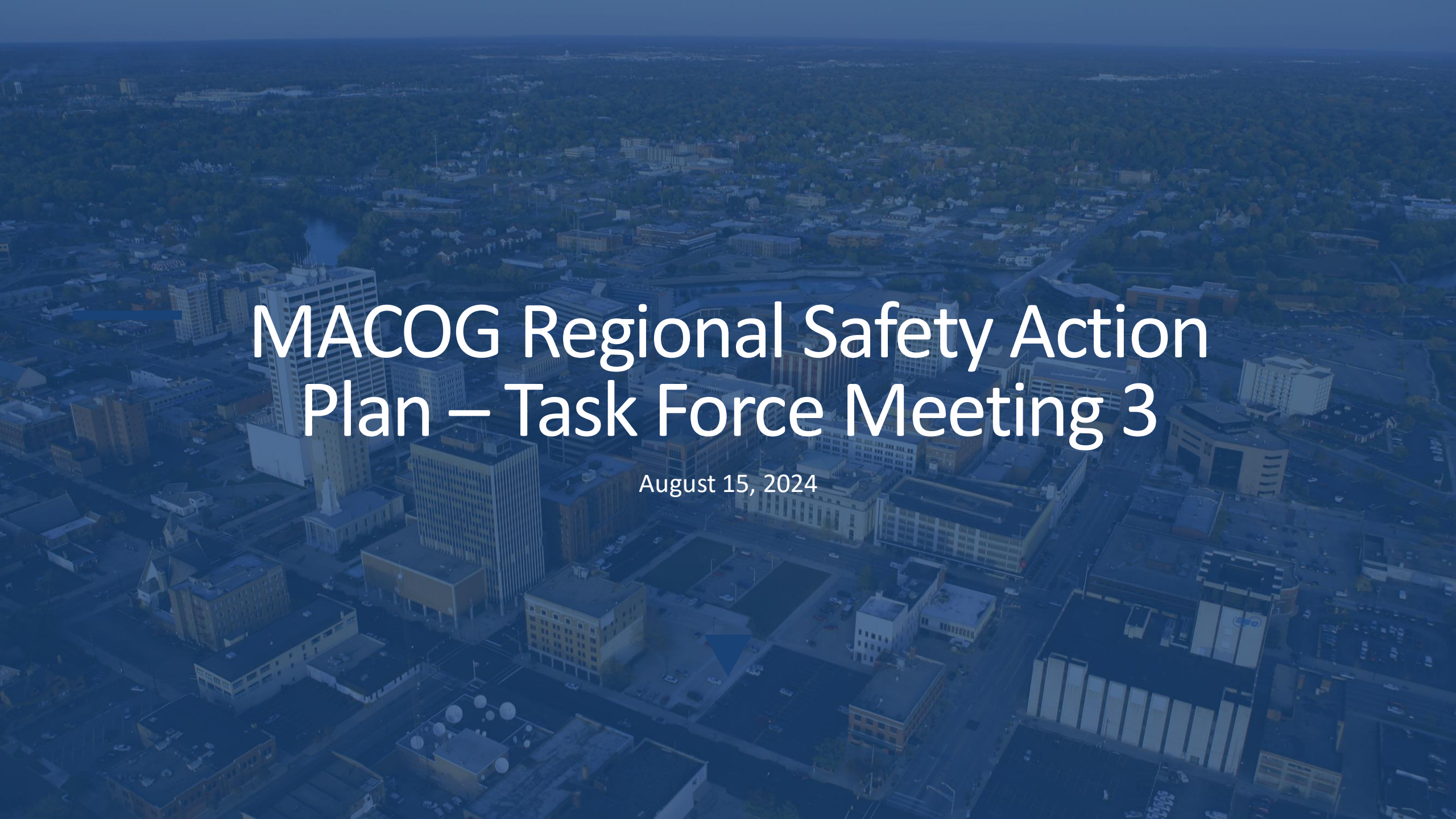


An aerial photograph of a city, likely Columbus, Ohio, showing a mix of urban buildings, green spaces, and a river. The image is overlaid with a semi-transparent blue filter. A blue triangle points from the left edge towards the text.

MACOG Regional Safety Action Plan – Task Force Meeting 3

August 15, 2024

Why are we here?



Our Current Reality

Traffic fatalities are a public health crisis *affecting all road users*.

1.3M

Lives lost globally each year from traffic crashes

Source: UN [Decade of Action for Road Safety 2021-2030](#)

40,990

Lives lost on US roads in 2023

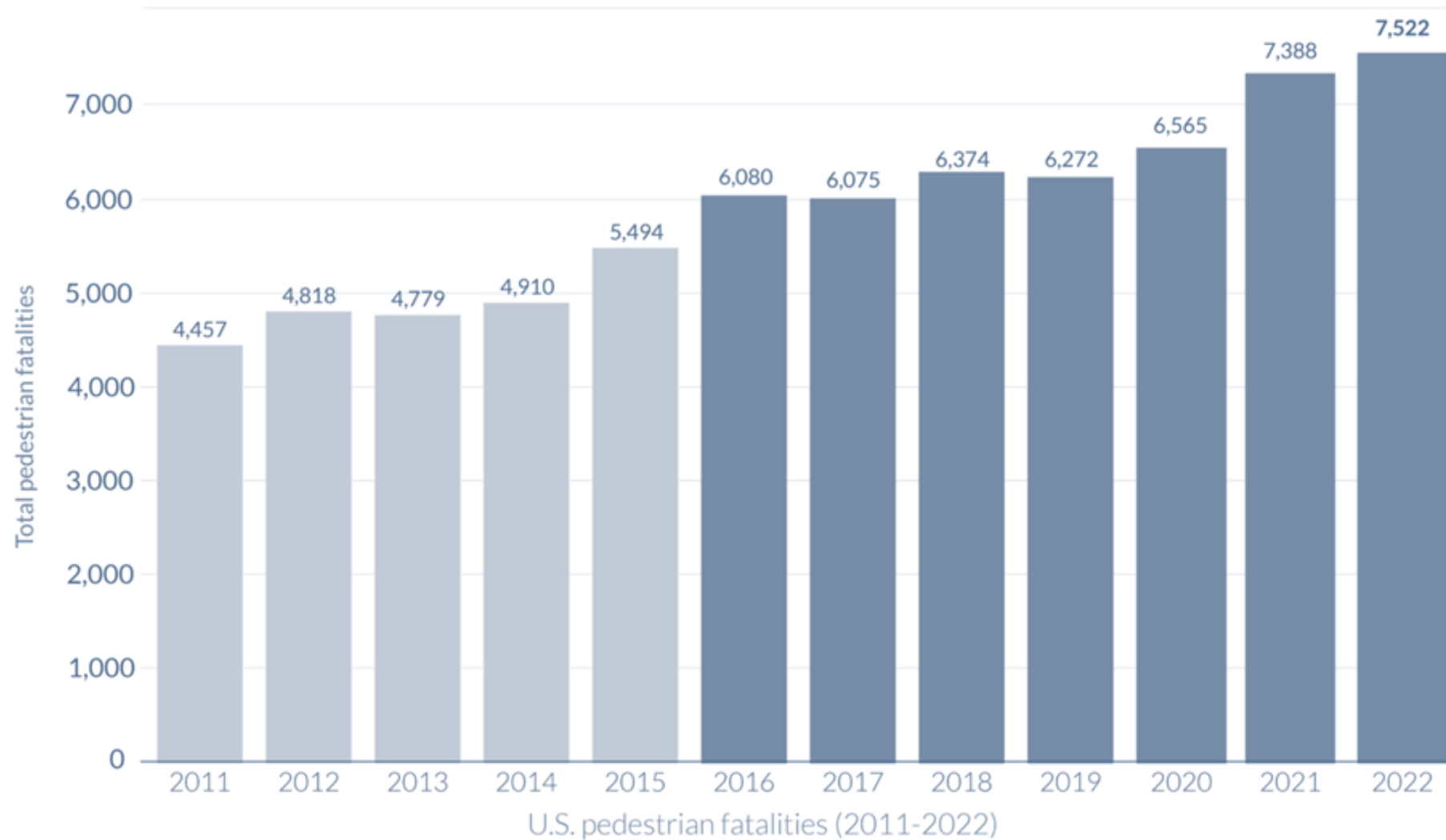
Source: [NHTSA Early Estimate of Motor Vehicle Traffic Fatalities in 2023](#)

↑ 7,500+

Pedestrians killed on roads in 2022. The most since 1981.

Source: GHSA [Pedestrian Traffic Fatalities by State: 2022 Preliminary Data](#)

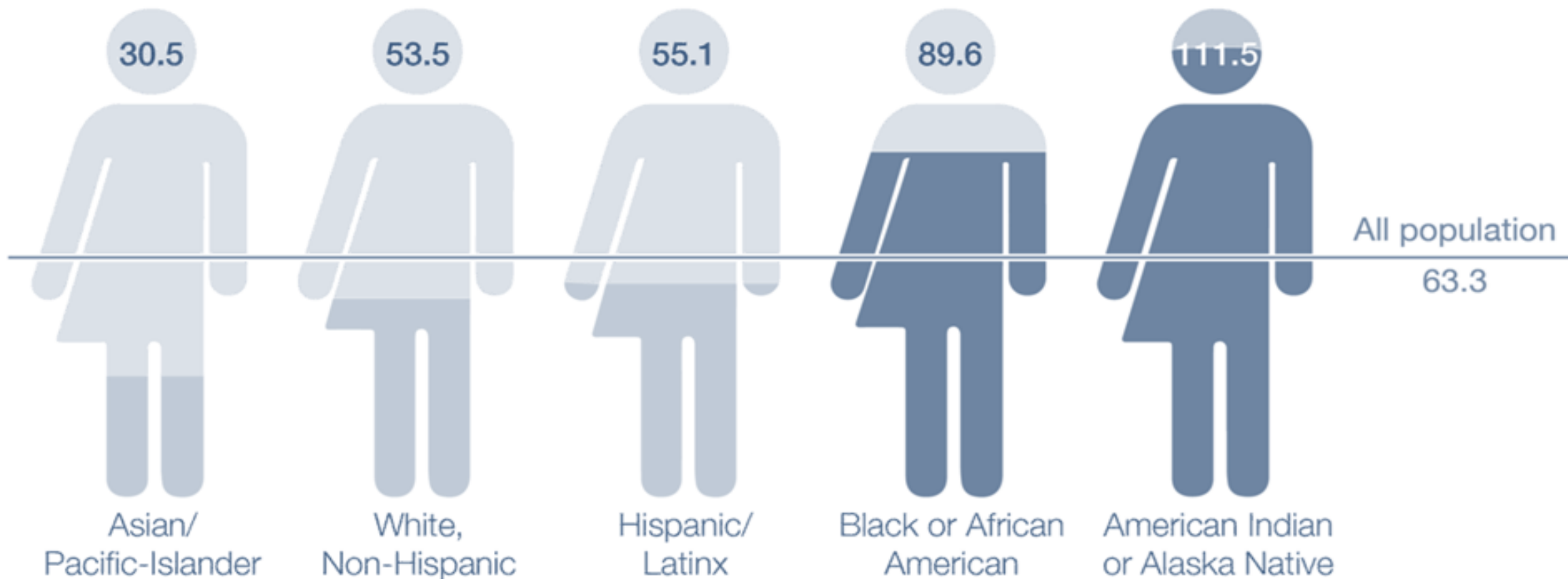
The deaths of people struck and killed while walking are up **68 percent** since 2011



2011-2021 final fatality numbers were sourced from FARS on April 2, 2024. 2022 data from NHTSA press release

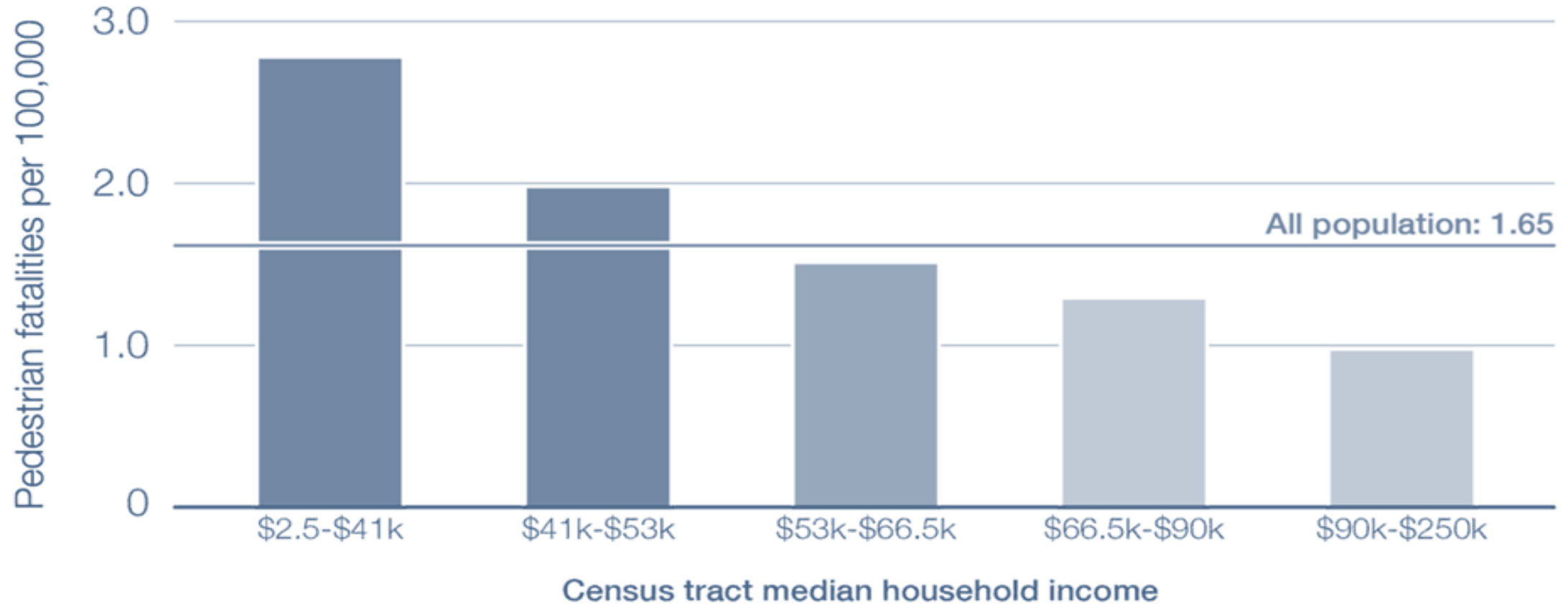
The burden is not shared equally

Relative pedestrian danger by race and ethnicity
(2010-2019)



Source: Smart Growth America and the National Complete Streets Coalition, *Dangerous by Design 2021*, <https://americagrowsthanamerica.org/dangerous-by-design/>

People walking in lower-income areas are struck and killed at much higher rates. People walking in wealthier neighborhoods are killed at far lower rates

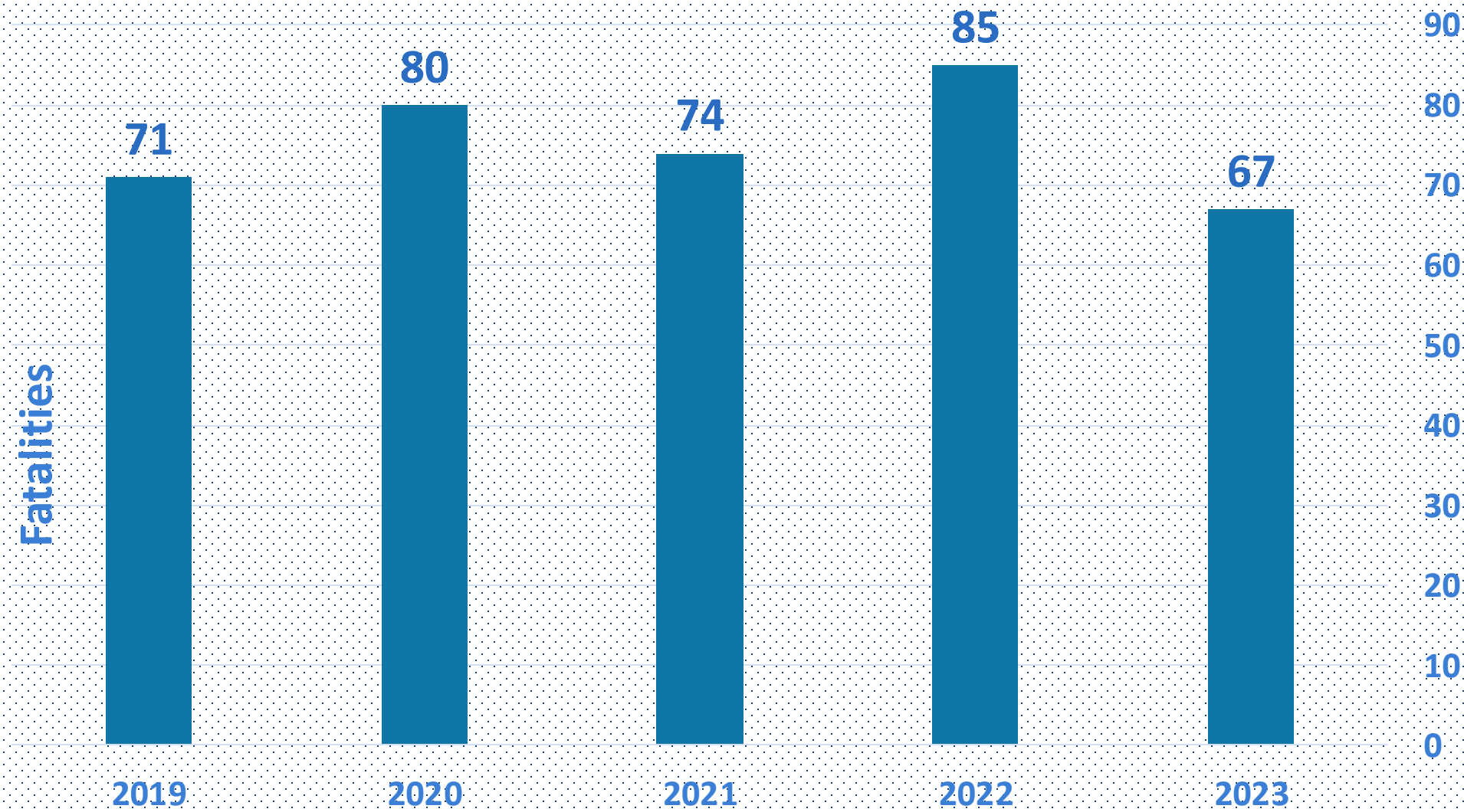


Source: Smart Growth America and the National Complete Streets Coalition, *Dangerous by Design* 2021. <https://smartgrowthamerica.org/dangerous-by-design/>

#2

Leading cause of death of
children (ages 1-19)

Fatal Crashes by Year – MACOG Region



What is a Safety Action Plan?

