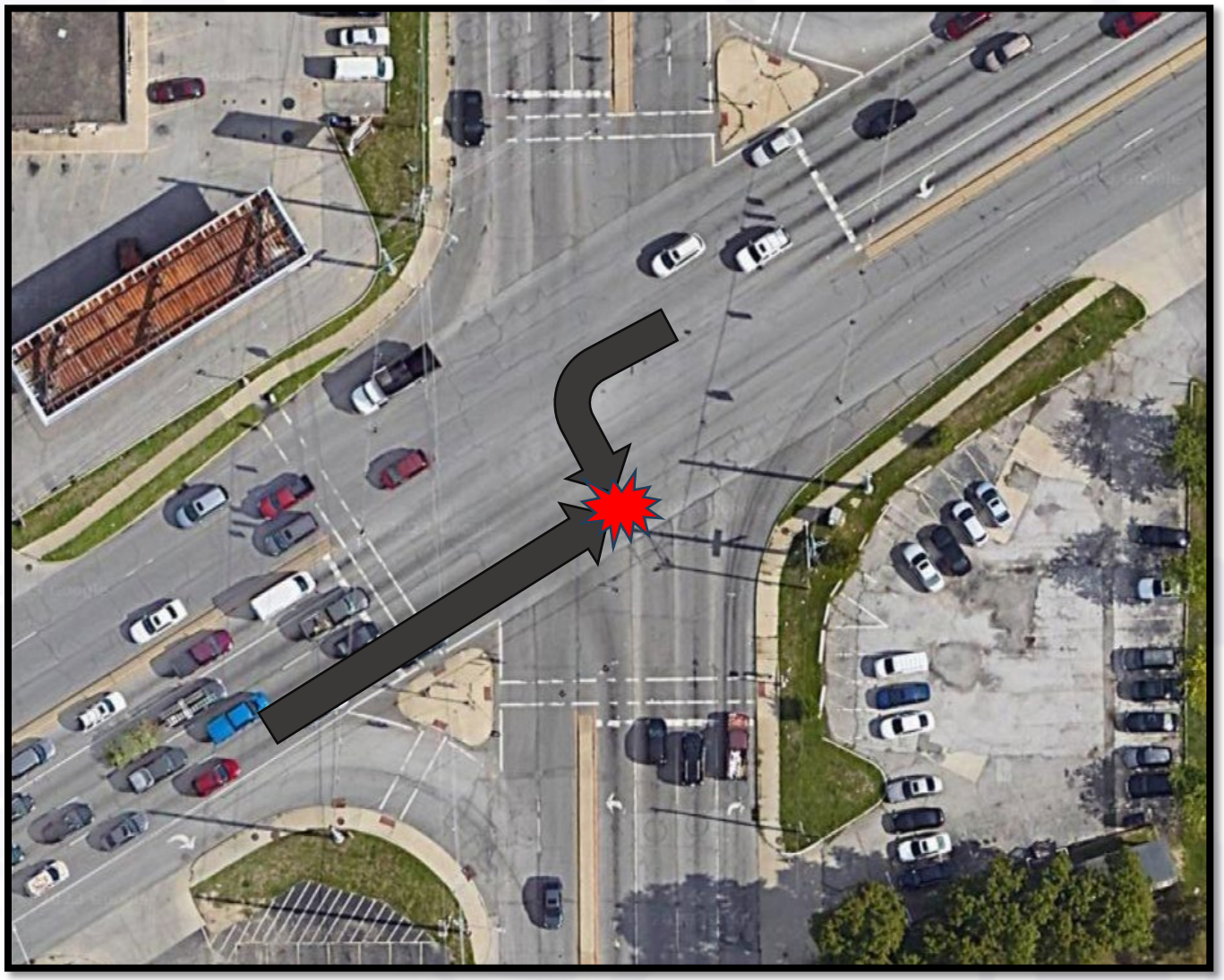

Drivers look at their phone for an average of 5 seconds while texting
At 40 mph, a vehicle travels for 293 ft in 5 seconds
Humans Make Mistakes

Intersection Safety

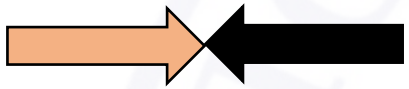
Conflict Point

Definition: A location in the roadway where two vehicle paths could cross.



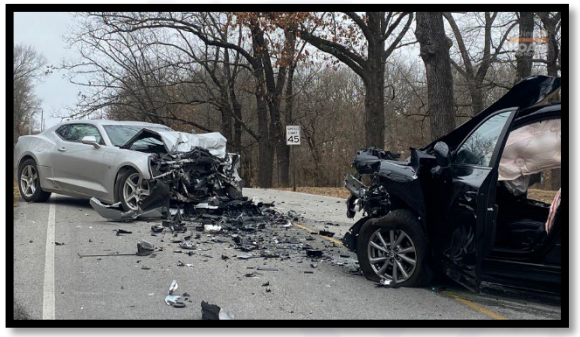


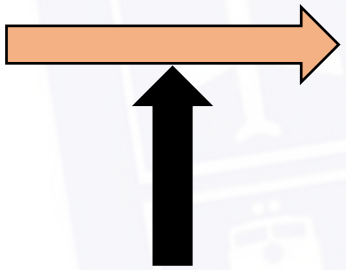
Angle of Collision Matters!