- Guide to eliminating fatal and serious injury crashes on streets by a target year
- Recommendations for projects, practices, policies, and programs
- Achieved through the Safe System Approach



The Safe System Approach

Aims to eliminate fatal and serious injuries for all road users by:

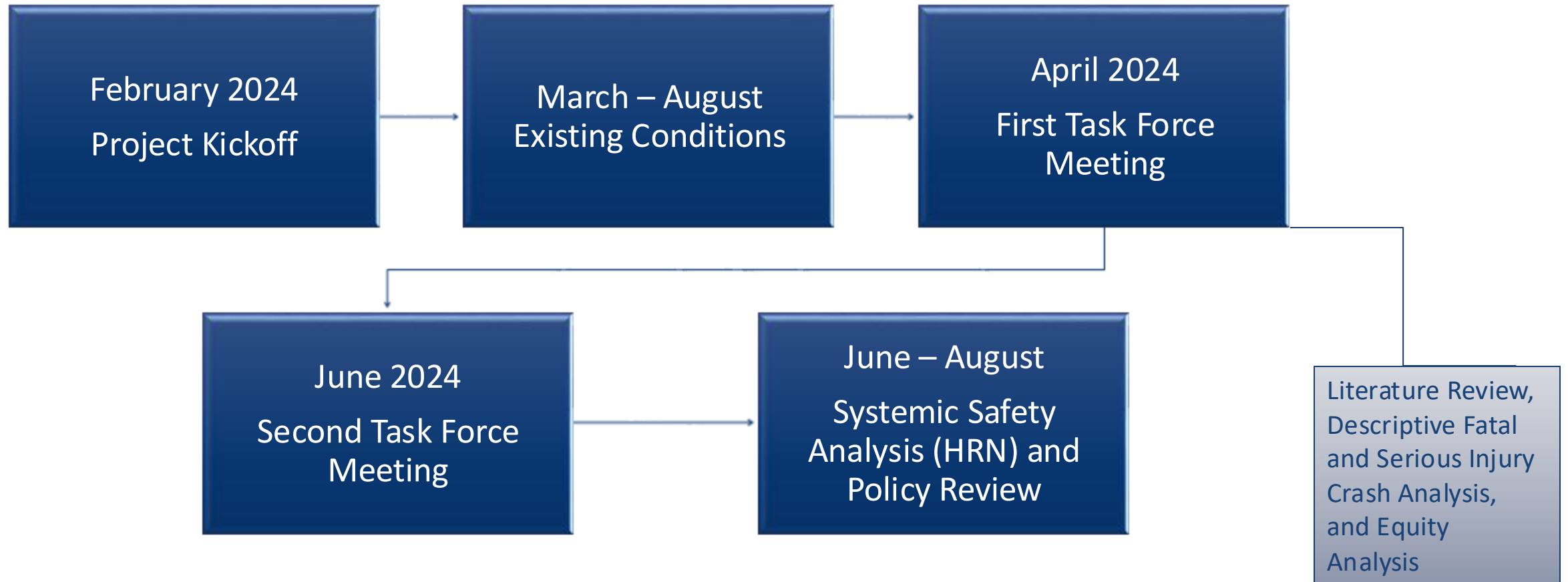
- accommodating human mistakes
- keeping impacts on the human body at tolerable levels



An aerial photograph of a city skyline, likely New York City, featuring various skyscrapers and buildings. The image is overlaid with a semi-transparent blue filter. A blue triangle points upwards from the bottom center towards the text.

Project Updates

Where We Are



70% of fatal and serious injury crashes in Elkhart County occurred on **16%** of roads.

60% of fatal and serious injury crashes in Kosciusko County occurred on **4%** of roads.

64% of fatal and serious injury crashes in Marshall County occurred on **7%** of roads.

70% of fatal and serious injury crashes in St. Joseph County occurred on **14%** of roads.

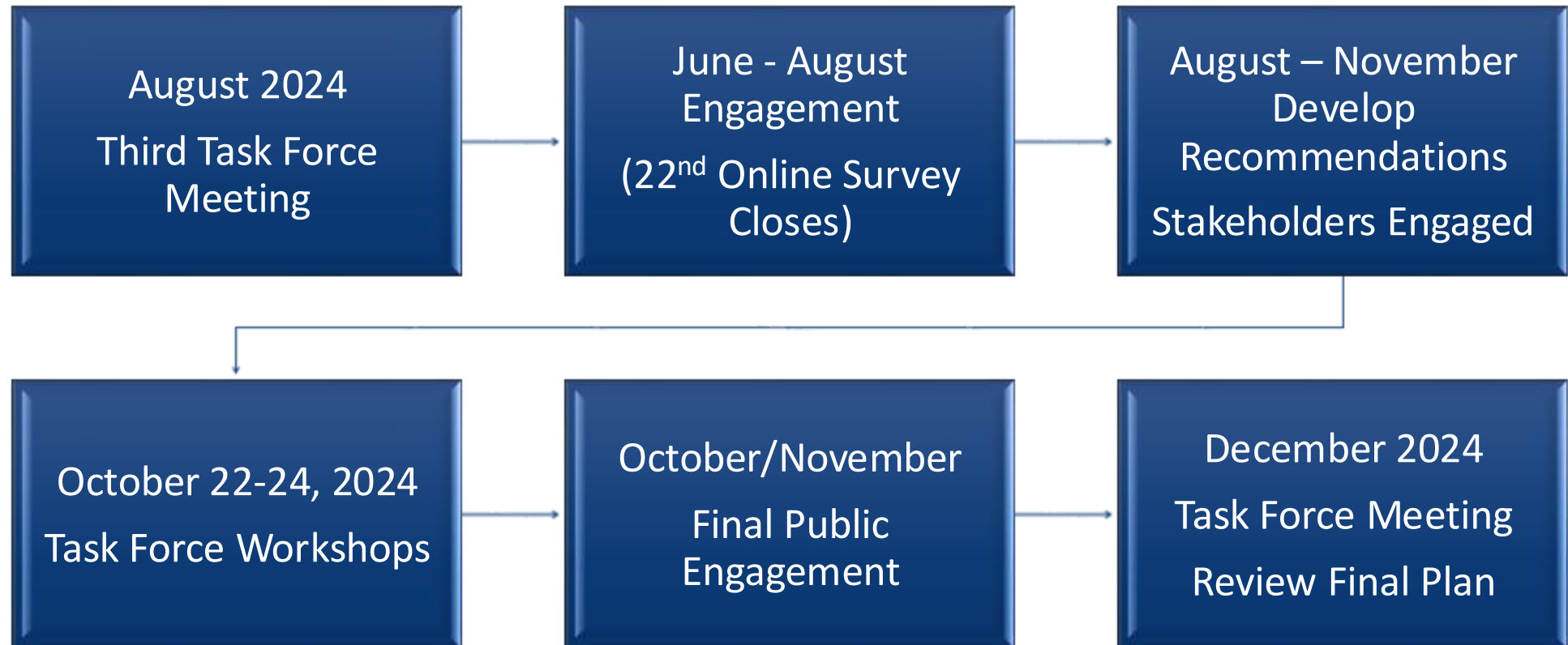
Elkhart County - 70% of fatal and serious injury crashes occurred on 16% of roads

Kosciusko County - 60% of fatal and serious injury crashes occurred on 4% of roads

Marshall County - 64% of fatal and serious injury crashes occurred on 7% of roads

St. Joseph County - 70% of fatal and serious injury crashes occurred on 14% of roads

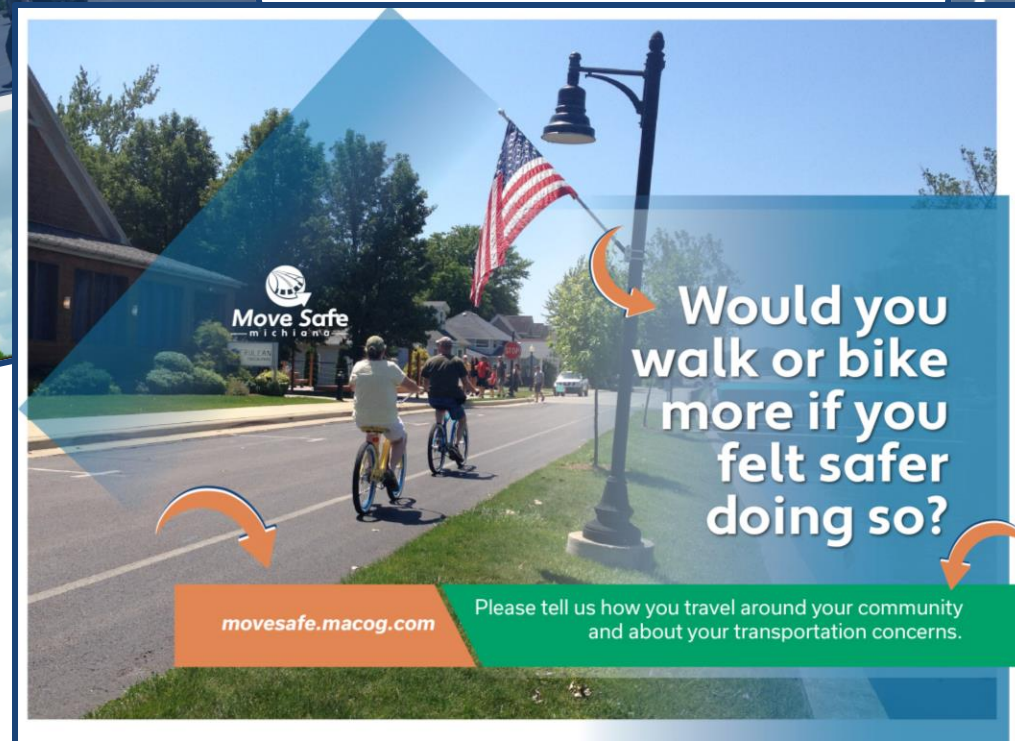
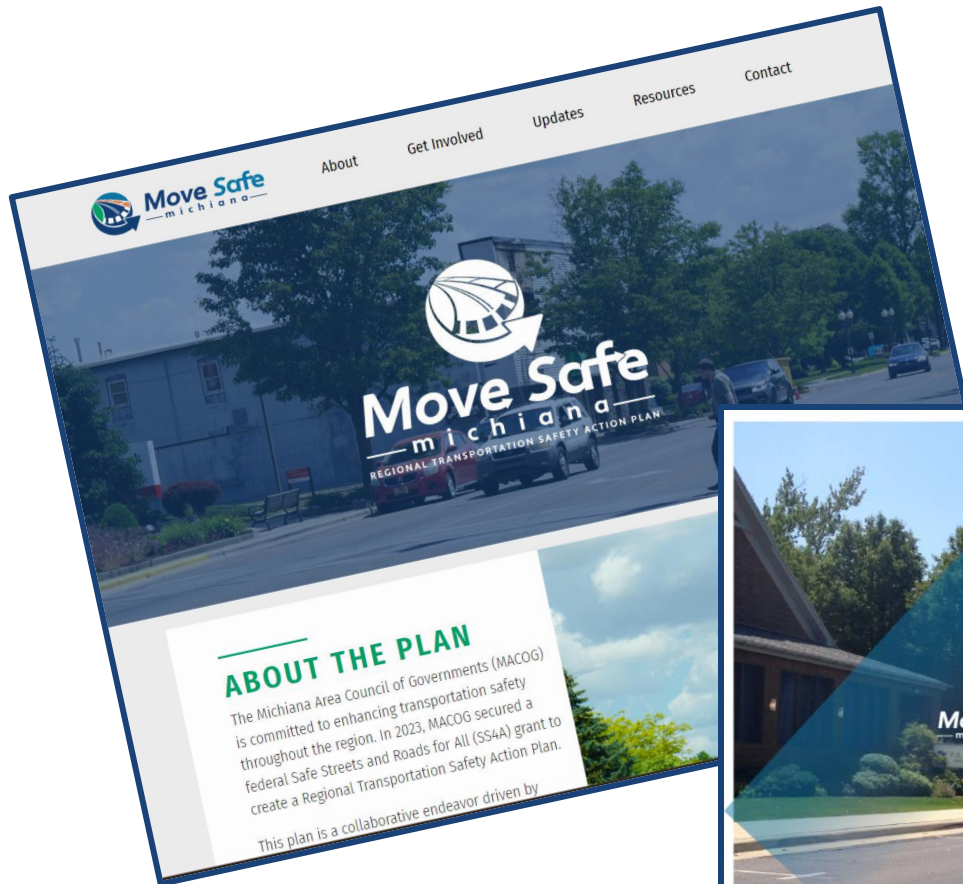
Where We're Headed





Engagement Update

COMMUNICATIONS



ONLINE TOOL



LOCATE
places on the map that need improvements or where you feel improvements are needed. Your input will influence future investments.

DESCRIBE
your comment by using the input provided by others on each map point. You can provide additional comments.

AGREE/DISAGREE
with input provided by others on each map point. You can provide additional comments.



Thanks for sharing your thoughts and experiences on increasing safety in transportation in the community! Please take a short survey and mark the map to show where you feel improvements are needed. Your input will influence future investments.

To get started, choose "Continue to Map" below. There are two ways to provide input. First, you can take a short survey by choosing "Take the Survey" from the menu. Second, you can provide input on a map.

It is easier to mark the map comments on a desktop device than a smartphone. Add points on the map by choosing "Add Input to Map" from the menu and then clicking the icon that best matches what your concern at that location is. You can also see and comment on points others have contributed.

If you need additional accommodations to participate in the public input opportunity or have further questions, contact MACOG at info@macog.org.

[Continue to Map](#)

Provide Input On

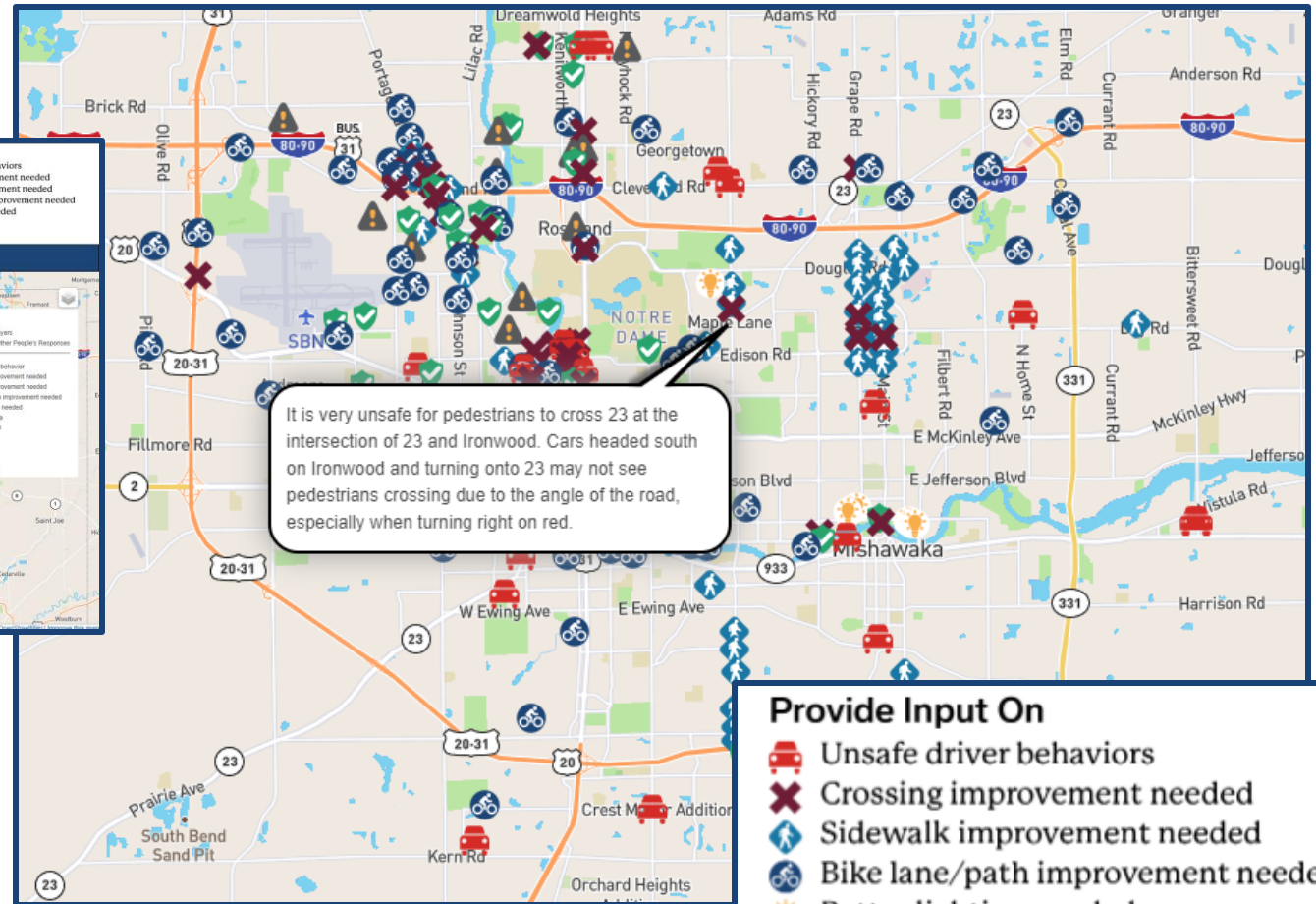
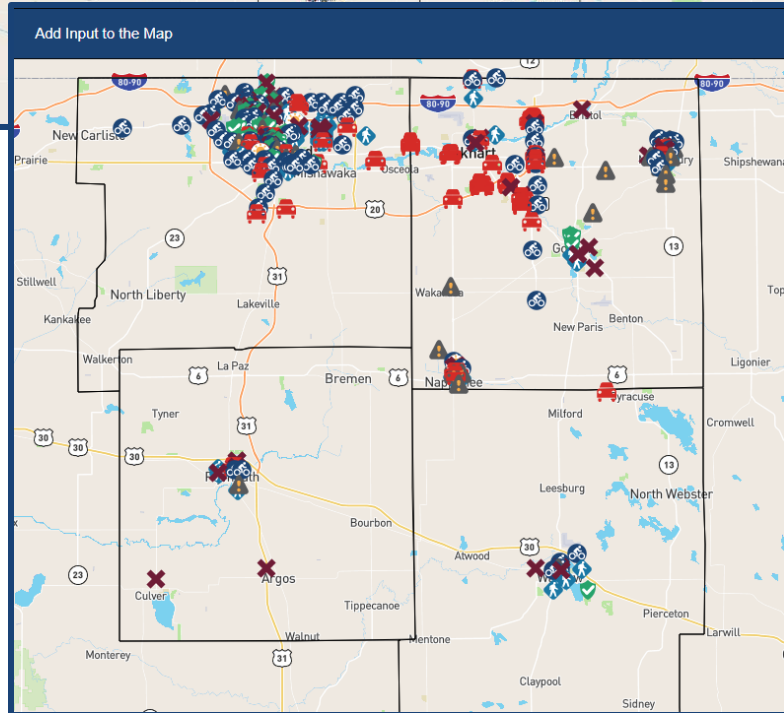
- Unsafe driver behaviors
- Crossing improvement needed
- Sidewalk improvement needed
- Bike lane/path improvement needed
- Better lighting needed
- I feel safe here
- Other concern

View Options

- Turn On/Off Other People's Responses
- Turn On/Off Other People's Responses

Base Maps

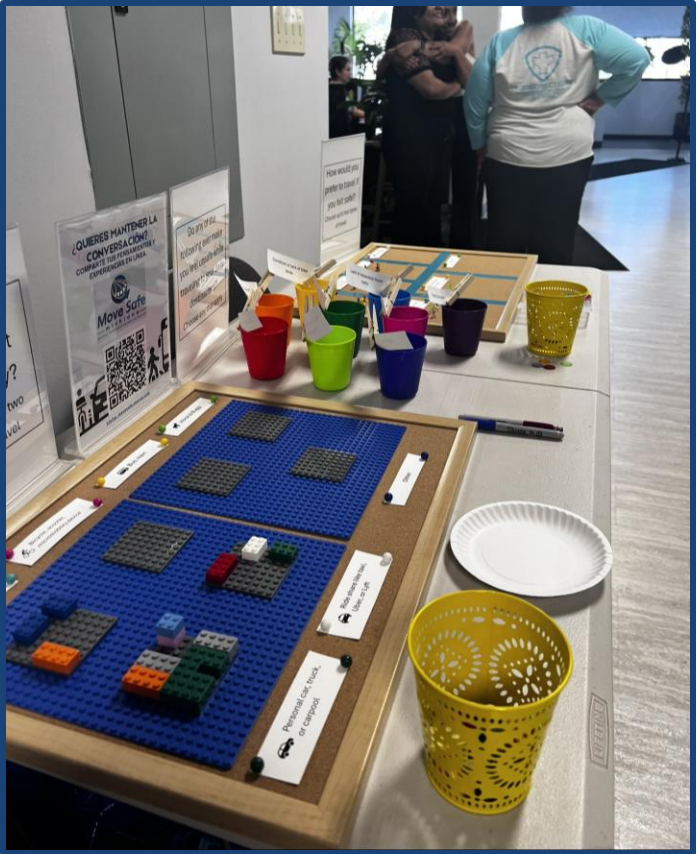
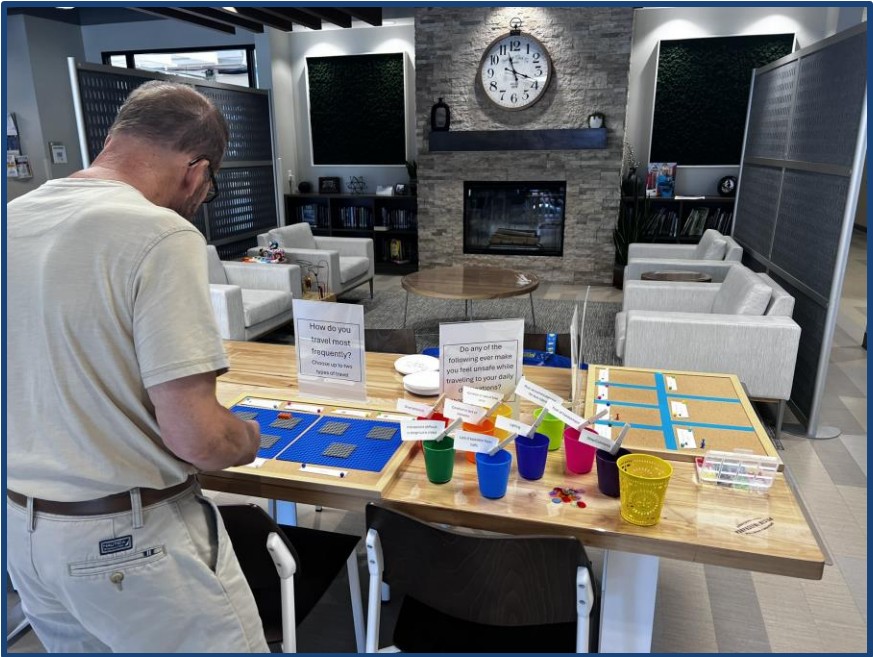
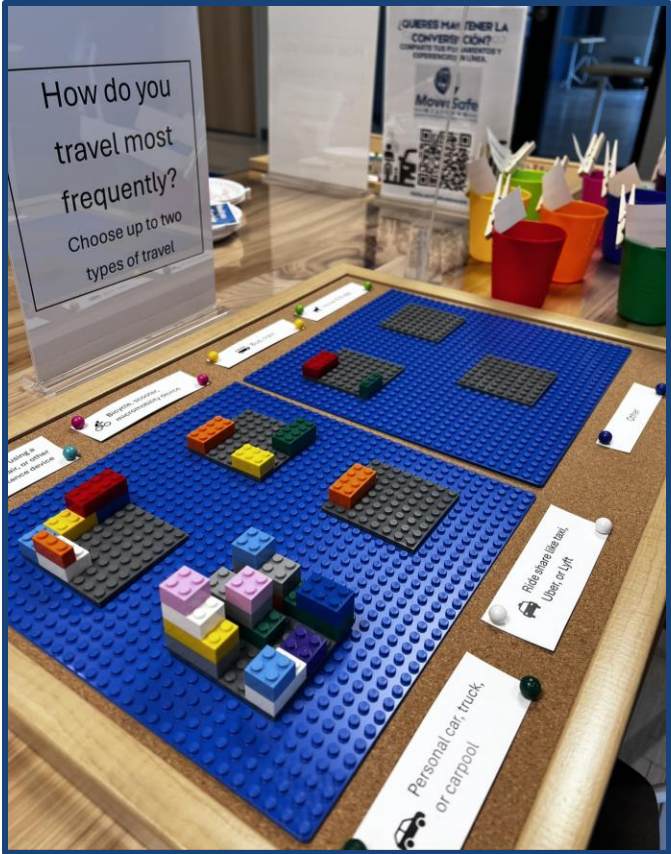
- Street Map
- Satellite Map



- Provide Input On**
- Unsafe driver behaviors
 - Crossing improvement needed
 - Sidewalk improvement needed
 - Bike lane/path improvement needed
 - Better lighting needed
 - I feel safe here
 - Other concern

440+ input points

POP-UPS



POP-UP STATS



30+ hours



300+ people



20+ events

...and counting

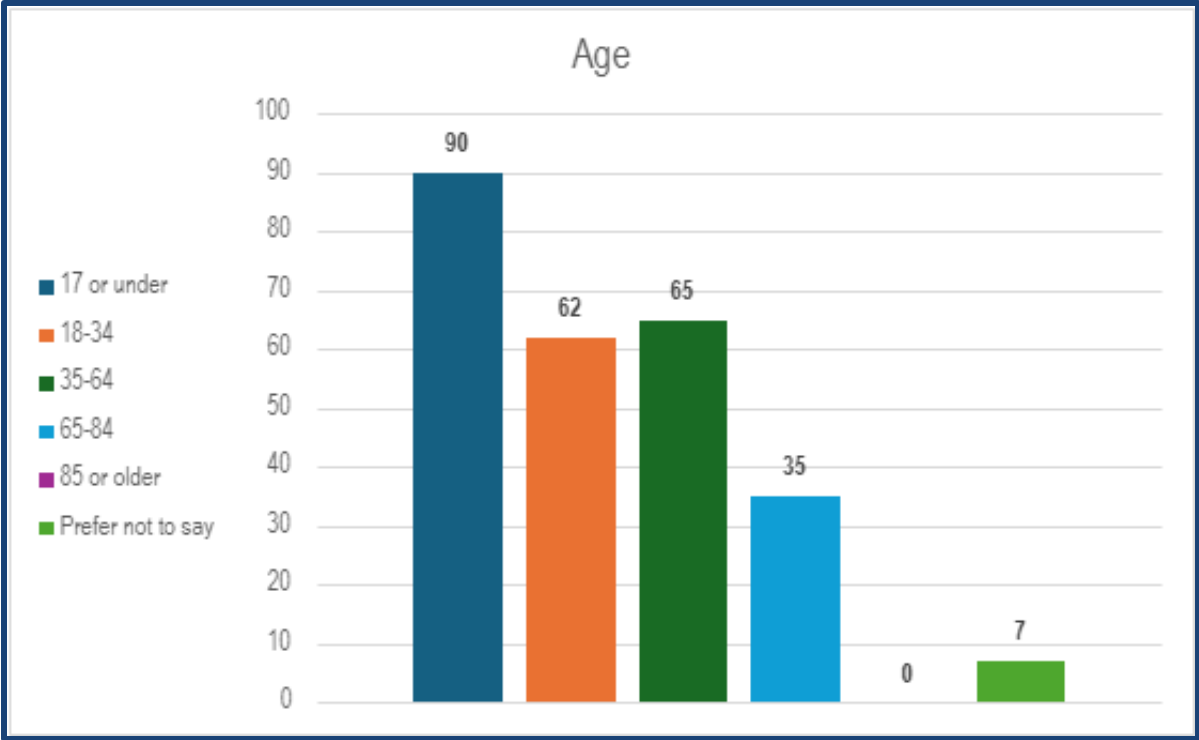
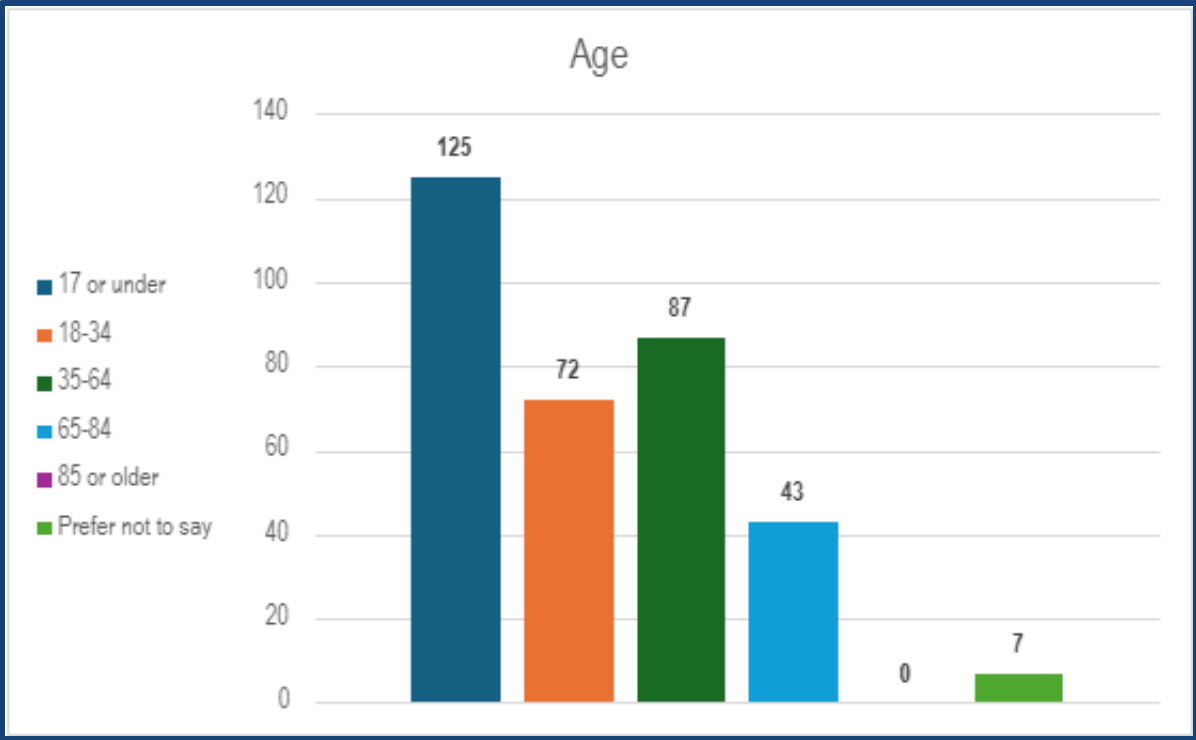
POP-UPS

EVENT	DATE
Partners for Clean Air	04/17/24
BTWW South Bend	05/15/24
Family Safety Day (Nappanee)	06/05/24
Downtown First Friday – South Bend	06/07/24
Informal Pop Up	06/11/24
Rosales Super Market	06/24/24
Kroc Food Pantry	06/25/24
SB Transpo - South Street	06/26/24
Downtown South Bend First Friday	07/05/24
Culver Lakefest	07/20/24
Marshall Co. Council on Aging	07/24/24
El Campito	07/24/24

EVENT	DATE
REAL Services - Enrichment Center	07/25/24
La Casa de Amistad	07/25/24
New Carlisle Hometown Days	07/26/24
One Roof - Southeast Neighborhood Center	07/26/24
New Carlisle Hometown Days	07/27/24
Regional Transit Advisory Committee	07/31/24
Elkhart Transit Center	08/02/24
La Casa de Amistad Back to School Event	08/03/24
Elkhart EnviroFest	08/10/24
Culver-Union Township Public Library	08/14/24
Argos Public Library	08/14/24
Warsaw Community Public Library	08/15/24

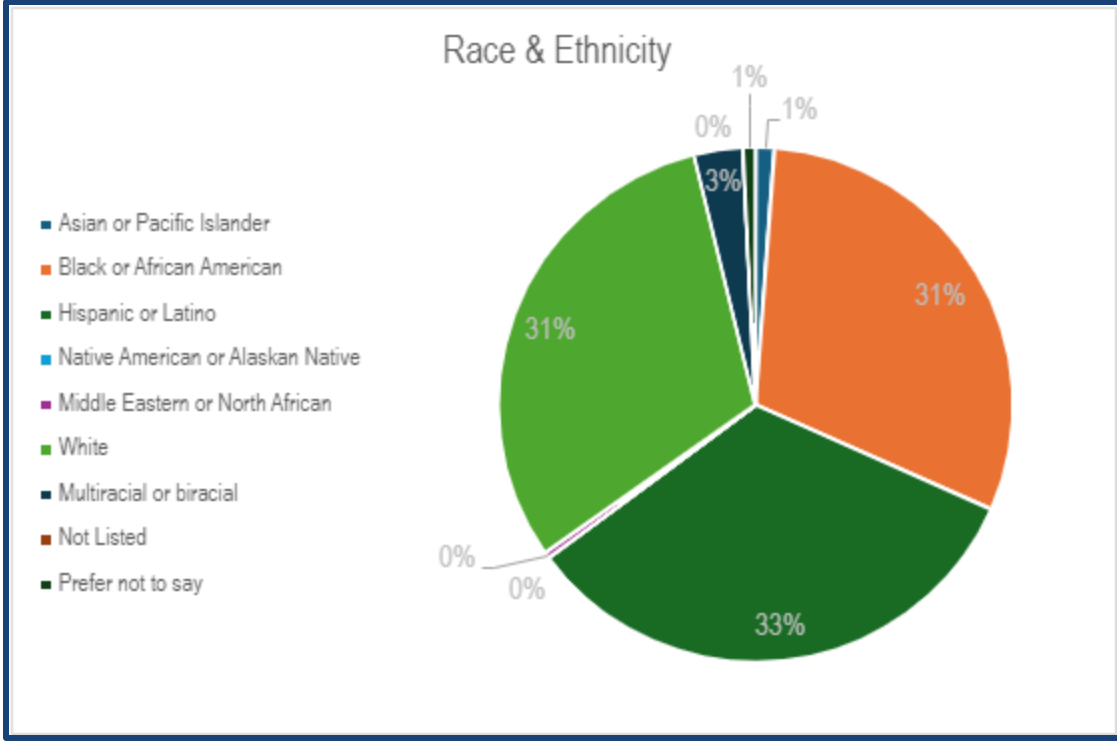
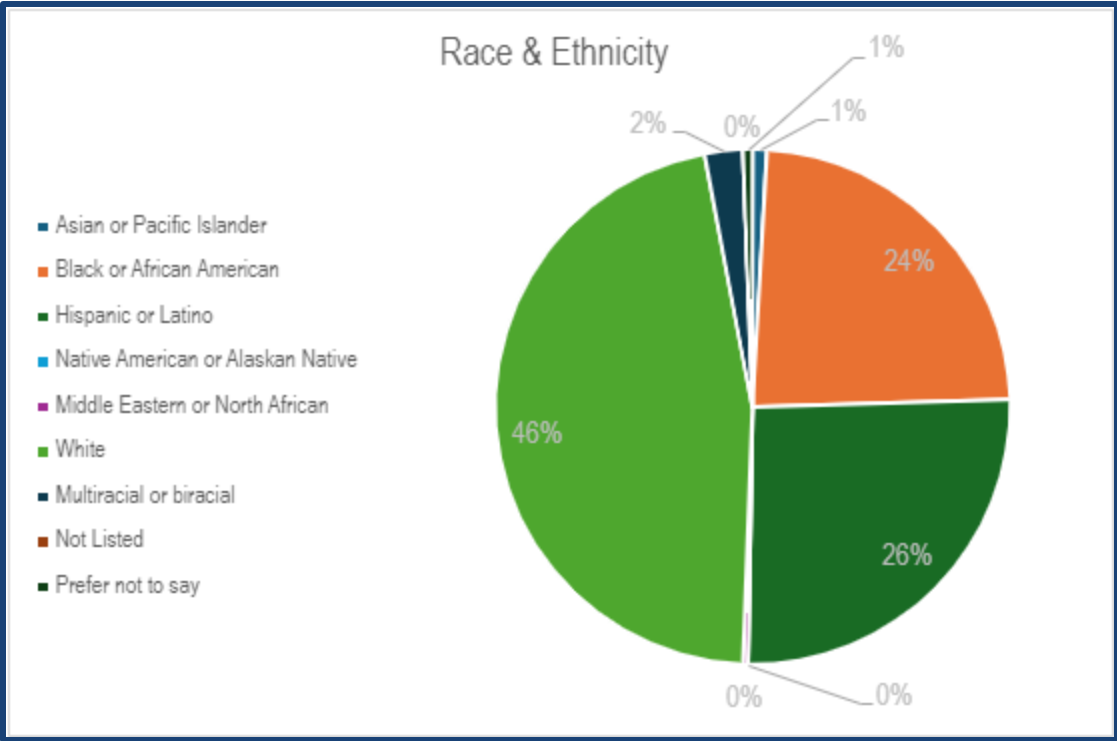
PLANNED EVENTS	DATE
Elkart Co. Health Department Block Party	08/27/24
Marshall Co.	tbd
La Vos Vida	tbd
League for the Blind & Disabled	tbd
KABS	tbd

DEMOGRAPHICS



* Except June 5 event

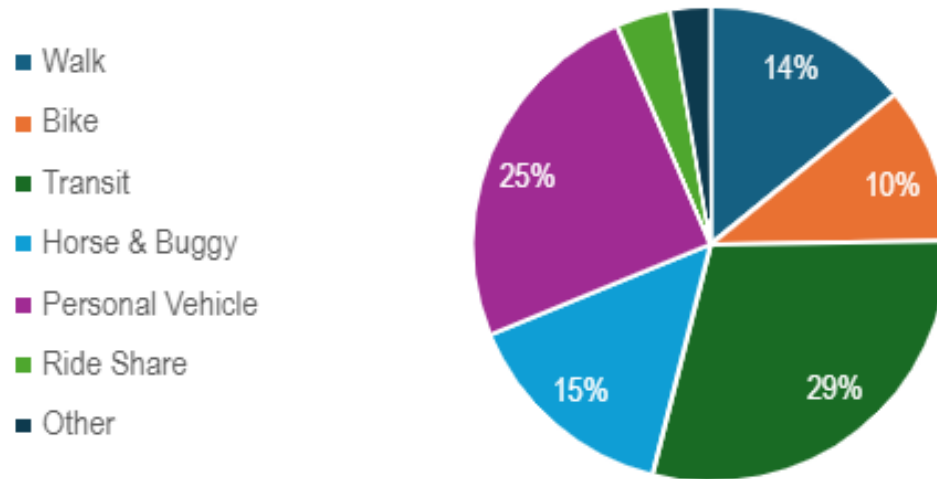
DEMOGRAPHICS



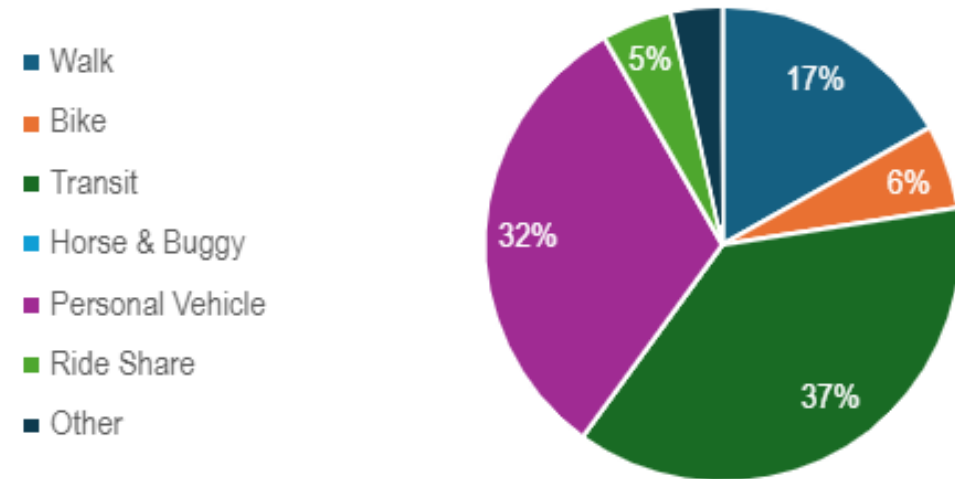
* Except June 5 event

INPUT & RESPONSES

Q1: How do you travel most frequently?