Highest Energy Transfer

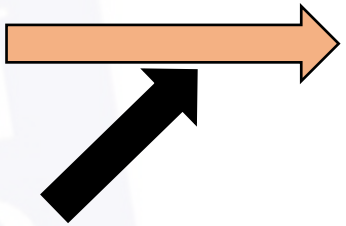
Highest Injury Risk





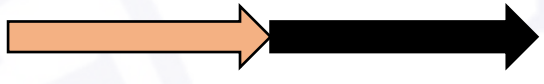
High Energy Transfer

High Injury Risk



Less Energy Transfer

Less Injury Risk

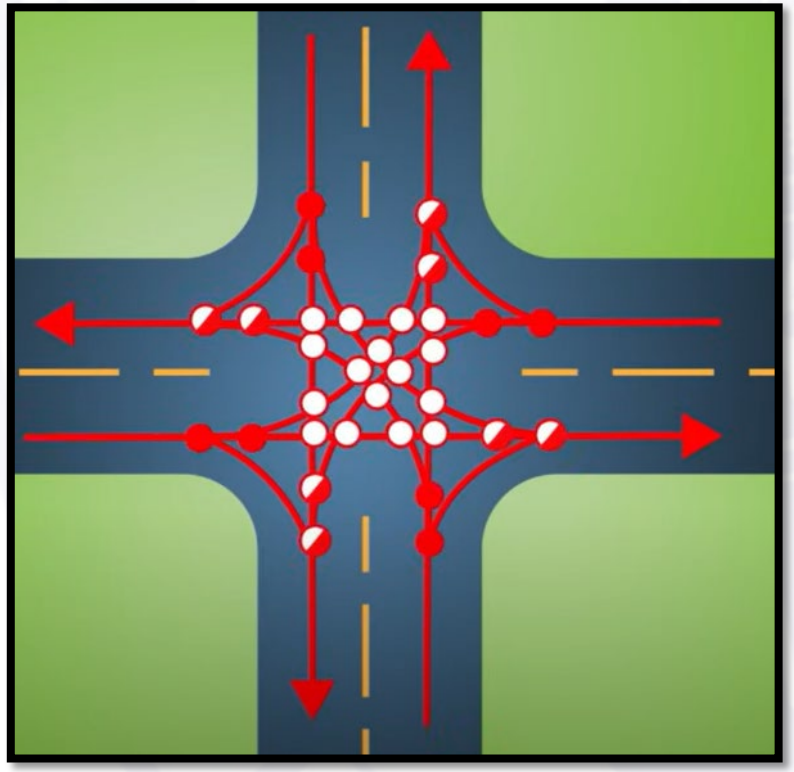


Low Energy Transfer

Low Injury Risk

Conflict Points and Safety

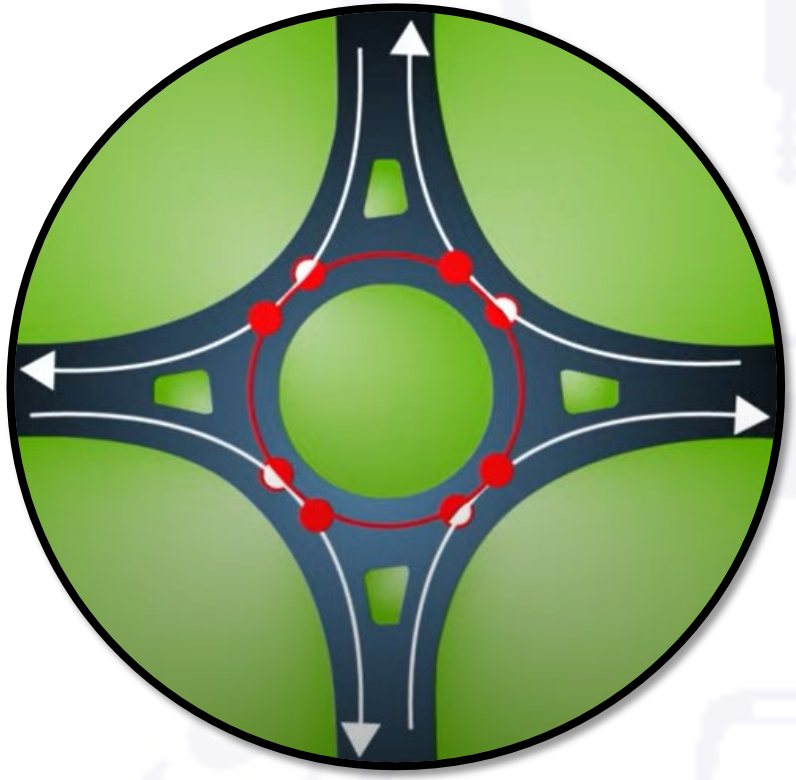
- **Conflict points directly correlate to safety performance**
- Right-angle conflict points have the greatest risk



32 Conflict Points (16 right-angle)

VS

Roundabouts have ~80% fewer injuries and deaths than a standard intersection



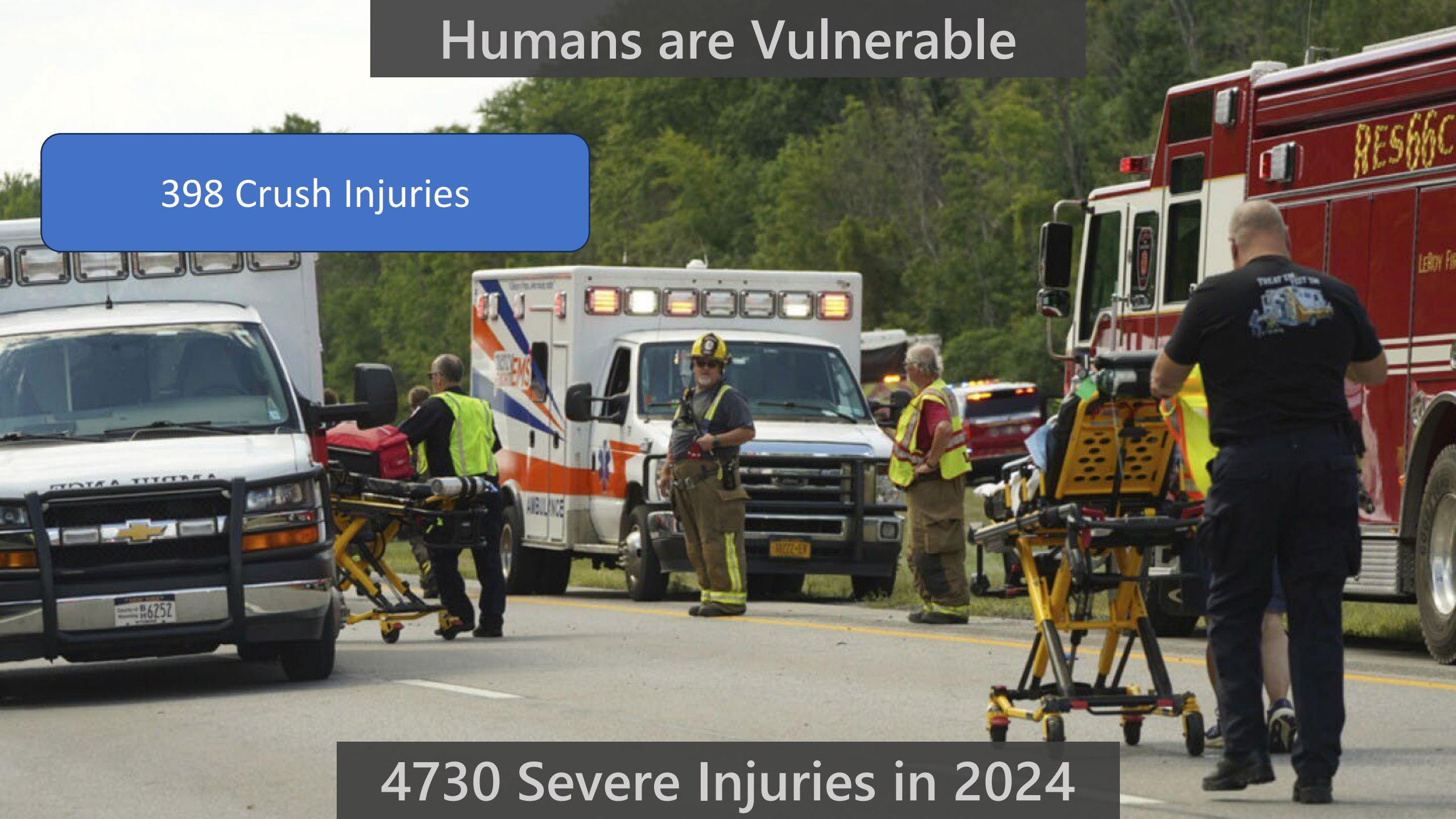
8 Conflict Points (0 right-angle)

Humans are Vulnerable

4730 Severe Injuries in 2024

Humans are Vulnerable

398 Crush Injuries



4730 Severe Injuries in 2024

Humans are Vulnerable

398 Crush Injuries

2001 Fractures/Dislocations

4730 Severe Injuries in 2024

Humans are Vulnerable

398 Crush Injuries

2001 Fractures/Dislocations

911 Internal Organ Injuries

4730 Severe Injuries in 2024

Humans are Vulnerable

- 398 Crush Injuries
- 2001 Fractures/Dislocations
- 911 Internal Organ Injuries
- 43 People Paralyzed