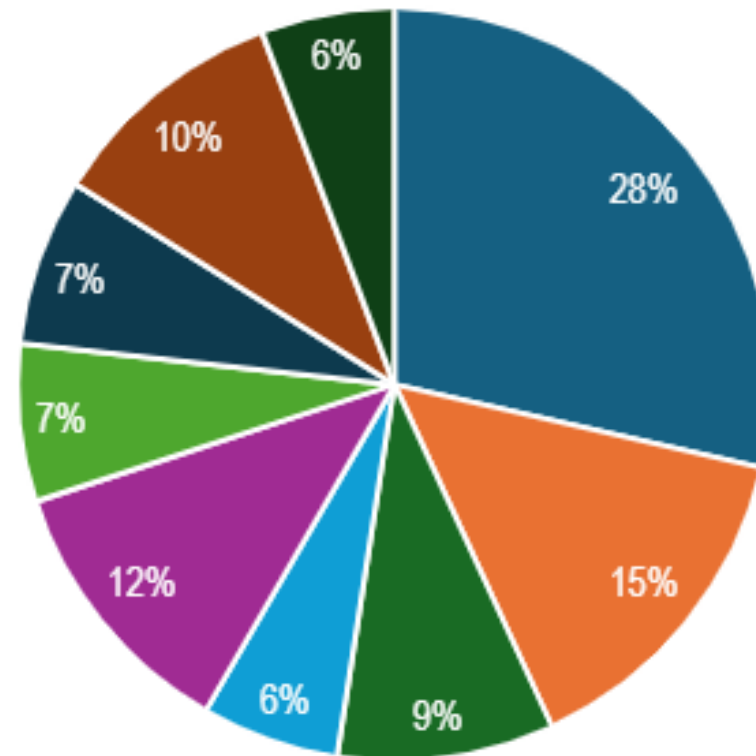
Q1: How do you travel most frequently?(w/o June 5)



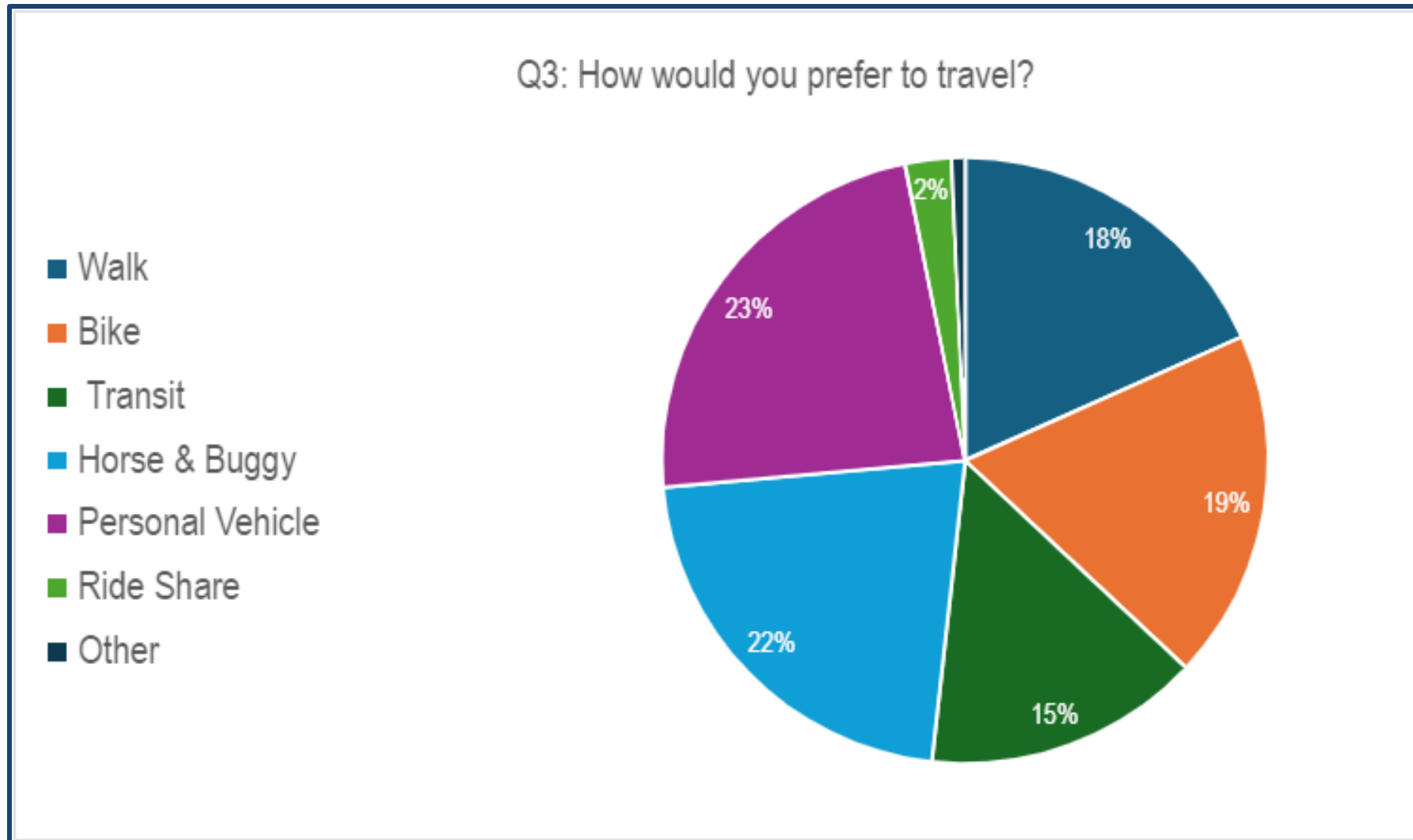
INPUT & RESPONSES

Q2: Transportation and Safety Issues/concerns

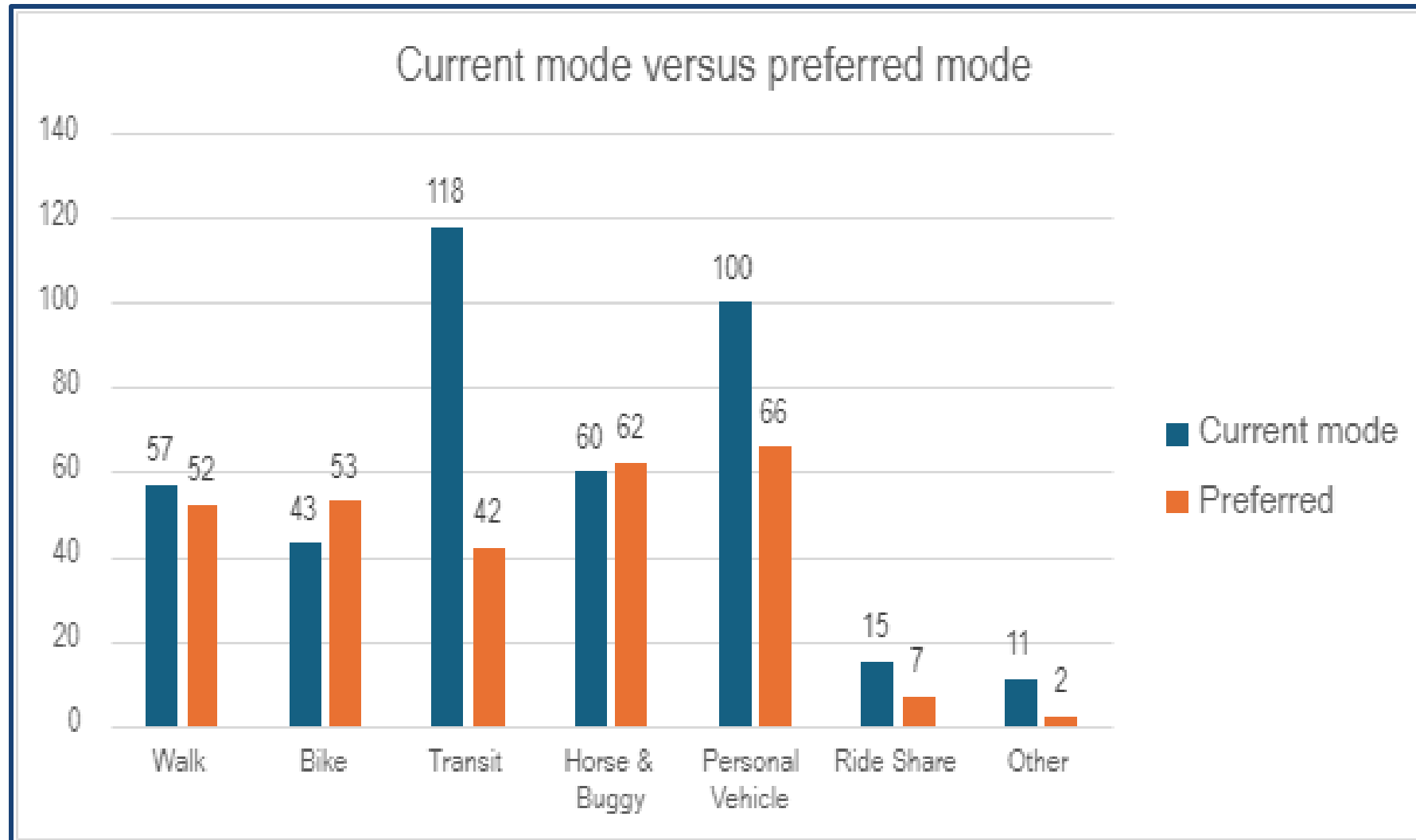
- Driver behavior(s)
- Condition or lack of sidewalks
- Condition or lack of bike lanes
- Poor accommodations for bus riders
- Intersections (difficult or dangerous to cross)
- Lack of separation from traffic
- Lighting



INPUT & RESPONSES



INPUT & RESPONSES



COMMENTS

"Bremen could be more horse & buggy friendly, Nappanee needs bikeways"

"There's no place to sit at the bus stop and I am disabled. Makes it difficult to access and use, but I also do not drive. "

"I prefer busses, but it isn't convenient here. It isn't as reliable or even available in many places."

"I live in Osceola and there is no transit. No sidewalks. No lighting. "

"Certain places in my neighborhood don't have sidewalks and you have to walk in the street."

"I live close to the Kroger in my neighborhood, it is less than a 5-minute drive. And I always drive because walking there is impossible, there are no sidewalks. "

"Harassment by other people and police is a concern. I've been stopped for no reason while walking."

An aerial photograph of a city, likely Indianapolis, with a blue overlay. The image shows a dense urban area with various buildings, including a prominent tall skyscraper on the left. A river is visible in the upper left. The text "Roadway Infrastructure Prioritization Methodology" is centered over the image in white.

Roadway Infrastructure Prioritization Methodology

Prioritization

- Identify locations for roadway design safety priorities
- Candidate locations
 - Systemic analysis tiers (critical and high tiers)
 - High Injury Network – definitely Vulnerable Road Users (people walking, biking, rolling, and traveling by horse and buggy), possible others
- Unit of analysis
 - 0.1 mile segments created by dicing above segments
 - This avoids issues with variability in length and any normalizations applied
 - The short segments can be aggregated at the end of the prioritization process as needed

Prioritization Categories and Variables

- Prioritization scores at geographic level
 - Regionwide
 - South Bend
 - All Other Cities
 - Rural
- Three categories
 - Roadway Characteristics
 - Land use and Context
 - Equity
- Each category has variables under it

Category

Roadway Characteristics

Results from High Injury Network (historic) and Systemic Analysis (High-Risk Network)

	Process	Score
High Risk Network	Project overlaps with a high or critical tier as identified in systemic analysis	5 points – critical tier 3 points – high tier
Systemic Analysis	Overlaps with or intersects with a High Injury Network	3 points – project overlaps with HIN 1 point – project intersects with HIN

Category

Land Use and Context

	Process	Regionwide	Urban Metro	Urban Non-Metro	Rural
Destinations	Number of different destination types within 0.25 miles	Schools, parks, healthcare, employment centers, retail/shopping, grocery stores	Schools, parks, healthcare, employment centers, retail/shopping, grocery stores	Schools, parks, healthcare, employment centers, retail/shopping, grocery stores	Schools, parks, healthcare, employment centers, retail/shopping, grocery stores
Population density	Population density within 0.25 miles – quintiles	4 – 5 th quintile 3 – 4 th quintile 2 – 3 rd quintile 1 – 2 nd quintile 0 – 1 st quintile	4 – 5 th quintile 3 – 4 th quintile 2 – 3 rd quintile 1 – 2 nd quintile 0 – 1 st quintile	4 – 5 th quintile 3 – 4 th quintile 2 – 3 rd quintile 1 – 2 nd quintile 0 – 1 st quintile	4 – 5 th quintile 3 – 4 th quintile 2 – 3 rd quintile 1 – 2 nd quintile 0 – 1 st quintile
Transit stops	Is near a major transit stop	2 pts – Yes 0 pts – No	3 pts – Yes 0 pts – No	3 pts – Yes 0 pts – No	1 pts – Yes 0 pts – No

Category - Equity

- Projects scored based on the highest vulnerability block group within 0.25 miles
 - 4 – Well Above Average
 - 3 – Above Average
 - 2 – Average
 - 1 – Below Average
 - 0 – Well Below Average
- Weight of variables in equity category are in the table.
- Equity category score is calculated as weighted average

Variable	Regionwide	Urban Metro	Urban Non-Metro	Rural
Racial Minority	2	3	2	1
Hispanic Population	2	3	3	2
Households below poverty	2	3	3	3
Young population	2	3	2	3
Elderly population	2	1	2	3
Disability	2	2	2	2
Language (LEP)	2	2	2	2
Zero Vehicle HH	2	3	2	3
Population with no High School Degree	2	2	2	3
Unemployment	2	2	2	2

Overall Prioritization Score

- Calculated as weighted sum of category scores

	Regionwide		Urban Metro		Urban Non-Metro		Rural	
	Weight	Max Score	Weight	Max Score	Weight	Max Score	Weight	Max Score
Roadway Characteristics	2	8	2	8	2	8	3	8
Land Use and Context	1	11	1	12	1	12	1	10
Equity	5	4	5	4	5	4	4	4
Maximum Total Score	16 + 11 + 20 = <u>47</u>		16 + 12 + 20 = <u>48</u>		16 + 12 + 20 = <u>48</u>		24 + 10 + 16 = <u>50</u>	

Prioritization Categories and Variables

- Three categories
 - Roadway Characteristics
 - Land use and Context
 - Equity
- Each category has variables under it
- Prioritization scores at geographic level
 - Regionwide
 - South Bend
 - All Other Cities
 - Rural

Category

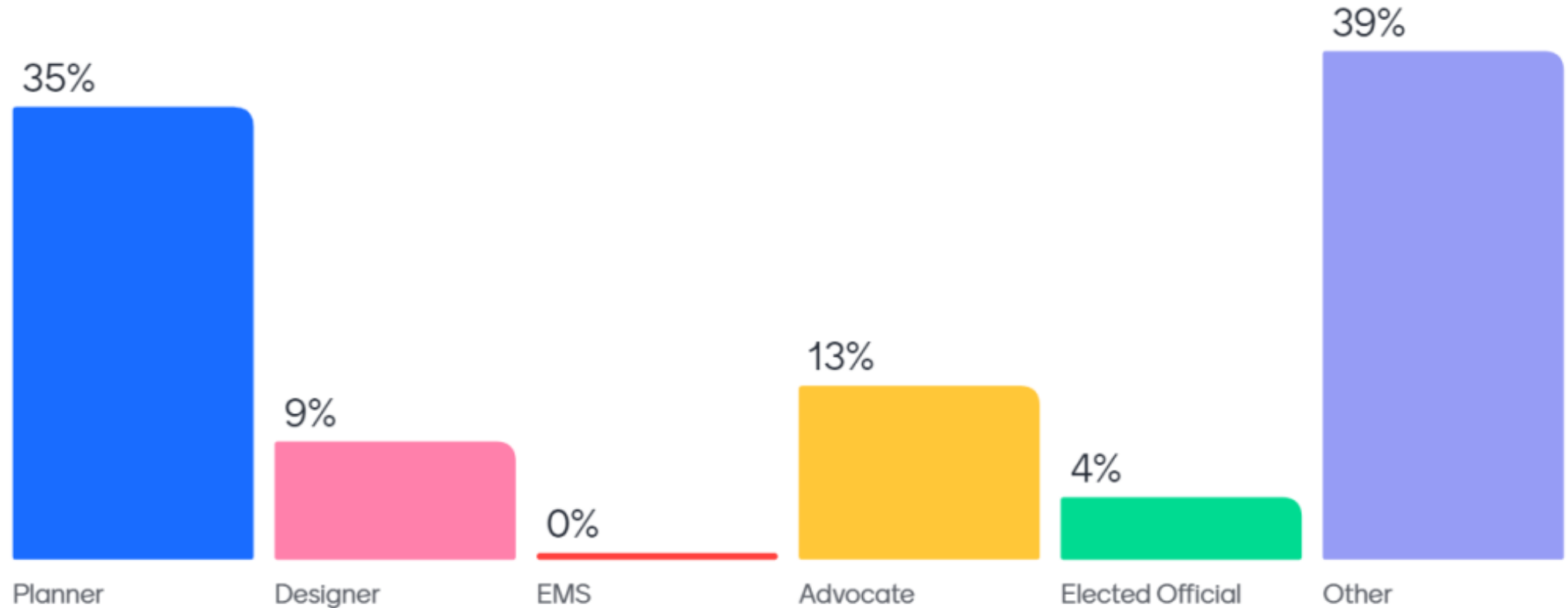
Land Use and Context

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An aerial photograph of a city, likely Indianapolis, with a blue overlay. The image shows a dense urban area with various buildings, including a prominent tall skyscraper on the left. A river is visible in the upper left. The text "Countermeasure Education and Activity" is centered in white.

Countermeasure Education and Activity

What is your primary role?



Our Current Reality

Traffic fatalities are a public health crisis *affecting all road users*.

1.3M

Lives lost globally each year from traffic crashes

Source: UN [Decade of Action for Road Safety 2021-2030](#)

42,795

Lives lost on US roads in 2022

Source: NHTSA [Early Estimates: 2022 Traffic Crash Deaths](#)

↑19%

Pedestrians killed on roads in 2022. The most since 1981.

Source: GHSA [Pedestrian Traffic Fatalities: 2022 Preliminary Data](#)

Why is this happening, and what's the solution?

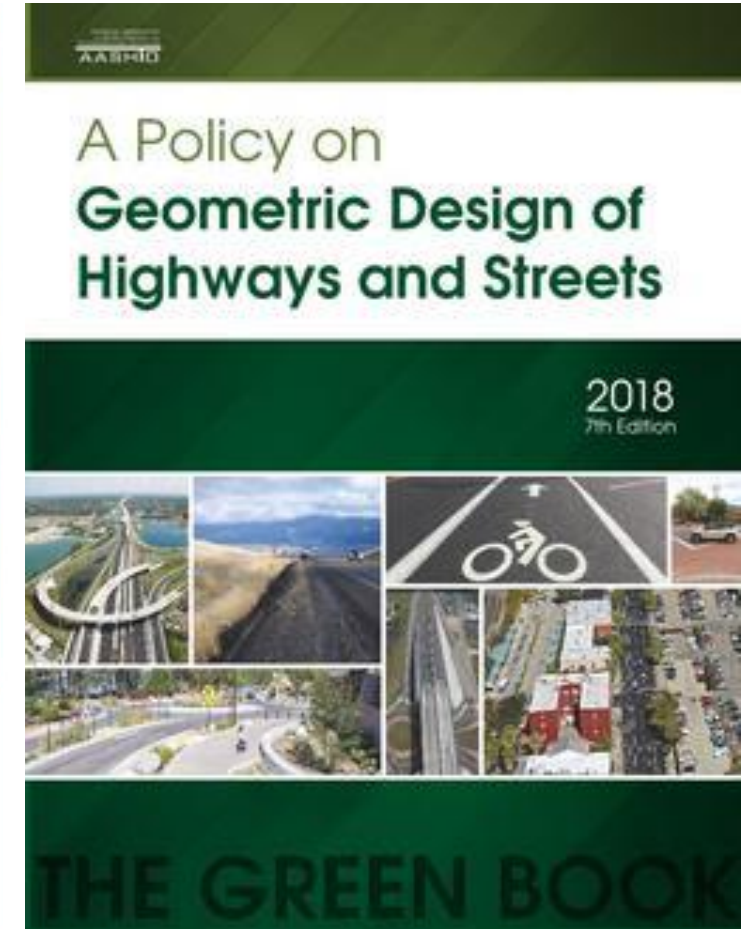
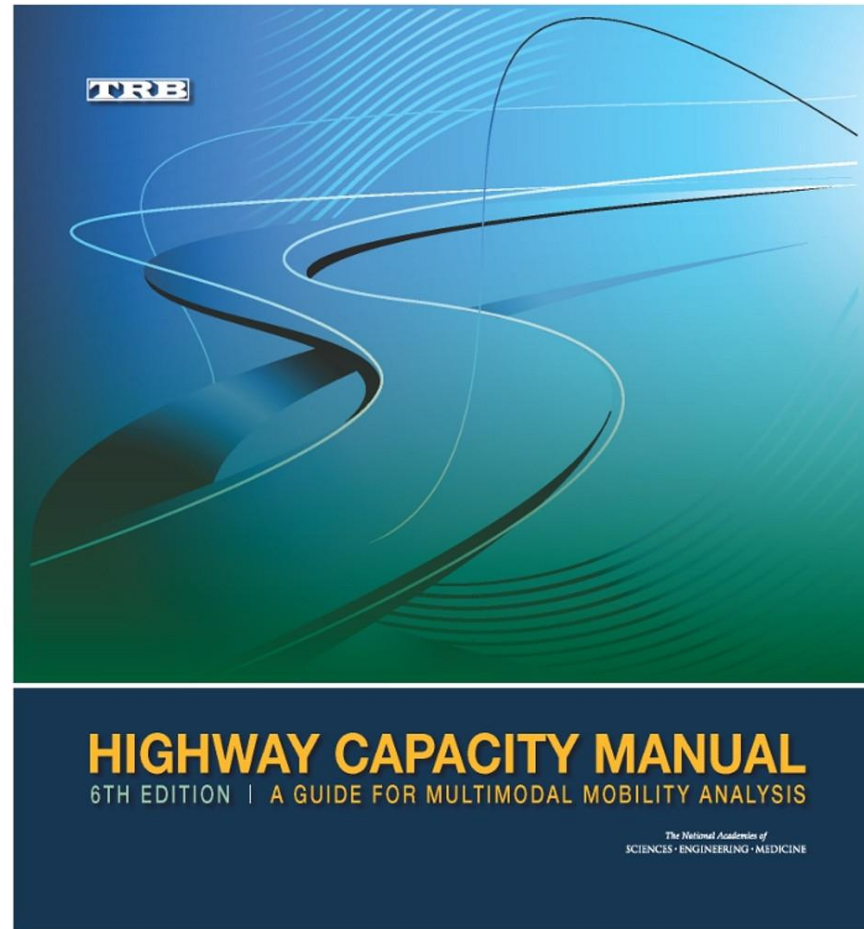
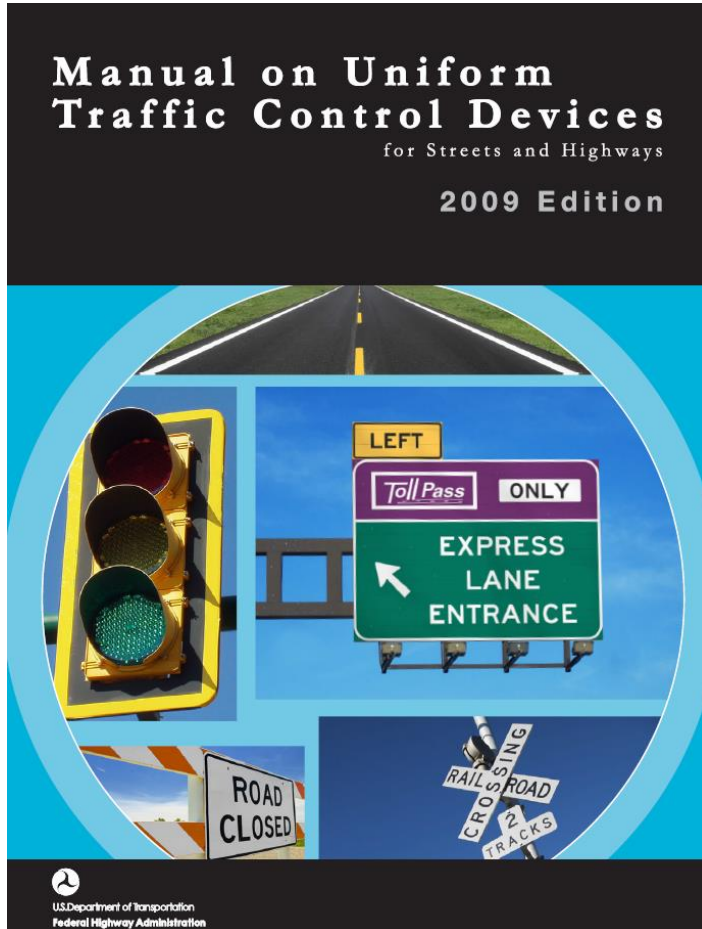
Vehicles and Drivers

- Mindset
- Size/Weight
- Blind spots

Roadway Design

- Systemic engineering modifications
- Aligning policies with outcomes we want

Standards and Guidance



A transportation design guide does more than just synthesize scientific data and facts—it reflects the values of a culture based on the opinions and political climate of the era, and the knowledge and biases of the people involved in the development of the guidance.

A Historical Perspective on the AASHTO Guide for the Development of Bicycle Facilities and the Impact of the Vehicular Cycling Movement

Understand the Role of the Guidance



1930s



1960s



Early 1950s



Today



1920s



1910s

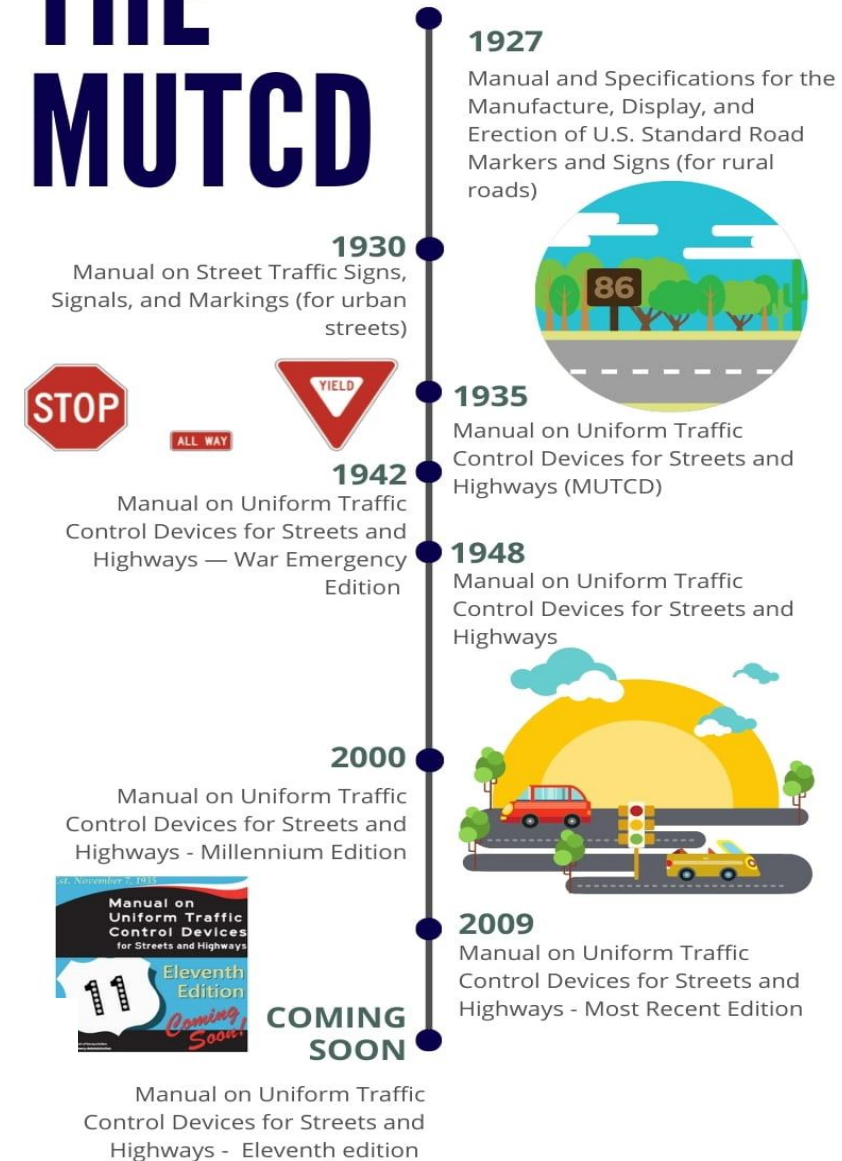
Gene Hawkins
Texas A&M University

Credit: A Century of Traffic Control Devices and What Lies Beyond, Gene Hawkins, Ph.D., P.E.

A BRIEF HISTORY OF

THE MUTCD

The **Manual on Uniform Traffic Control Devices** establishes consistent national rules for signs, pavement markings, signals, and other devices. Rulemaking for the 11th Edition was announced December 14, 2020.



Manual on
**Uniform Traffic
Control Devices**
for
Streets and Highways

Approved as an American Standard
American Standards Association
November 7, 1935

American Association of
State Highway Officials
National Conference on Street
and Highway Safety

WASHINGTON, D. C.
Reprinted September, 1937

1935/1937 First MUTCD Editions

venience to traffic should be used. The normal progression is as follows: (1) A caution-type sign, (2) a slow-type sign, (3) a STOP sign, (4) a traffic control signal installation, (5) a rotary traffic development, and (6) a grade separation.

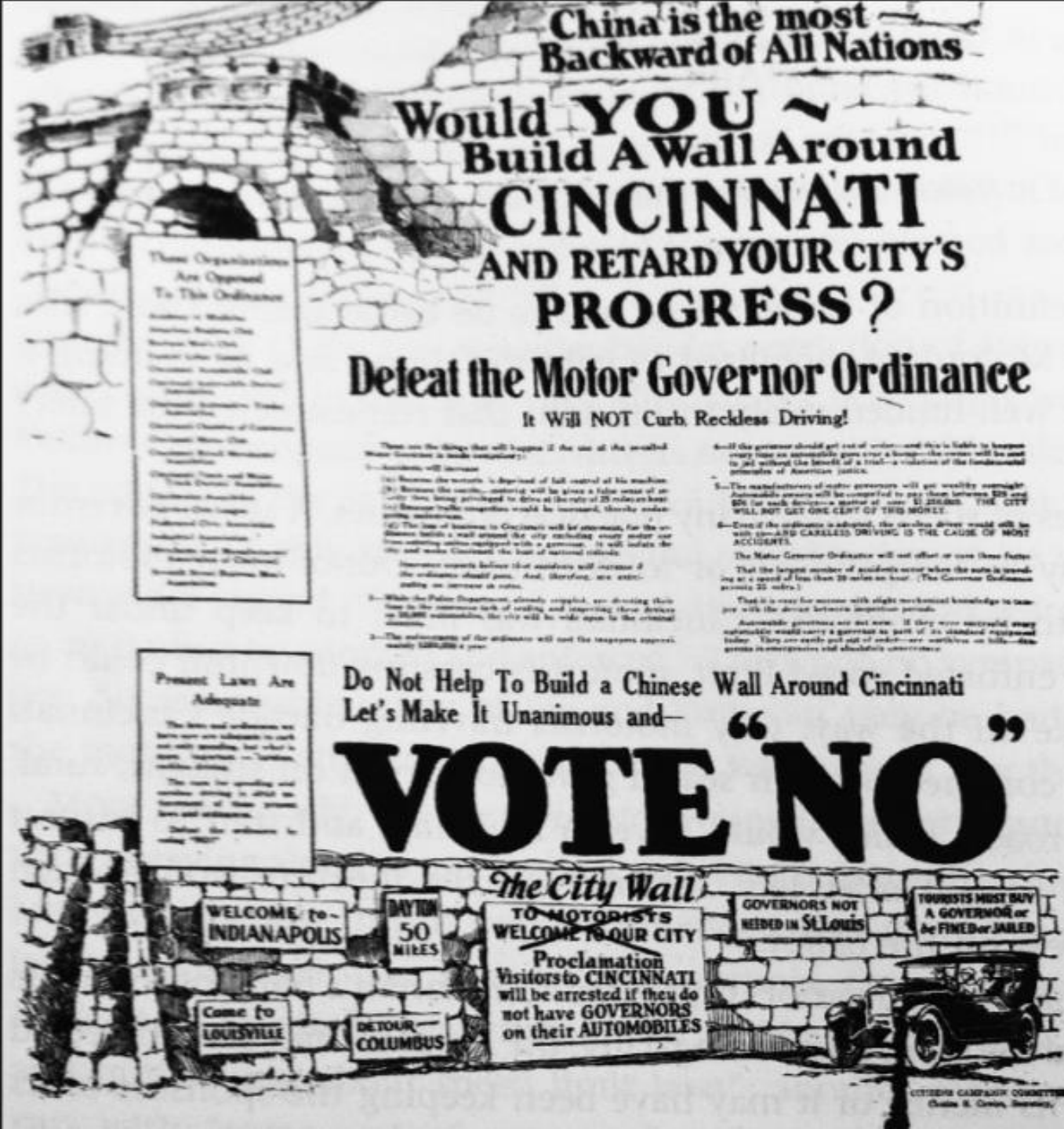
For the first three of the foregoing, simple standards are provided. If the situation calls for any of the last three, there is need for careful study of the details of design and operation. The two major objectives are safety to vehicles and pedestrians, and the expediting of traffic. These two considerations are sometimes antagonistic, in that an extreme degree of control might increase safety to some extent but at the same time retard traffic too much for sound economic operation. In such cases a balance must usually be attained between these two factors, frequently with some modification on account of the cost of installation.



FHWA Q&A

Q: What is the Manual on Uniform Traffic Control Devices?