4730 Severe Injuries in 2024

Humans are Vulnerable

398 Crush Injuries

658 People with Severe Bleeding

2001 Fractures/Dislocations

911 Internal Organ Injuries

43 People Paralyzed

4730 Severe Injuries in 2024

Humans are Vulnerable

398 Crush Injuries

658 People with Severe Bleeding

2001 Fractures/Dislocations

11 Severe Burns

911 Internal Organ Injuries

43 People Paralyzed

4730 Severe Injuries in 2024

Humans are Vulnerable

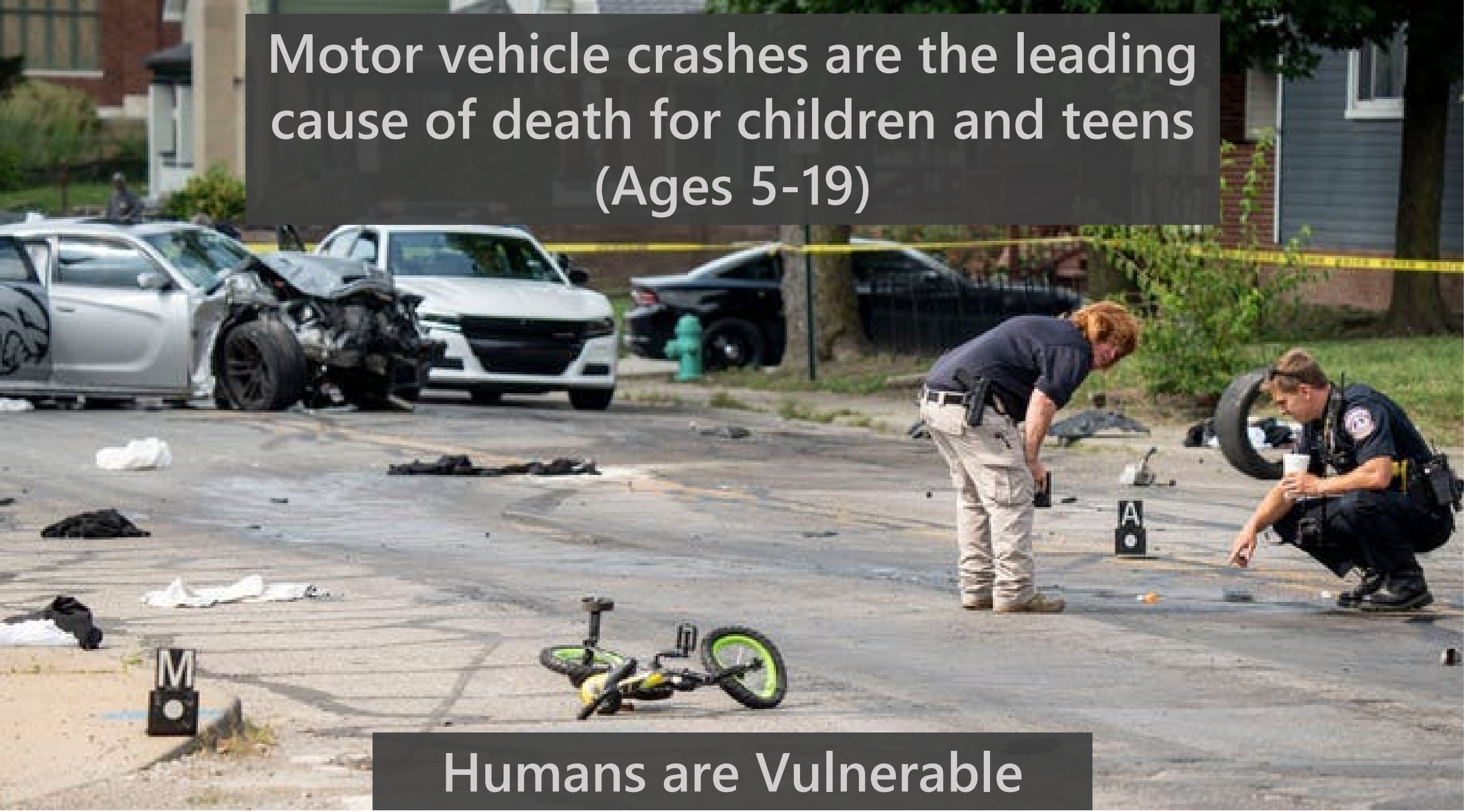
- 398 Crush Injuries
- 658 People with Severe Bleeding
- 2001 Fractures/Dislocations
- 11 Severe Burns
- 911 Internal Organ Injuries
- 26 Severed Limbs
- 43 People Paralyzed

4730 Severe Injuries in 2024

Humans are Vulnerable

- 398 Crush Injuries
- 658 People with Severe Bleeding
- 2001 Fractures/Dislocations
- 11 Severe Burns
- 911 Internal Organ Injuries
- 26 Severed Limbs
- 43 People Paralyzed
- 682 People Knocked Unconscious

4730 Severe Injuries in 2024


Motor vehicle crashes are the leading cause of death for children and teens (Ages 5-19)
Humans are Vulnerable

Humans are Vulnerable

Only 6% of motorists don't wear a seat belt, but 46% of people killed in crashes were unbelted (2019)

Humans are Vulnerable

Motorcycles make up 2% of collisions but account for 15.4% of deaths (2023)

Outline

- Indiana Statewide Safety Trends
- Humans Make Mistakes & Speed Kills
- How a Safety Project Becomes a Safety Project
- Do Safety Projects Even Work?
- Low Cost and High Benefit
- New Initiatives