A: The Federal Highway Administration (FHWA) publishes the MUTCD, which contains all national design, application, and placement, standards, guidance, options, and support provisions for traffic control devices. **The purpose of the MUTCD is to provide uniformity of [traffic control] devices**, which include signs, signals, and pavement markings, **to promote highway safety and efficiency on the Nation's streets and highways.**

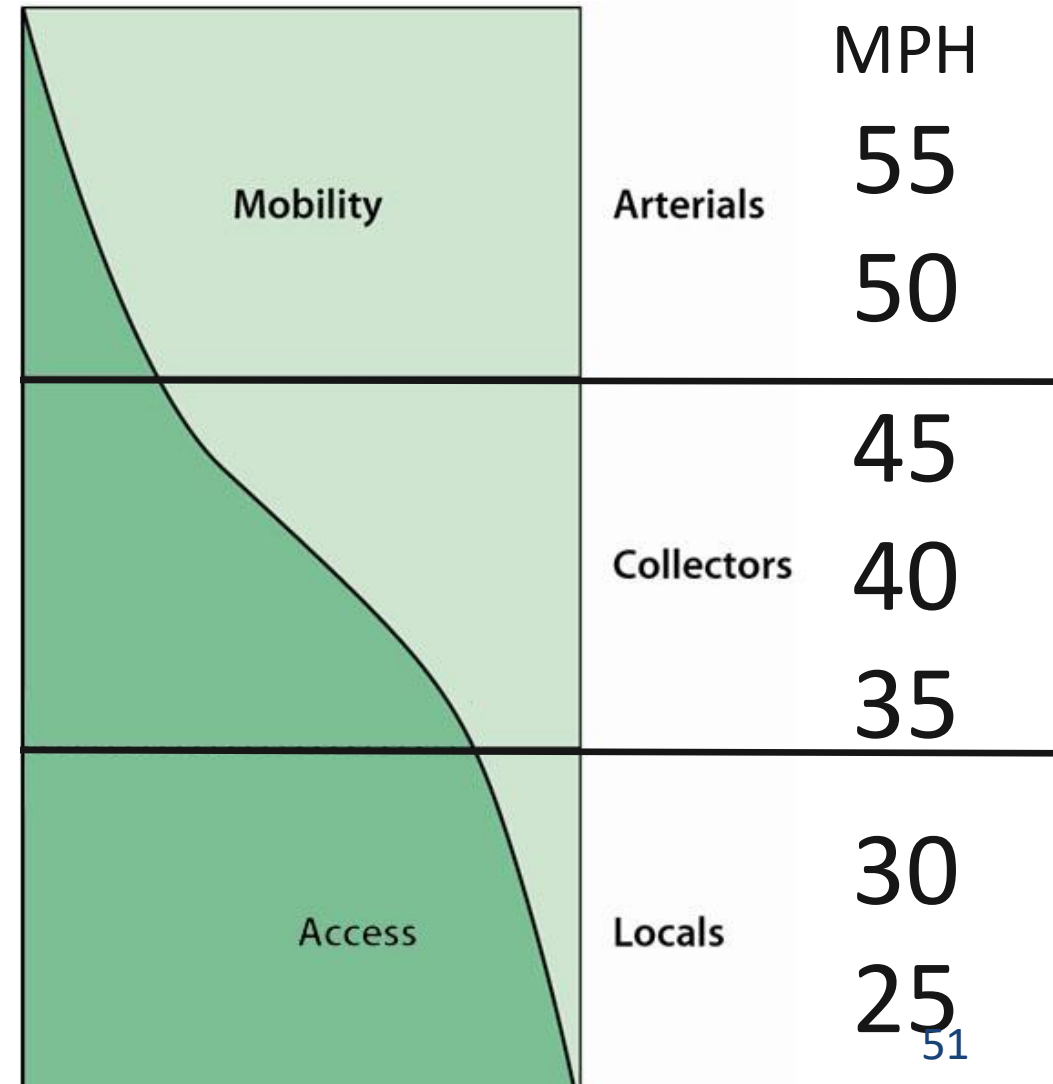
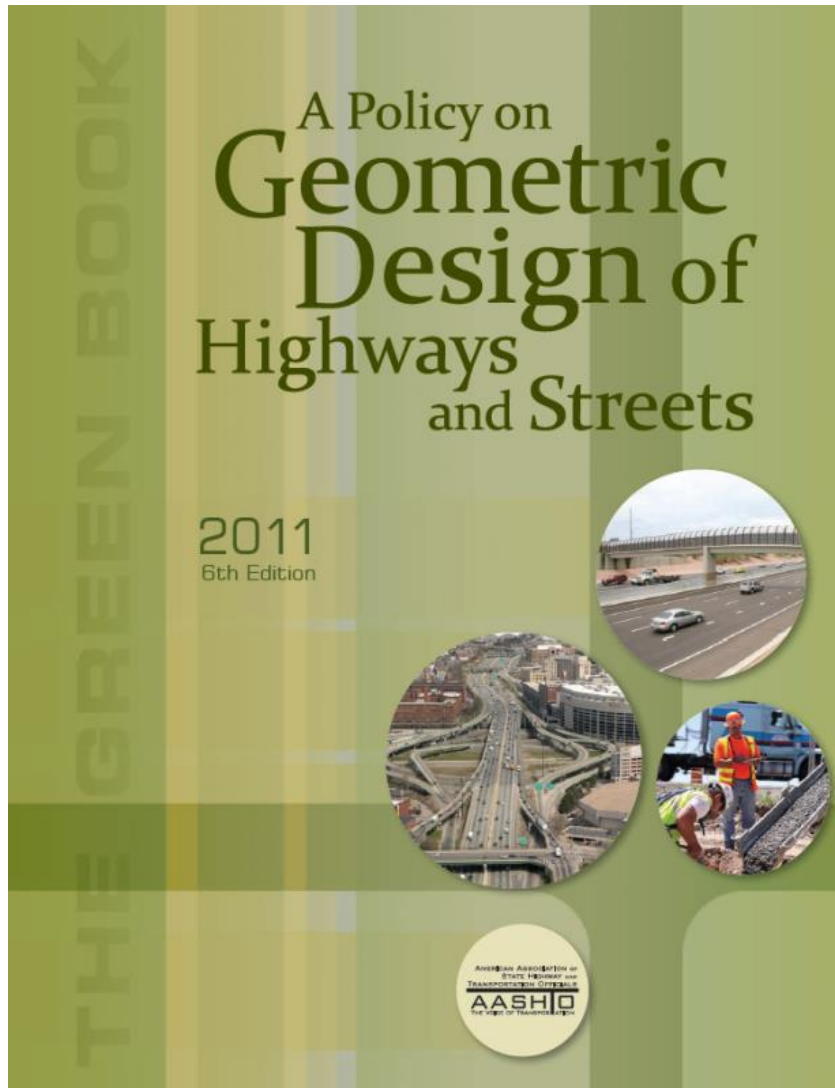


Automotive Industry Claimed:
Accidents will increase in Cincinnati if the so-called Motor Governor is made compulsory because:

- (a) motorist is deprived of full control of his machine
- (b) the careless motorist will be given a false sense of security with 25mph limit
- (c) traffic congestion will increase, thereby endangering pedestrians
- (d) The loss of business to Cincinnati will be enormous

Engineering designed to promote Car Culture

We Defined Mobility = High Speed/Long Distances



2018 AASHTO Greenbook

2.4.3.4 “Acceptable” Degrees of Congestion

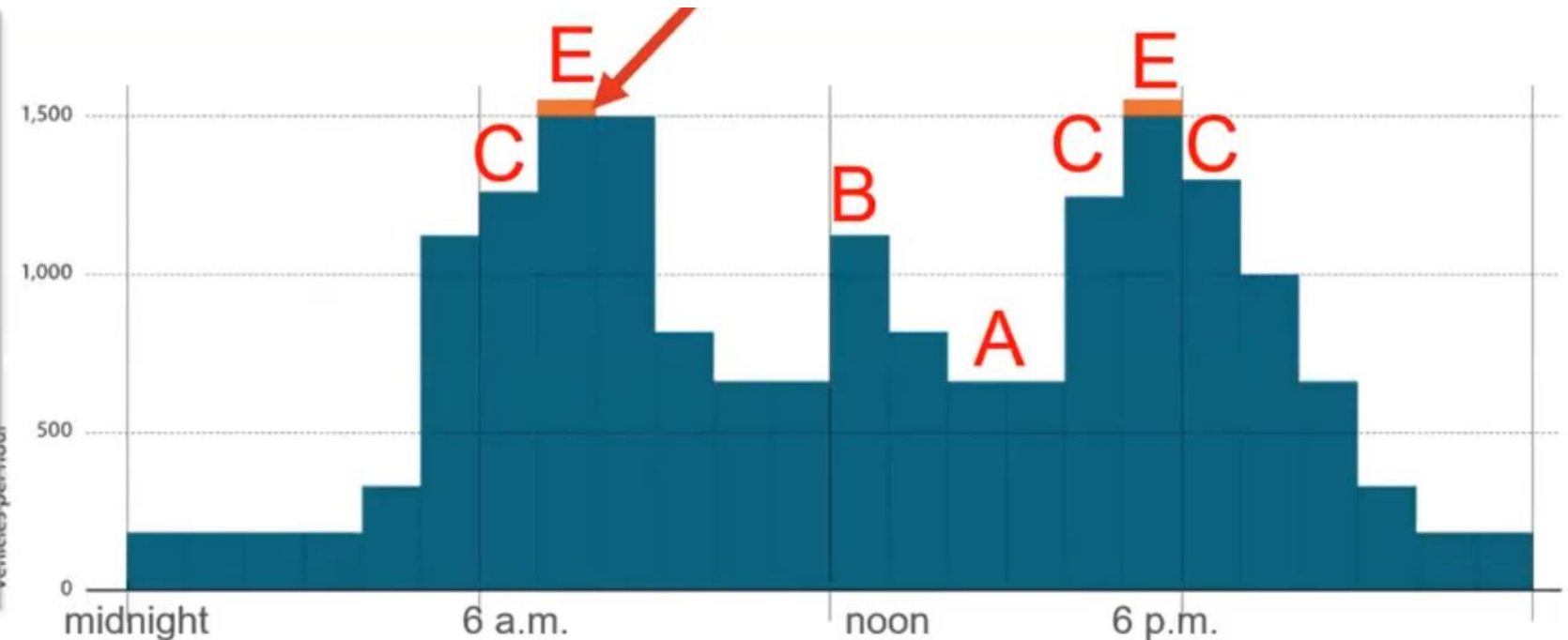
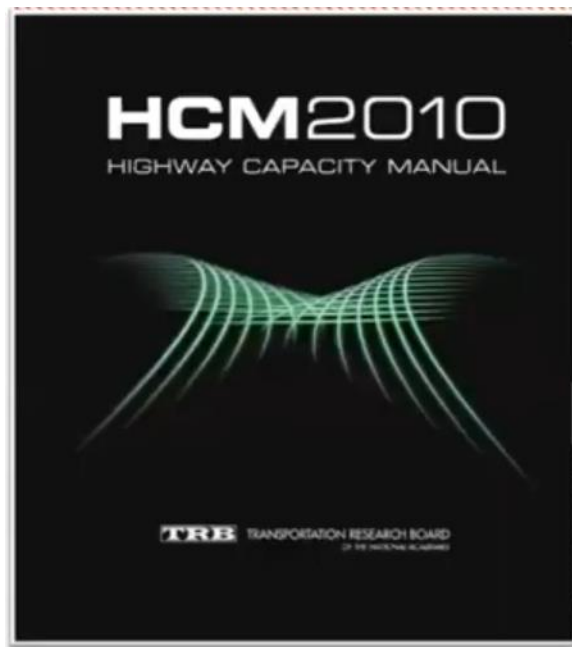
Requires reconciling the demands of the motorists and the general public with the finances available to meet those demands.

Table 2-3. Guidelines for Selection of Design Levels of Service

Functional Class	Customary Level of Service for Specified Combination of Context and Terrain Type			
	Rural Level	Rural Rolling	Rural Mountainous	Suburban, Urban Core, and Rural Town
Freeway	B	B	C	C or D
Arterial	B	B	C	C or D
Collector	C	C	D	D
Local	D	D	D	D

Highway Capacity Manual

The peak 15 minutes of the
30th highest hour of the year!



The foreword of the HCM, first published in 1965, states, “Knowledgeable professionals, acting in concert, have provided the value judgements needed.... And have established the common vocabulary...”

Predicting or Creating the Future?

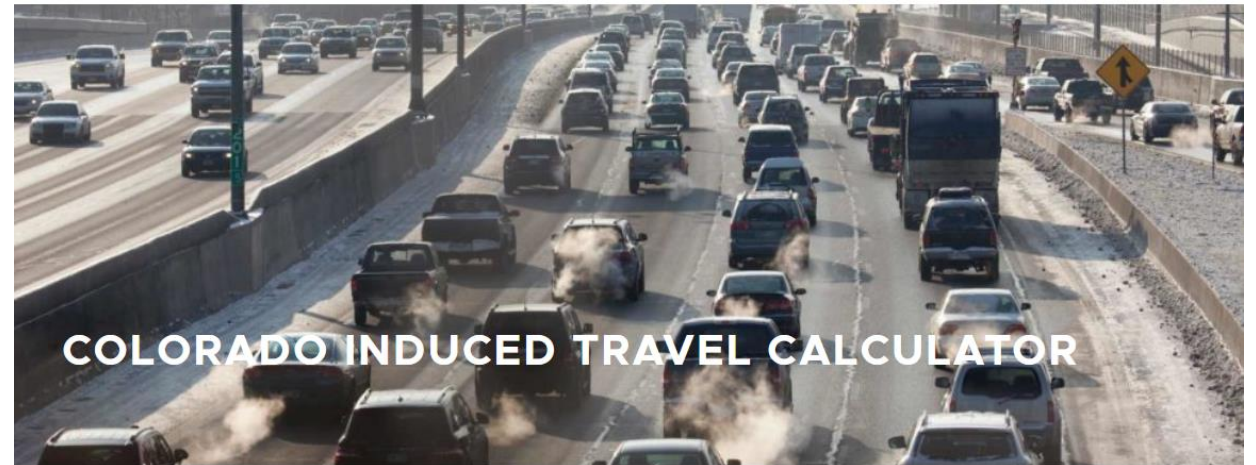
ADAM MANN GEAR JUN 17, 2014 6:38 AM

What's Up With That: Building Bigger Roads Actually Makes Traffic Worse

The concept is called induced demand, which is economist-speak for when increasing the supply of something (like roads) makes people want that thing even more. Though some traffic engineers made note of this phenomenon at least as early as the 1960s, it is only in recent years that social scientists have collected enough data to show how this happens pretty much every time we build new roads.



STUART DEE/GETTY

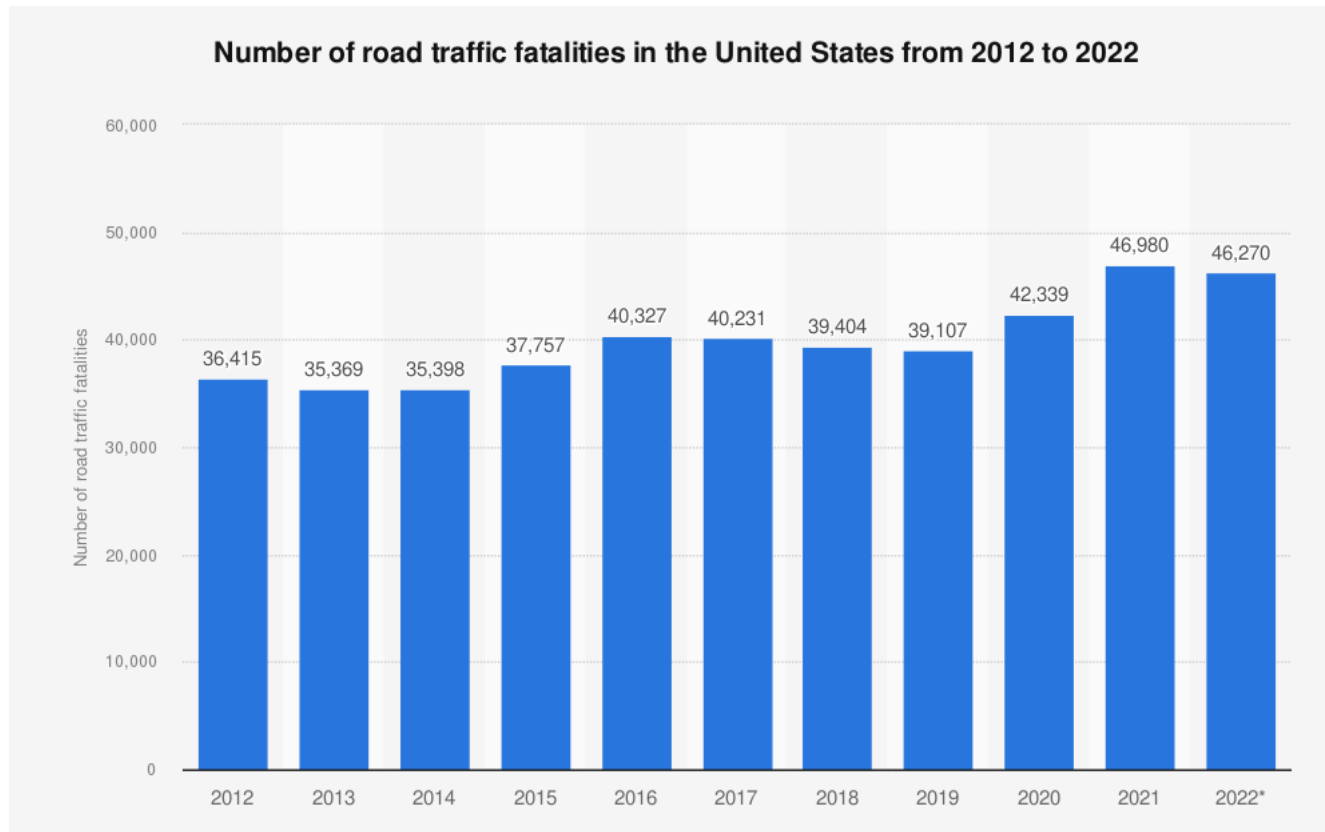


This explains how we got here...



2007

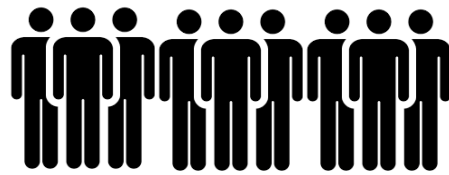
And why we're needlessly losing thousands of lives a year?



Source: Statista [US Road Fatalities](#) based on NSC [Motor Vehicle Deaths](#)

5  /hour

127  /day

3,856 

/month

So how can we get to here...



Where no one has to lose a loved one to traffic violence

IN 2023,
January 31, 2024



CITY OF HOBOKEN REACHES
NEW VISION ZERO MILESTONE:
SEVEN CONSECUTIVE YEARS
WITHOUT A TRAFFIC DEATH



78



On roadways with posted speeds of 35mph or less, narrow (9-10FT) lanes

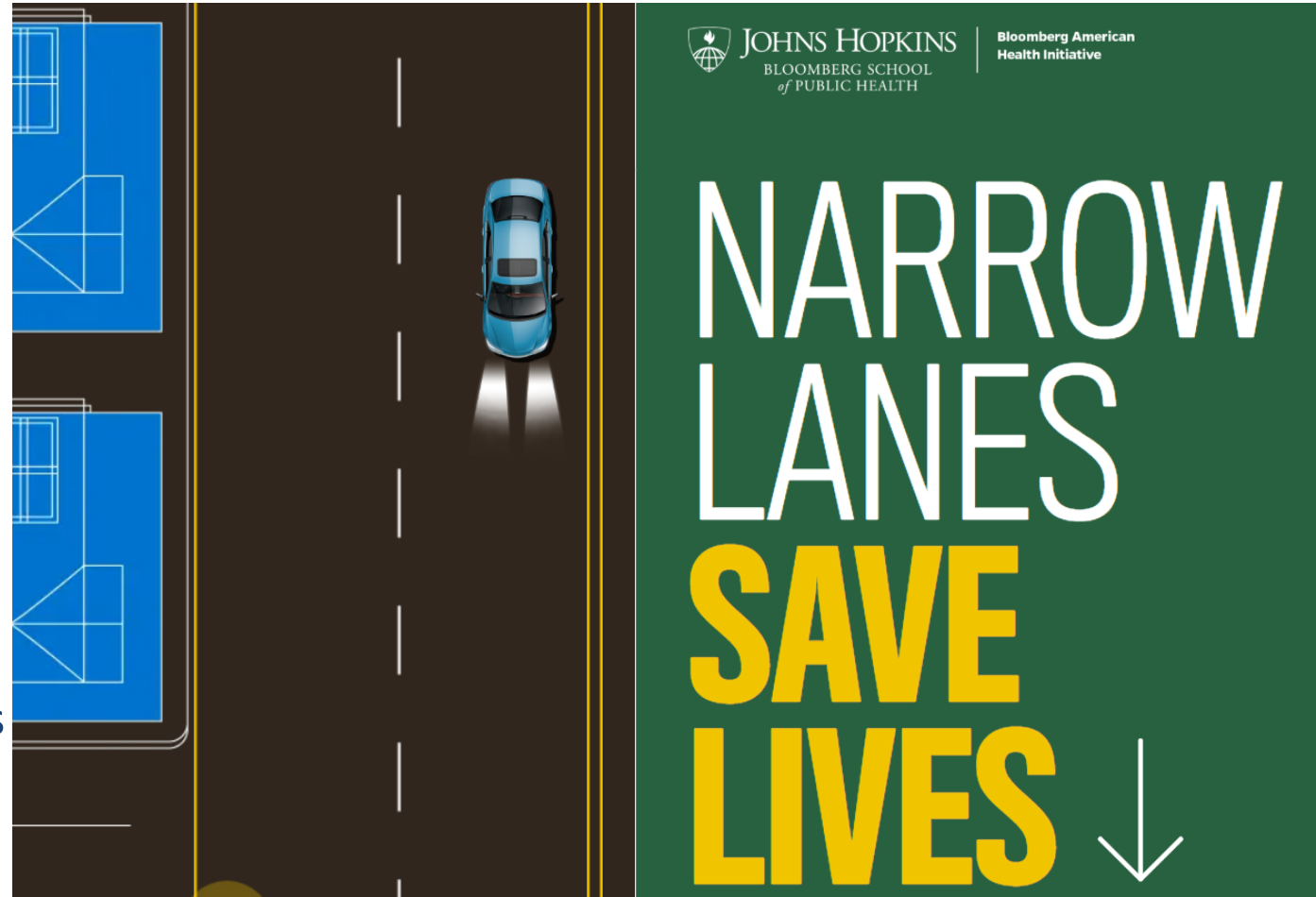


Narrow Lanes – Safety Concerns?

NCHRP

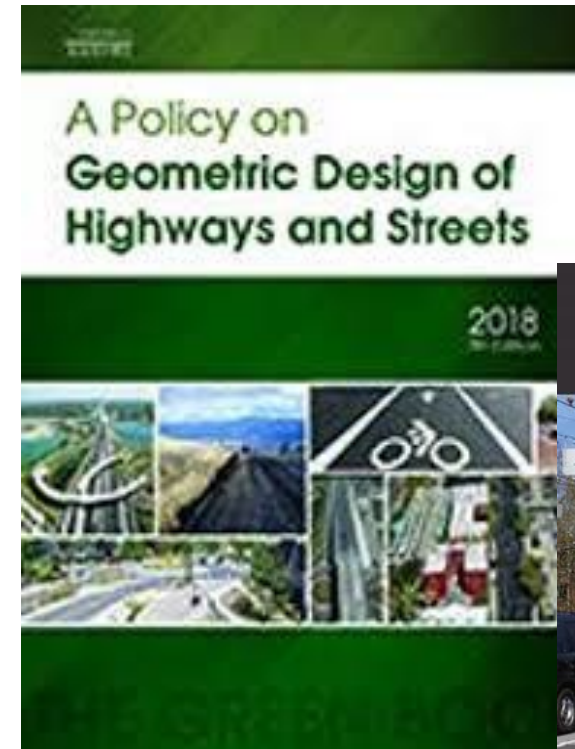
The NCHRP 330 (Effective Utilization of Street Width on Urban Arterials) found that the use of 10-foot lanes resulted in lower or unchanged crash rates.

John Hopkins found that as low as 9 FT lanes on low-speed roads did not increase crashes and in fact lane widths of 12 or greater increased crashes sometimes as much as 50%!



Wider Lanes are Required, Right?

- 11' to 14' lanes were historically favored because it was believed that they would be more forgiving to drivers, especially on high-speed roads
- AASHTO Green Book allows 9' to 12'
- Allows 10' for “low-speed” roads (45mph or less)
- FHWA no longer requires design exceptions for lane width as a controlling criteria

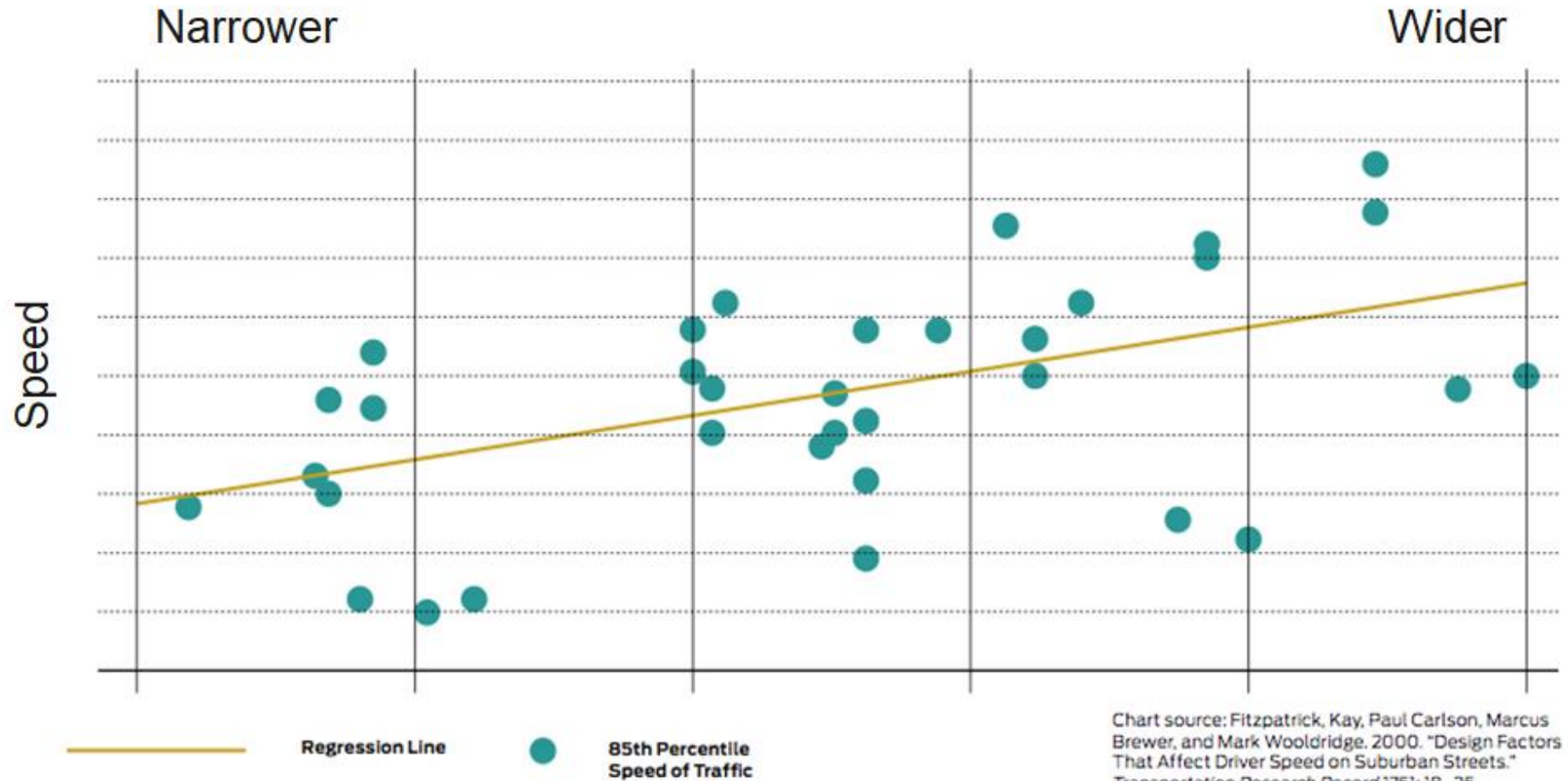


Narrow Lanes – Congestion Concerns?



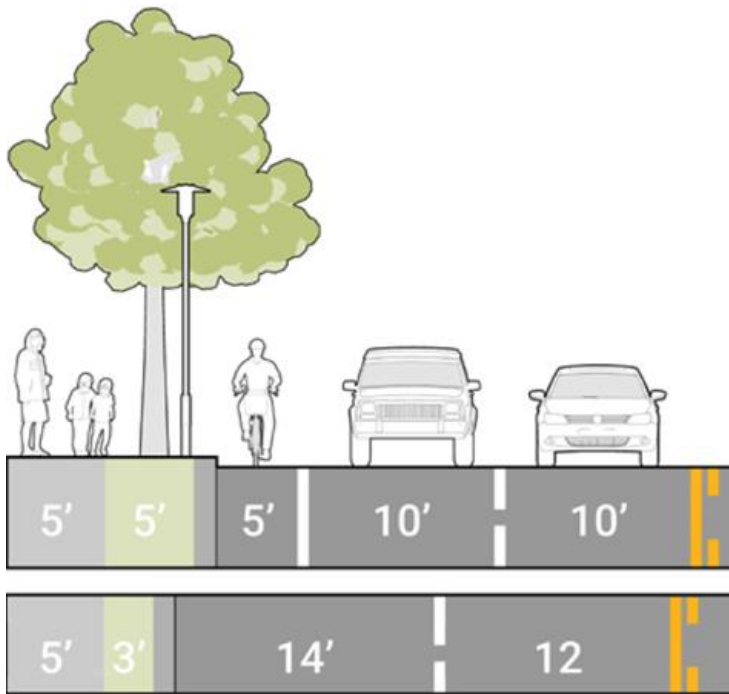
Travel lanes of 10 and 11-feet as part of a thoughtful design of arterials and collectors have no measurable effect on capacity.

Narrower Lanes Can Reduce Speeds



Narrow Lane Benefits

Create Opportunities



Reduce Exposure



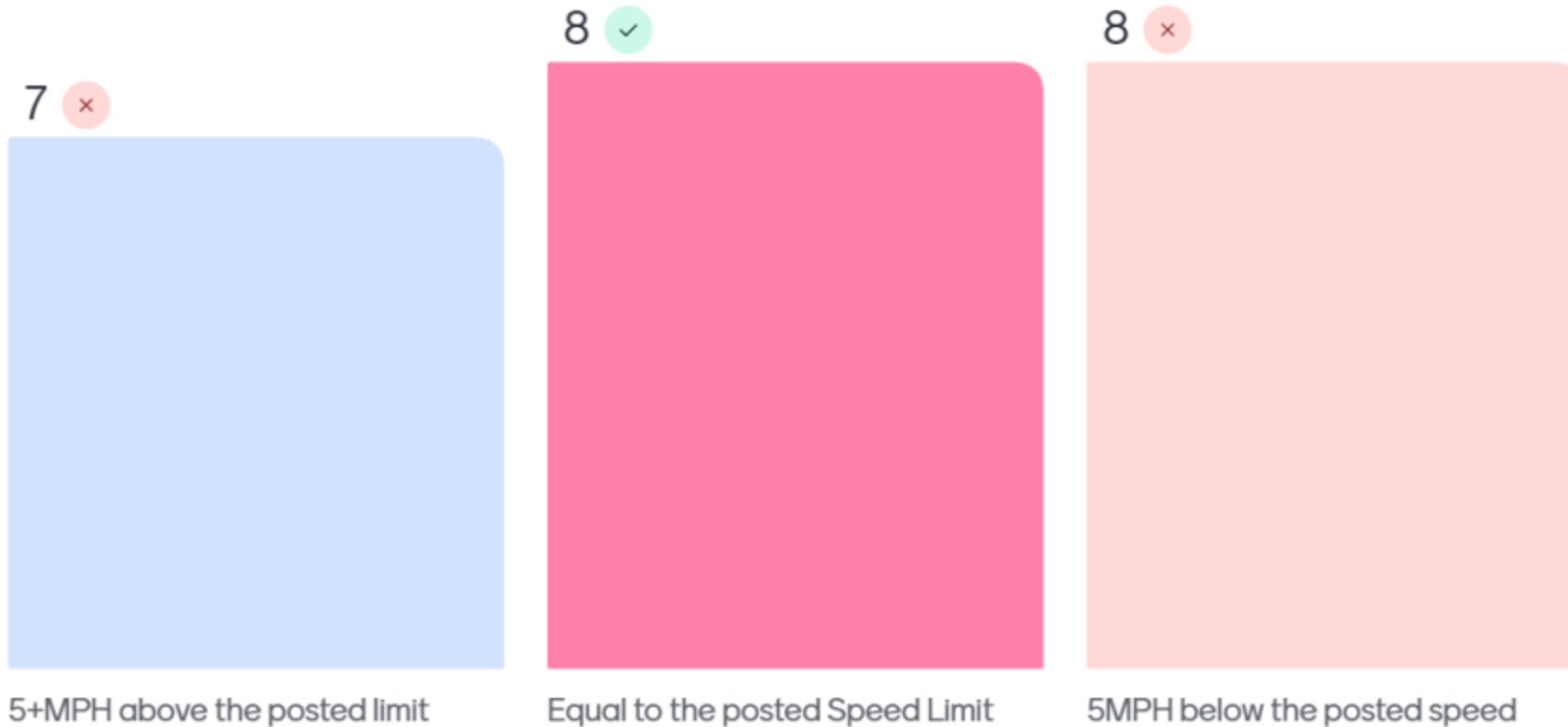
Reduce Signal Timing



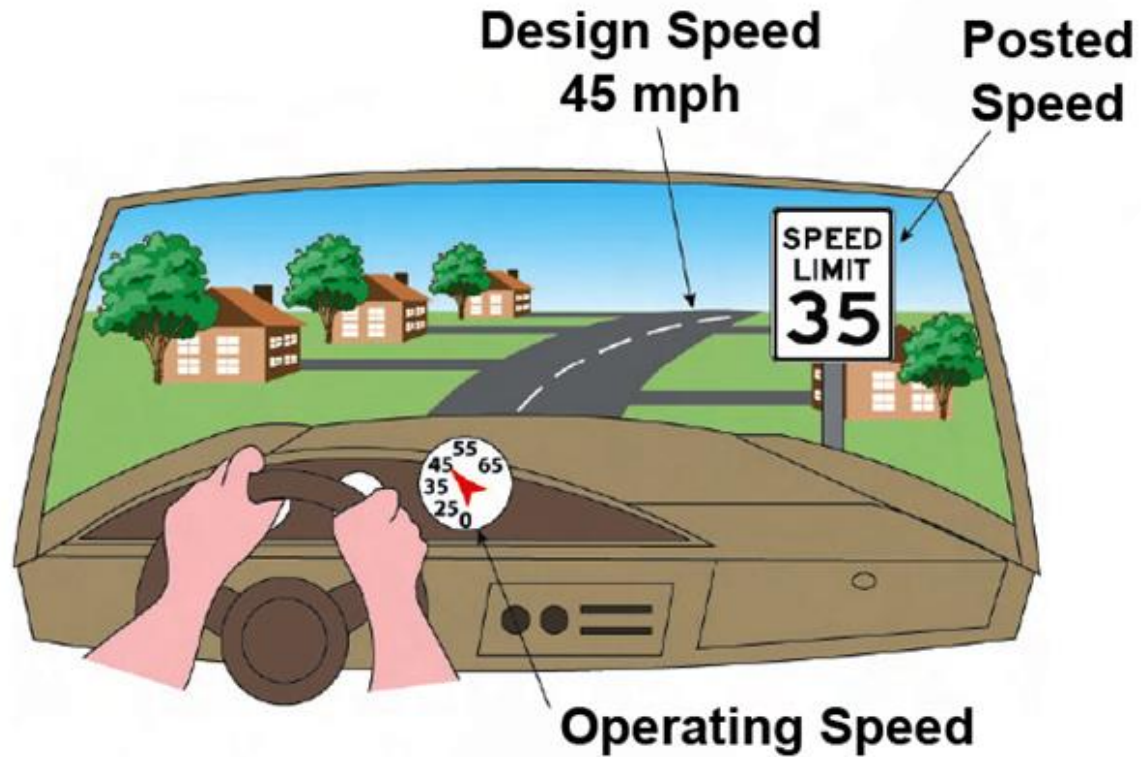
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Mentimeter