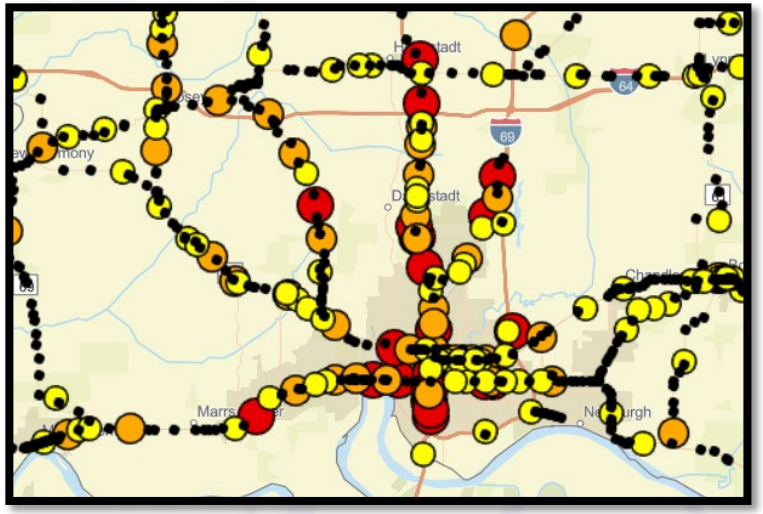
How are Safety Issues Identified

Every Crash Results in a Police Report

200,000+ Crash Reports / Year

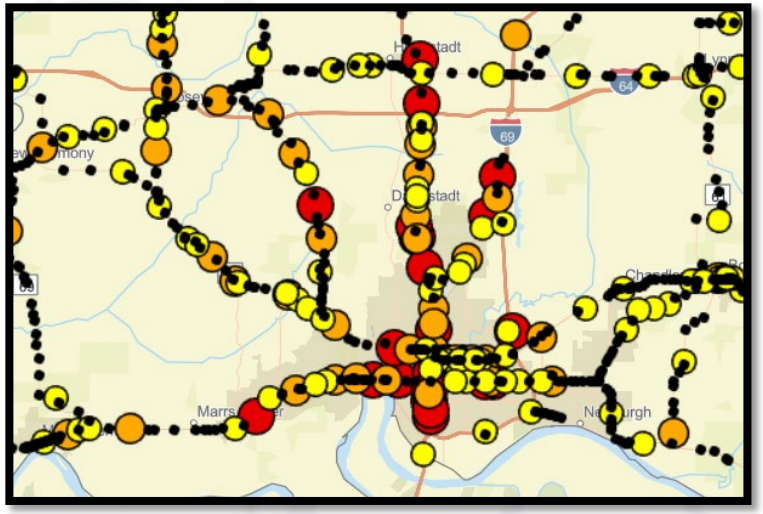
200,000+ Crash Reports / Year

Network Screening

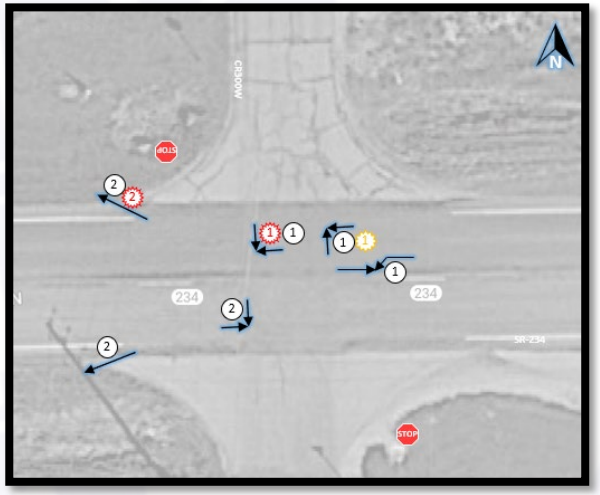


200,000+ Crash Reports / Year

Network Screening

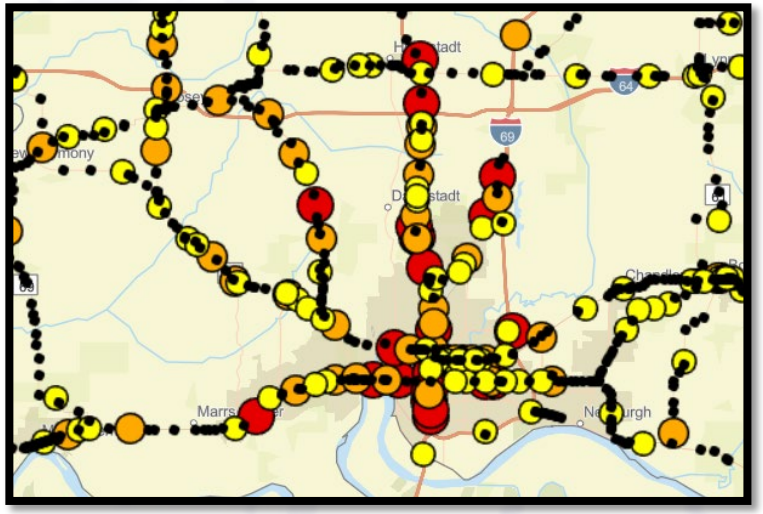


Individual Safety Studies

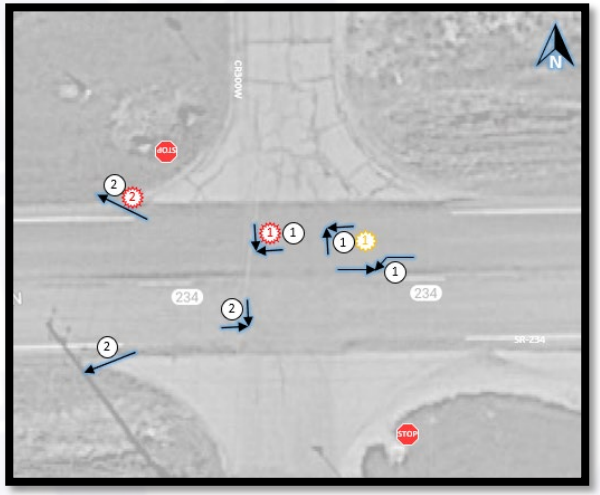


200,000+ Crash Reports / Year

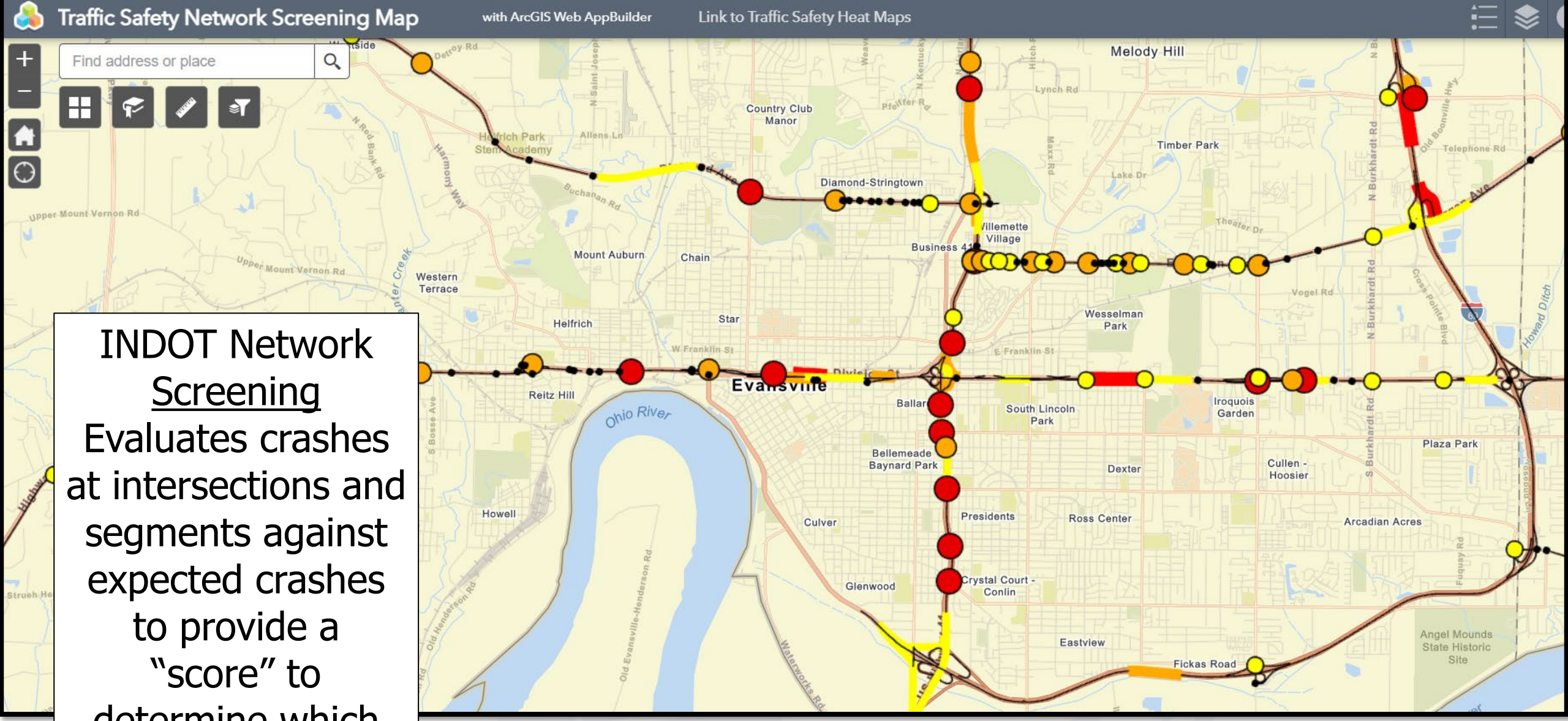
Network Screening



Individual Safety Studies



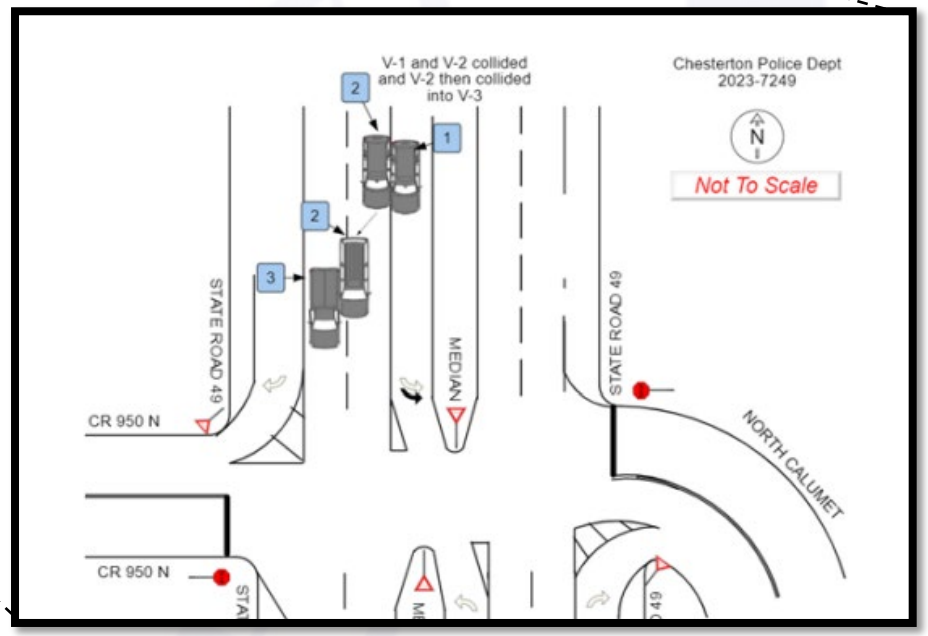
Funded Safety Projects



INDOT Network Screening

Evaluates crashes at intersections and segments against expected crashes to provide a "score" to determine which intersections are studied each year.

Every police report can be diagramed to identify patterns at a location



SR 49 at CR 950 N (Porter Co.) (3 Years)

1 Serious Injury

1 Other Injury

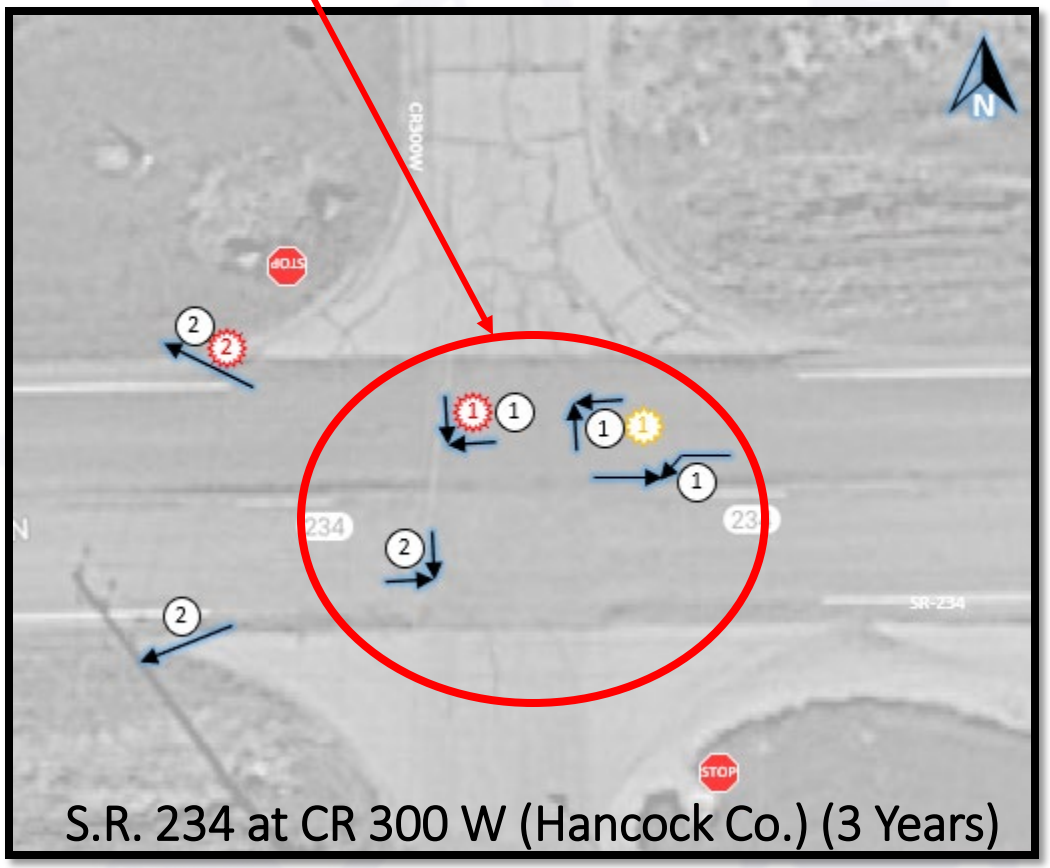
(1) Property Damage

How Are “Solutions” Selected?

1. Identify locations with problems
2. Determine the cause at a location
3. Evaluate numerous alternatives and compare
4. Score the selected alternative
   i. Scoring process evaluates benefits, costs, & impacts
   ii. Calculates a value of 1-100 based on merit
   iii. All potential projects in the state are ranked
5. Highest scoring projects are funded as the budget allows (~30% of submitted)

Crash Data Used For Every Step!

7 Angle Crashes: Roundabout Candidate



S.R. 234 at CR 300 W (Hancock Co.) (3 Years)

Outline

- Indiana Statewide Safety Trends
- Humans Make Mistakes & Speed Kills
- How a Safety Project Becomes a Safety Project
- Do Safety Projects Even Work?
- Low Cost and High Benefit
- New Initiatives

Median U-turns

100% Reduction in Serious Injury & Fatality

Before:

Proven Safety Countermeasure

Case Study

US 231 at SR 62 S JCT (2016)

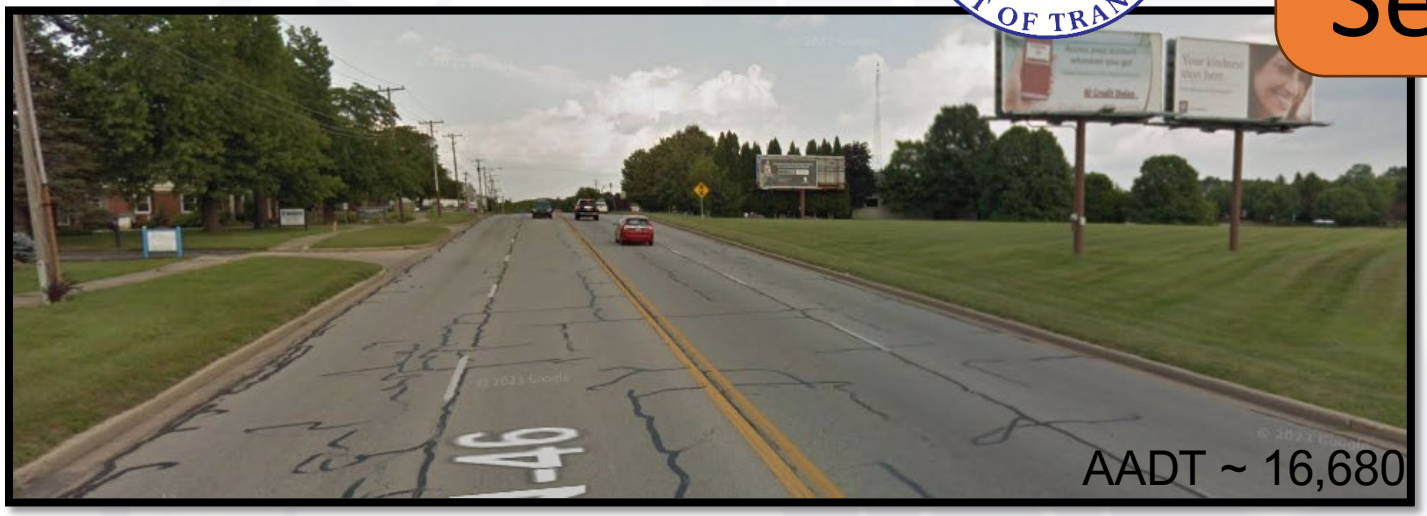
- Before Serious Crashes/year: 2.25
- After Serious Crashes/year: 0
- Project Cost: $2,832,000
- 20-Year Net Benefit: $471M
- Benefit/Cost Ratio: 100:1

After:

Road Diet

83% Reduction in Serious Injury & Fatality

Before:



Proven Safety Countermeasure

Case Study

SR 46 Bloomington (2019)

- Before Serious Crashes/year: 12
- After Serious Crashes/year: 2
- Project Cost: <$100k (w/ Paving)
- 20-Year Net Benefit: $190M
- Benefit/Cost Ratio: 1547:1

After:

2025 INDOT Traffic Safety Award Winner

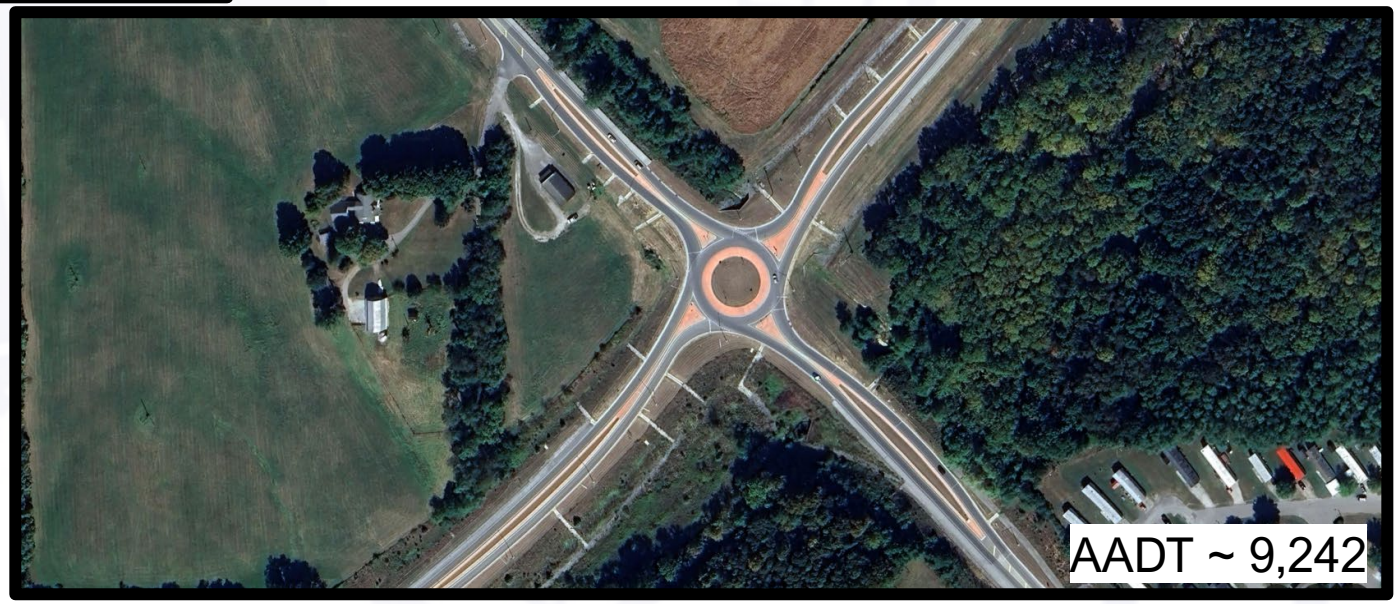
Roundabouts

100% Reduction in Serious Injury & Fatality

Before:

Proven Safety Countermeasure

After:



Case Study

SR 60 Intersection at Salem Bypass (2021)

- Before Serious Crashes/year: 2.33
- After Serious Crashes/year: 0
- Project Cost: $2,119,870
- 20-Year Net Benefit: $44M
- Benefit/Cost Ratio: 13:1

Access Control

58% Reduction in Serious Injury & Fatality

Before:

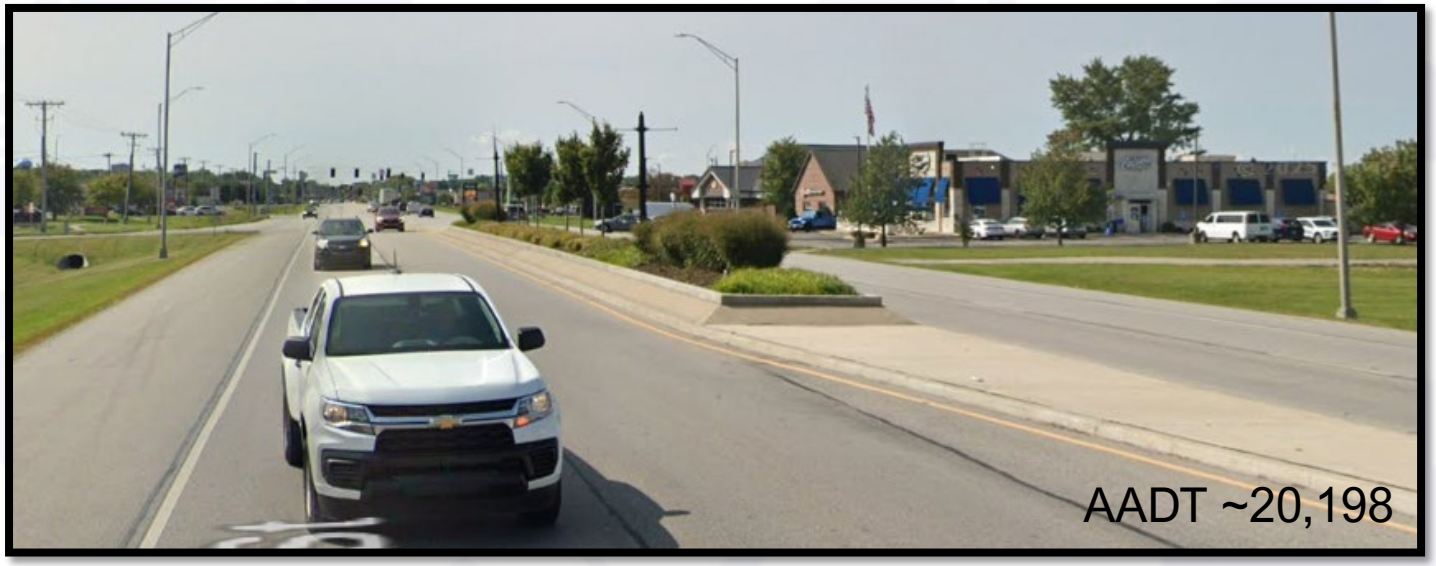
Proven Safety Countermeasure

Case Study

SR 9 Greenfield (2020)

- Before Serious Crashes/year: 16
- After Serious Crashes/year: 6.67
- Project Cost: $965k (w/ Paving)
- 20-Year Net Benefit: $168M
- Benefit/Cost Ratio: 174:1

After:



INDOT Spot Safety Improvements from the call for projects have an average benefit cost ratio of:

$9.65 in crash costs prevented for every $1 spent.

Outline

- Indiana Statewide Safety Trends
- Humans Make Mistakes & Speed Kills
- How a Safety Project Becomes a Safety Project
- Do Safety Projects Even Work?
- Low Cost and High Benefit
- New Initiatives


Fatal crash *locations* might be random…
but fatal crash *patterns* are not.

Systemic Safety

1. Low Cost
2. Multiple Locations
3. Can Be Based on Geometrics

Low Speed Urban Improvements

All-Way Stop Conversion

92% Reduction in Severe Injury & Fatality

2023 National Safety Award Winner

The Problem

- High Speed Traffic vs Low Speed Traffic
- Random Severe Crashes (Not Enough for Project)
- Right Angle Collisions
- Limited Sight Distance (Crops?)
- 20% of Rural Deaths Are At Intersections

Vehicles are only tested at 37 mph.

16% Reduction in Injury and Fatality

Curve Treatments

Options

Chevrons
Delineators
Clear Zone
Curve Warning Signs
Advisory Speeds
Correcting Crown/Super Elevation (More Costly)
HFST (More Costly)

The Problem

- High Speed Traffic Required to Slow Suddenly
- Limited Clear Zone
- Limited Pavement Friction in Places
- Poor Super Elevation / Crown
- Risk of Head On Crash & Run Off Road Crash
- Nighttime Visibility Issues
- 25% of Deaths Are In Curves (USA NCHRP 500.7)

Rumble Strips / Stripes

44.2% Reduction in Injury and Fatality

The Problem

- High Speed Traffic
- Projects are very expensive (add shoulders)
- Limited Clear Zone
- Risk of Head-on crash & Run Off Road Crash
- Nighttime Visibility Issues
- **63% of Local Rural Deaths Are Lane Departure**

Stop Controlled Intersection Visibility Improvement

27% Reduction in Injury and Fatality

Double Stop Signs
Flashing Stop Signs (optional)
Stop Ahead Signs
Reflective Strips
Side Road Centerline
Side Road Stop Bar

The Problem

- High Speed Traffic vs Low Speed Traffic
- Random Severe Crashes (Not Enough for Project)
- Right Angle Collisions
- Drivers Sometimes Miss Stop Signs
- 20% of Rural Deaths Are At Intersections

Vehicles are only tested at 37 mph.

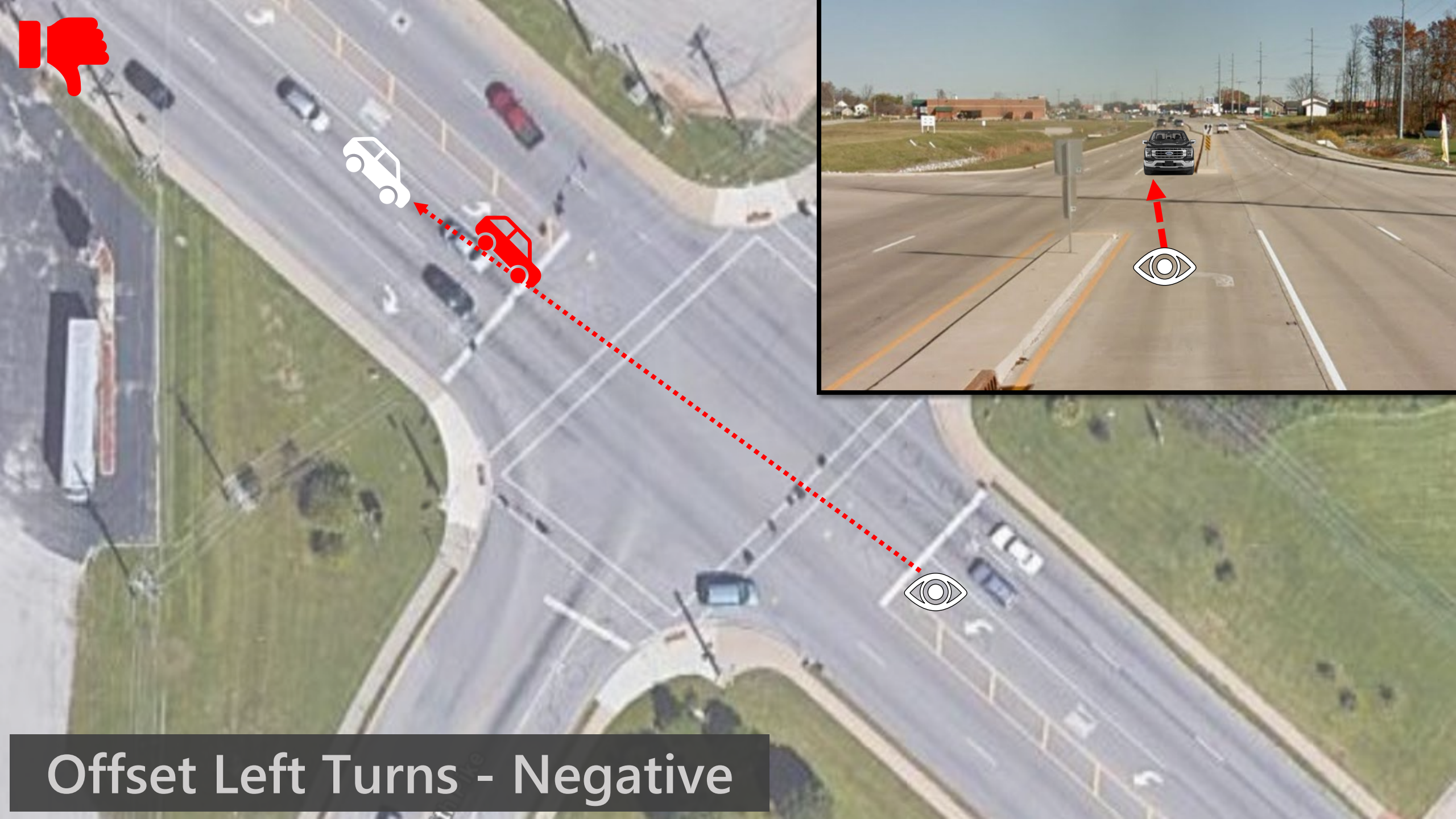
Offset Left Turns (w/ markings)

35.6% Reduction in Injury and Fatality

The Problem

- High Speed Traffic vs Low Speed Traffic
- Right Angle Collisions
- Sight Distance and Gap Acceptance Issues
- 40% of Local Urban Deaths are Turning/Angle

Vehicles are only tested at 37 mph.


Offset Left Turns - Negative

Offset Left Turns - Positive

How Can Paving Projects Improve Safety?

How Can Paving Projects Improve Safety?

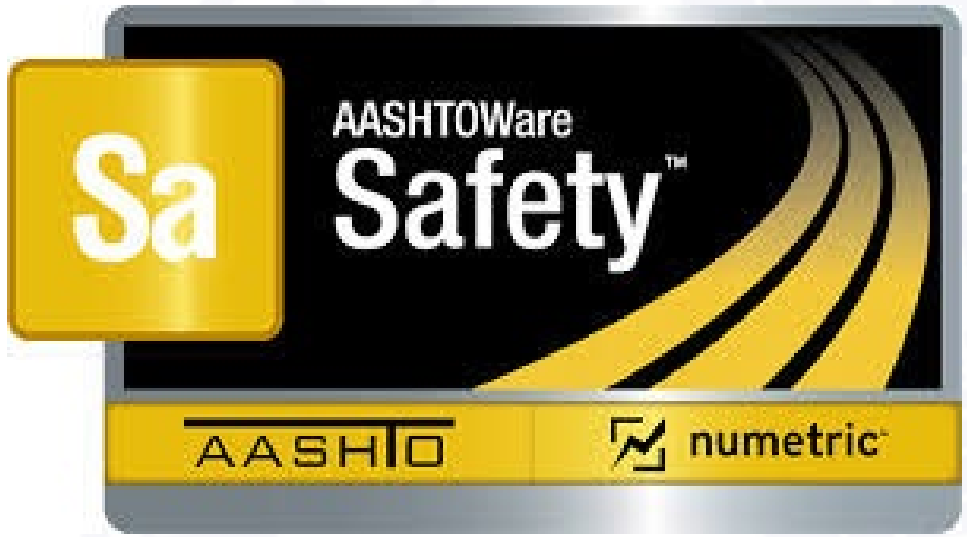
Roundabout Cost Savings

- Initiative started in 2024 to address rising RAB costs
- Up to 50% cost savings (SR 213 at SR 28, $2.3M vs $4.9M)

Outline

- Indiana Statewide Safety Trends
- Humans Make Mistakes & Speed Kills
- How a Safety Project Becomes a Safety Project
- Do Safety Projects Even Work?
- Low Cost and High Benefit
- New Initiatives

AASHTOWare Safety & Google AI



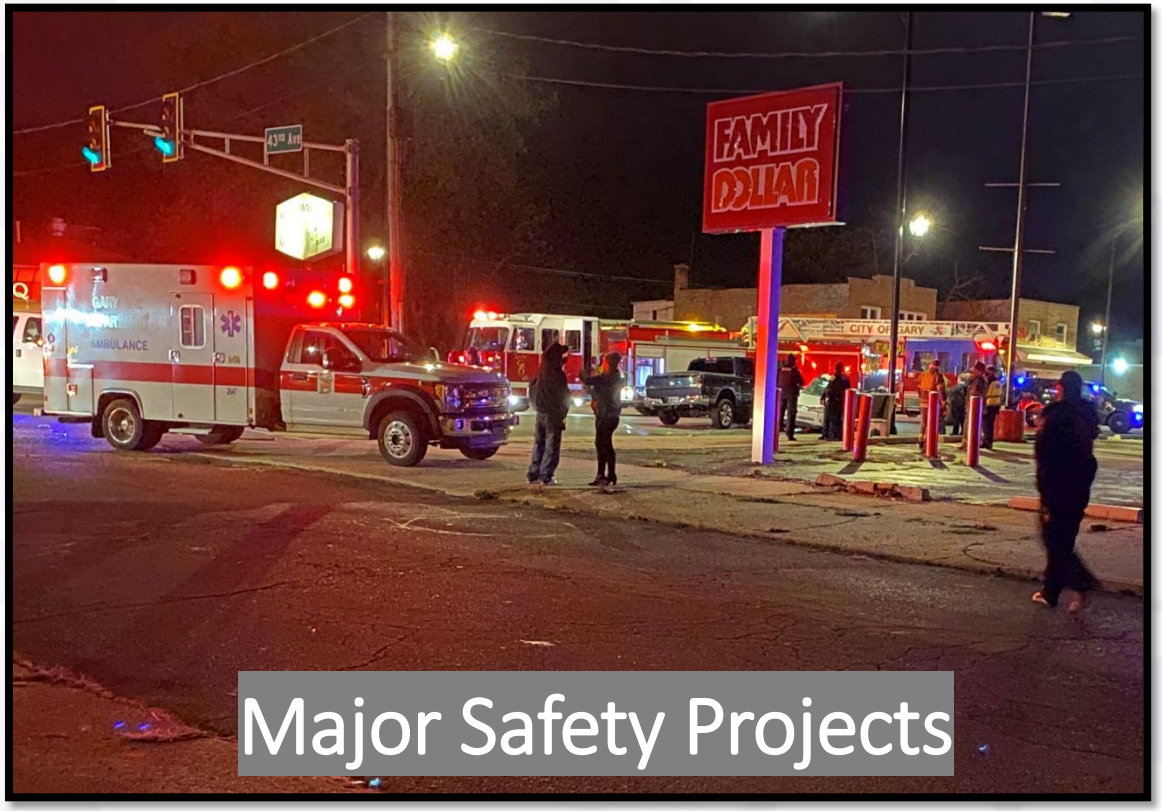
- Currently in Development
- RoadHAT Replacement
- For State and Local Governments
- Test Version May 2026
- Full Release Oct. 2026

- Currently Investigating
- Uses AI to correct LAT LONGs
- Will Feed Improved Data into AASHTOWare Safety
- Unknown Release Date

Google AI

Coordination with Pavement & Major Projects

Cost Savings by targeting paving corridors for bundled safety improvements



Tackling large corridors with high safety needs – one per year.

Context Based Design

FIGURE 2 FDOT CONTEXT CLASSIFICATIONS

C1-Natural
Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.

C2-Rural
Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.

C2T-Rural Town
Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.

C3R-Suburban Residential
Mostly residential uses within large blocks and a disconnected or sparse roadway network.

C3C-Suburban Commercial
Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network.

C4-Urban General
Mix of uses set within small blocks with a well-connected roadway network. May extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor or behind the uses fronting the roadway.

C5-Urban Center
Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community, town, or city.

C6-Urban Core
Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population >1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.

Roadways should be designed differently in different contexts.

How Do We Reach Our Goal?

Safety Culture

The Problem

- Acceptance of the situation
- This is how we have always done it
- Drivers will never change
- It isn’t my responsibility

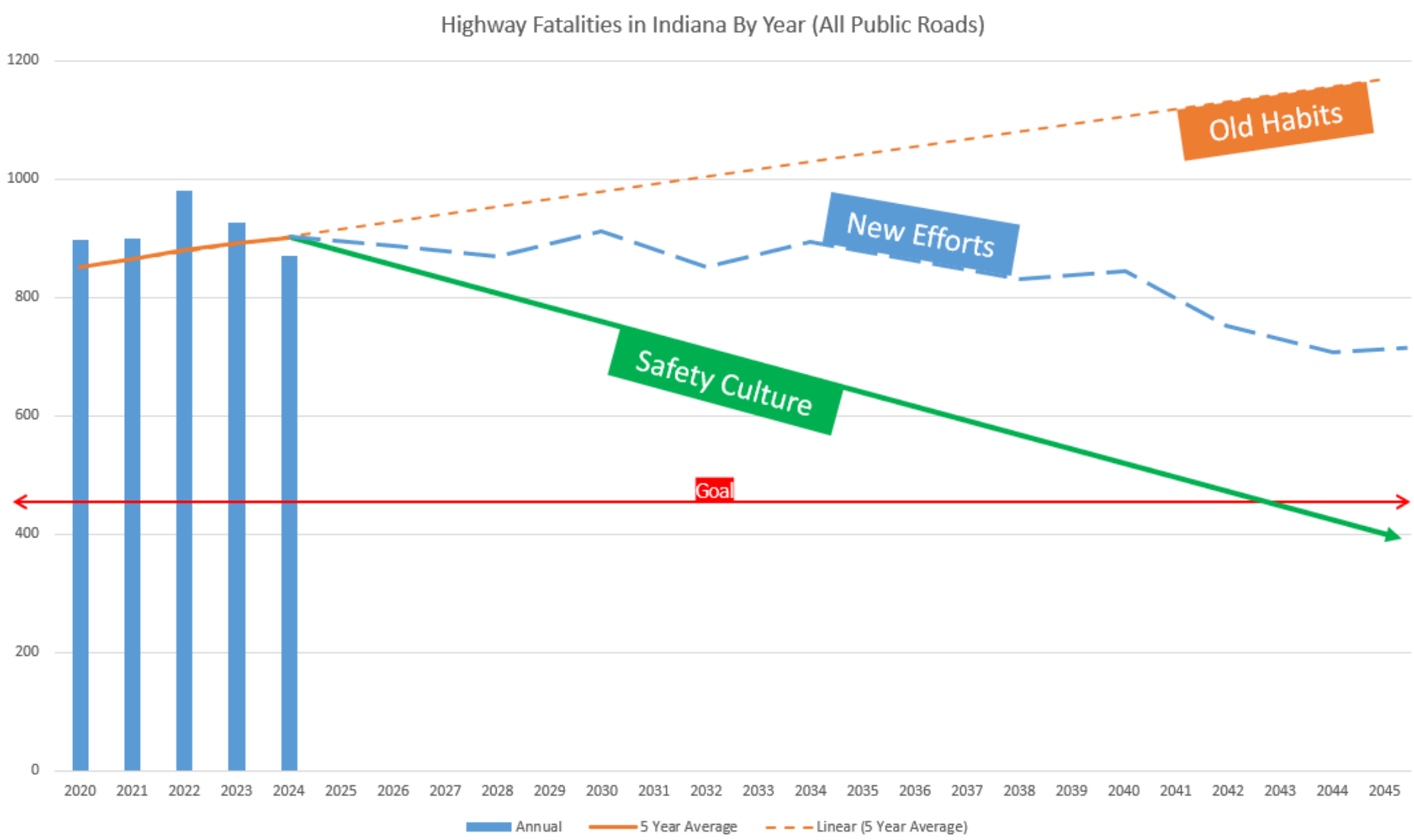
Safety Culture

Moving Forward

- Education for Drivers
  - Consequences
- Spreading the Word
  - Adding partners to the cause
- Cultural Understanding
  - High fatal crash numbers are unacceptable
- Everyone says we should take steps to reduce roadway deaths…

Do we Prioritize Safety when Money and Schedule are Tight?

- Spot Location
- Systemic
- Major Safety Projects
- Every Project Improves Traffic Safety Performance
- Leveraging the ENTIRE Program



A ***Safety Culture*** Makes Safety the Highest Priority and Base Expectation

BUCKLE UP

PHONE DOWN

Questions?

Taylor Ruble – truble@indot.in.gov

Dan McCoy- dmccoy@indot.in.gov