Design Speeds should be set



Relationships of Design Speed & Operating Speed



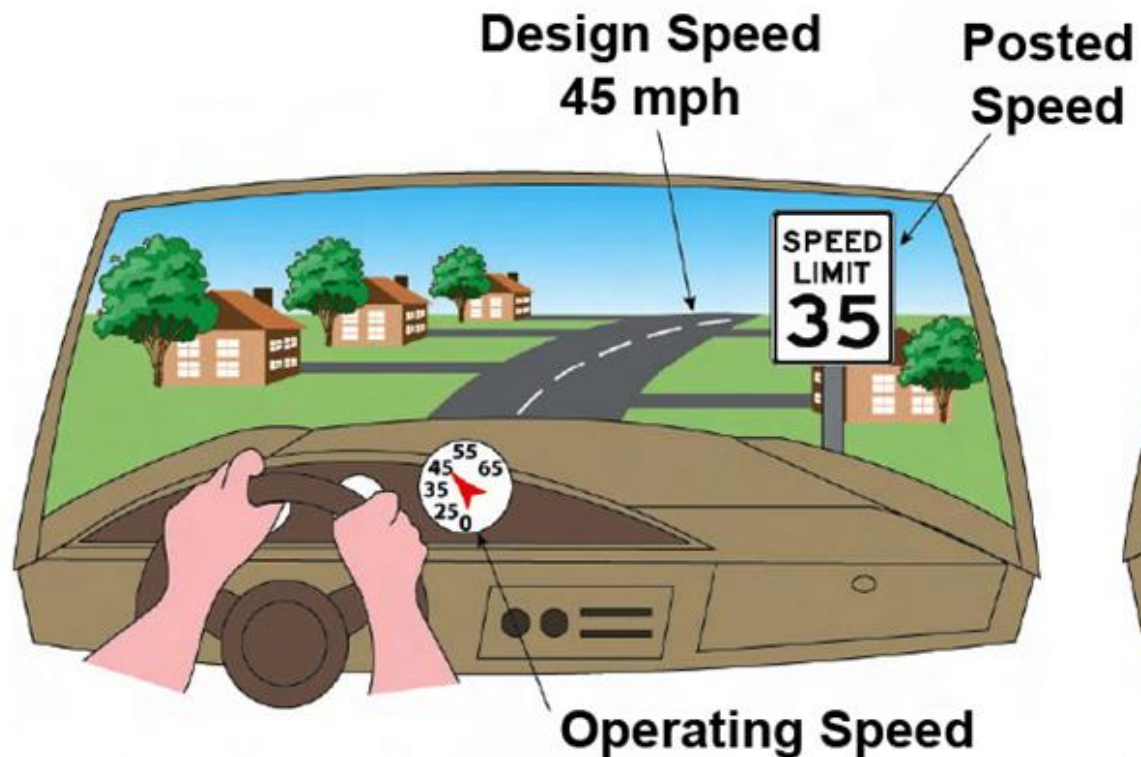
Conventional Design

FHWA Proven Safety Countermeasures: Appropriate Speed Limits for All Road Users

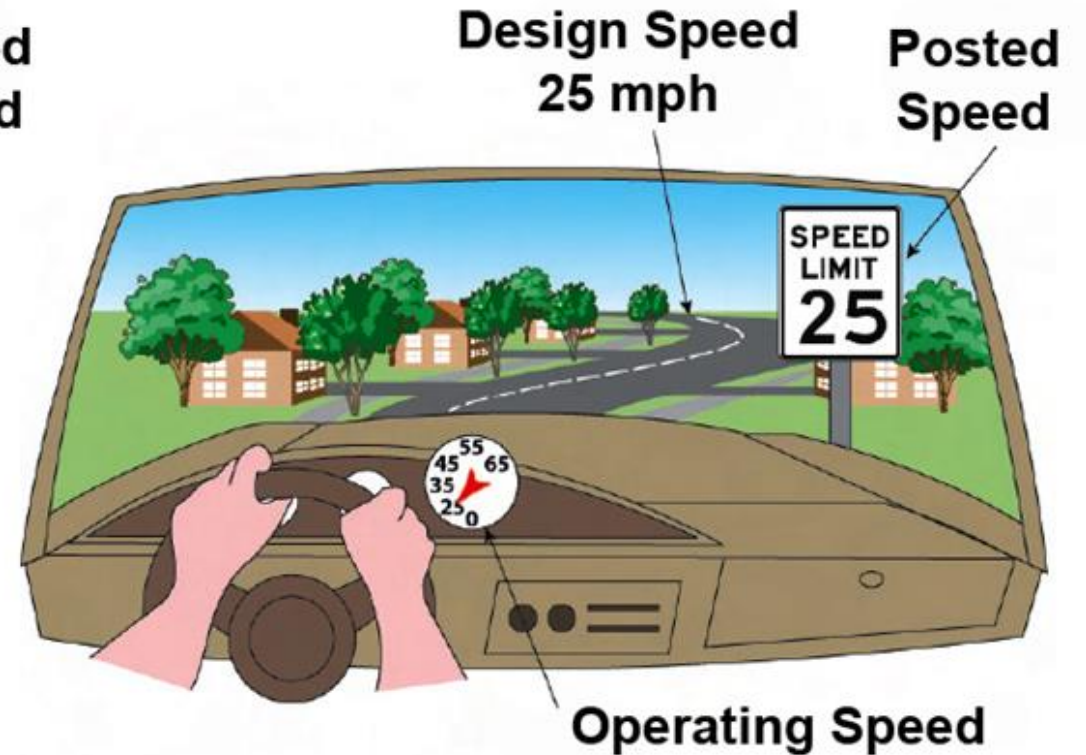


- Traffic fatalities in the City of Seattle decreased by 26% after the city implemented comprehensive, city-wide speed management strategies and countermeasures inspired by Vision Zero. This included setting speed limits on all non-arterial streets at 20 mph and 200 miles of arterial streets at 25 mph.
- A study found that on rural roads, when considering other relevant factors in the engineering study along with the speed distribution, setting a speed limit no more than 5 mph below the 85th-percentile speed may result in fewer total and fatal plus injury crashes, and lead to drivers complying closely with the posted speed limit.

Relationships of Design Speed & Operating Speed



Conventional Design



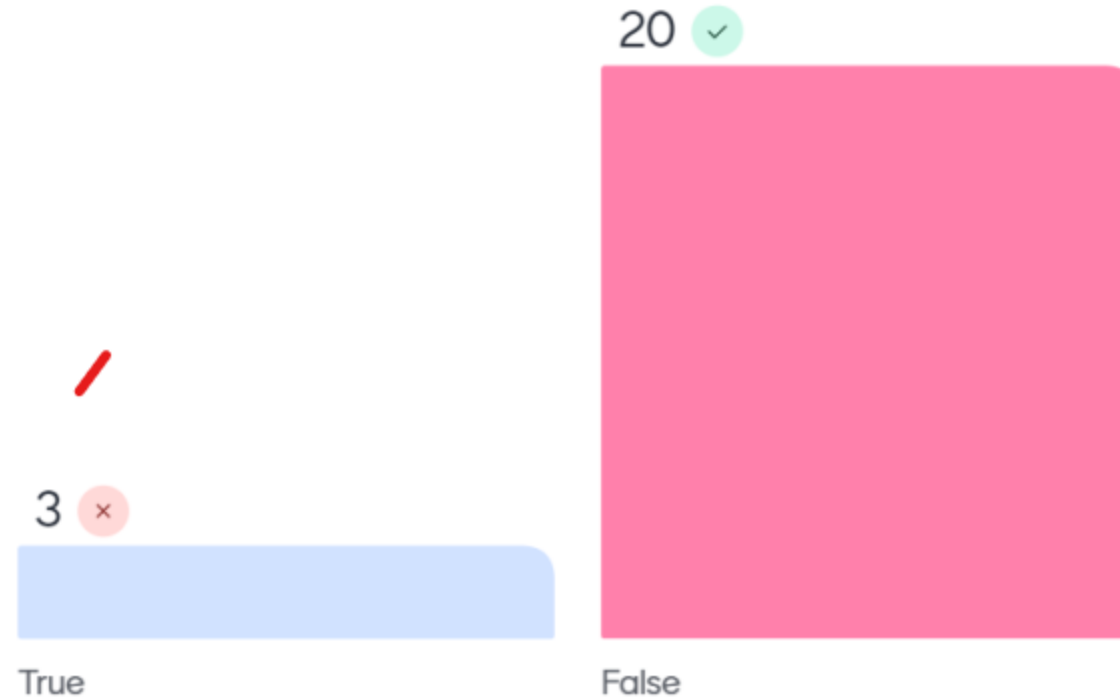
Using Desired Operating Speed

The Importance of Speed Management



Source: Tefft, B. C. Impact speed and a pedestrian's risk of severe injury or death. *Accident Analysis & Prevention*. 50. 2013.

Traffic Calming Devices are detrimental to EMS response times



Traffic Calming Measures that Address Emergency Service Vehicle Delay Issues

Four Independent Studies showed less than one second or zero delay

King County, Washington fire personnel noted less discomfort in the vehicles

FHWA “In before-and-after speed data, speed cushions reduced the 85th percentile speed by an average of approximately 9 mph”

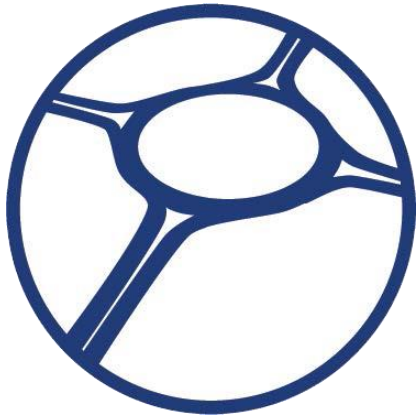


Safe Street Goals align with Fire Department Goals

- Most calls the fire departments respond to are medical (including crashes and cardiac arrests) not fires
 - Eliminating fatal and serious injury crashes frees up EMS to focus on needs
 - Creating more walkable, bikeable communities, improves community health and reduces preventable diseases

FWHA Proven Safety Countermeasures

Roundabouts



**78-82% Crash
Reduction**

Road Diets



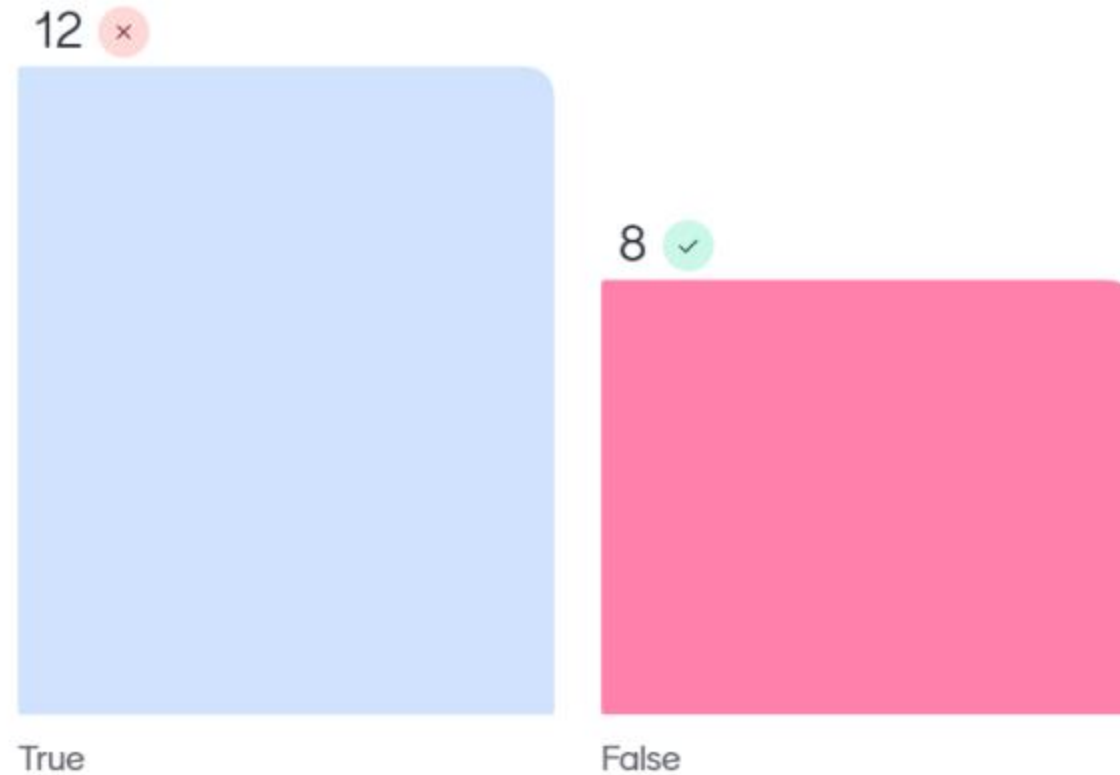
**19-47% Crash
Reduction**

Bike Lanes



**49% Bike/Veh Crash
Reduction**

Crosswalks create a false sense of security



“False Sense of Security” originates from a misinterpretation of the Zeeger Study

New FHWA guidance states explicitly that:

“Based on the existing and original research, this guide recommends using High Visibility Crosswalks for all uncontrolled marked crosswalks as well as midblock crossings.”

Three parallel diagonal lines in a dark blue color, located in the bottom right corner of the slide.

MUTCD – Marked Crosswalks

New marked crosswalks alone, without other measures designed to reduce traffic speeds, shorten crossing distances, enhance driver awareness of the crossing, and/or provide active warning of pedestrian presence, **should not be installed across uncontrolled roadways where the speed limit exceeds 40 mph and either:**

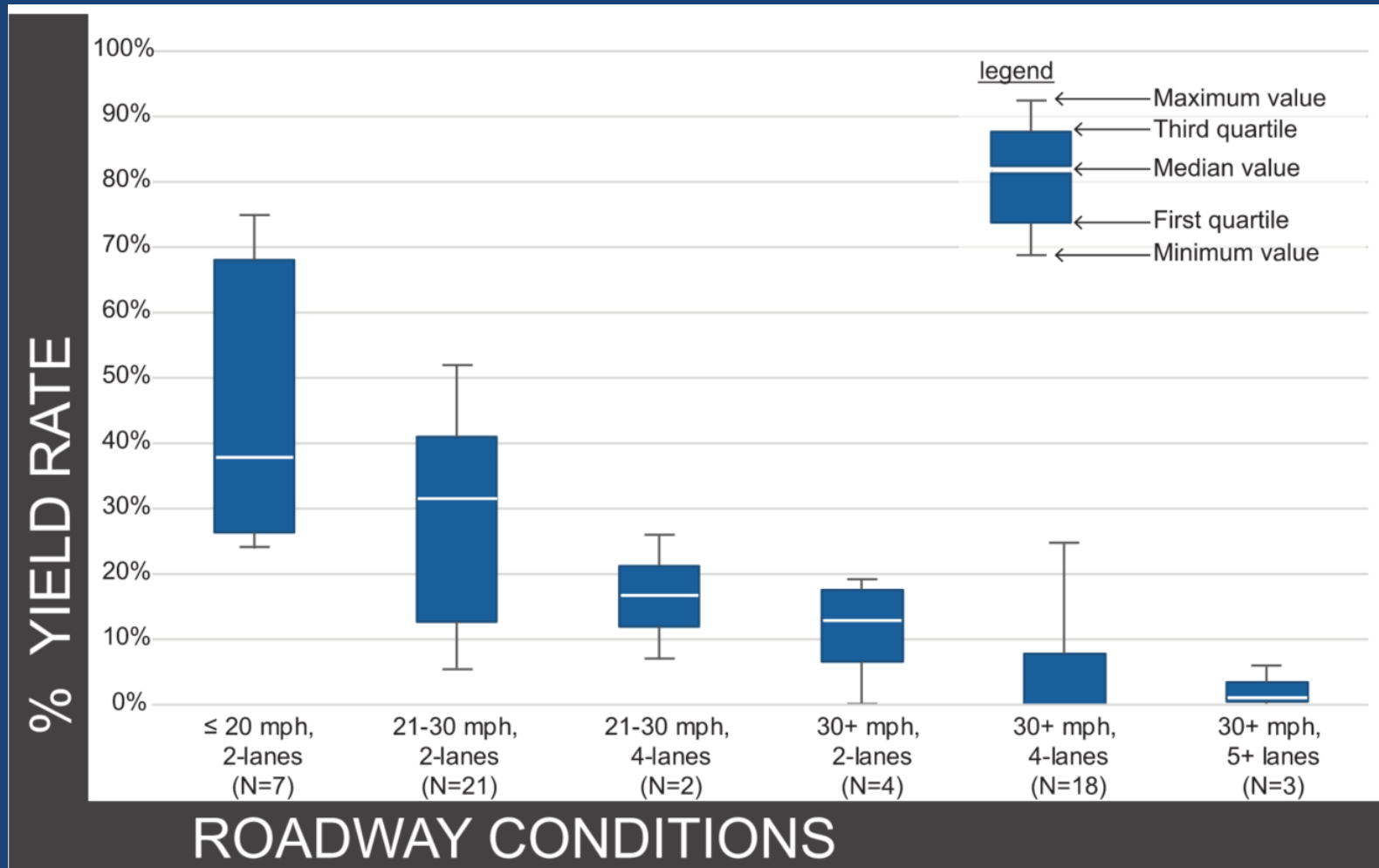
- The roadway has four or more lanes of travel without a raised median or pedestrian refuge island and an ADT of 12,000 vehicles per day or greater; or
- The roadway has four or more lanes of travel with a raised median or pedestrian refuge island and an ADT of 15,000 vehicles per day or greater.

MUTCD – Marked Crosswalks

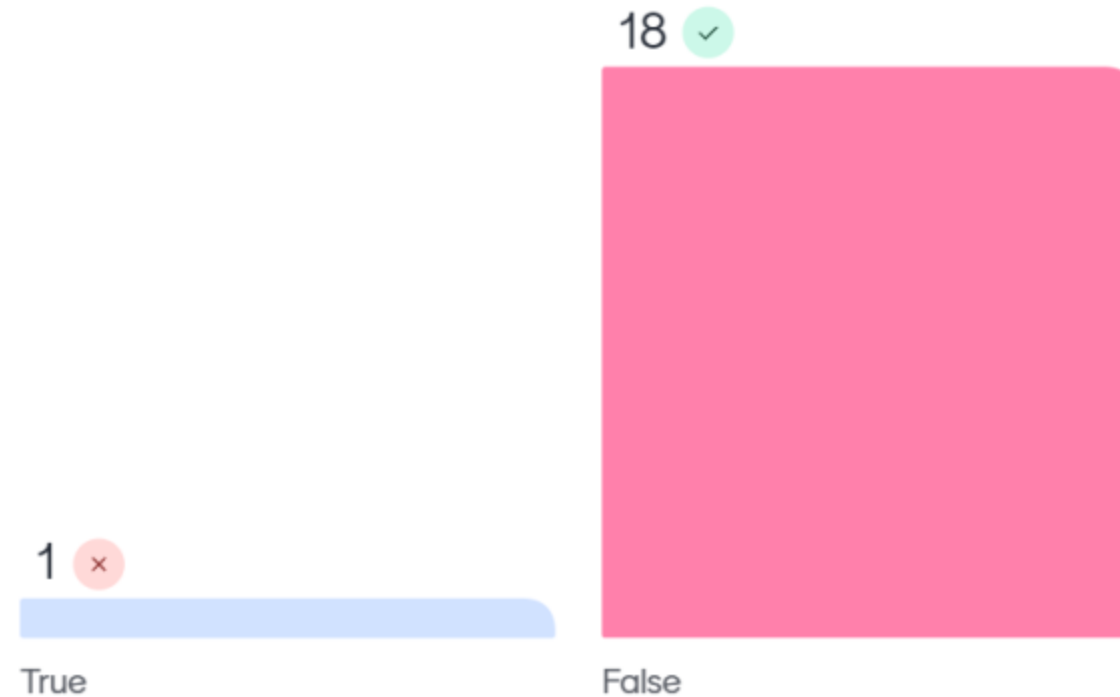
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- The roadway has four or more lanes of travel without a raised median or pedestrian refuge island and an ADT of 12,000 vehicles per day or greater; or
- The roadway has four or more lanes of travel with a raised median or pedestrian refuge island and an ADT of 15,000 vehicles per day or greater.

Factors That Impact Motorist Yielding Rates



Replacing parking with bike lanes will result in a loss of business



Bike Lanes and Trail Towns are Economic Boons for Small Towns and Cities Alike

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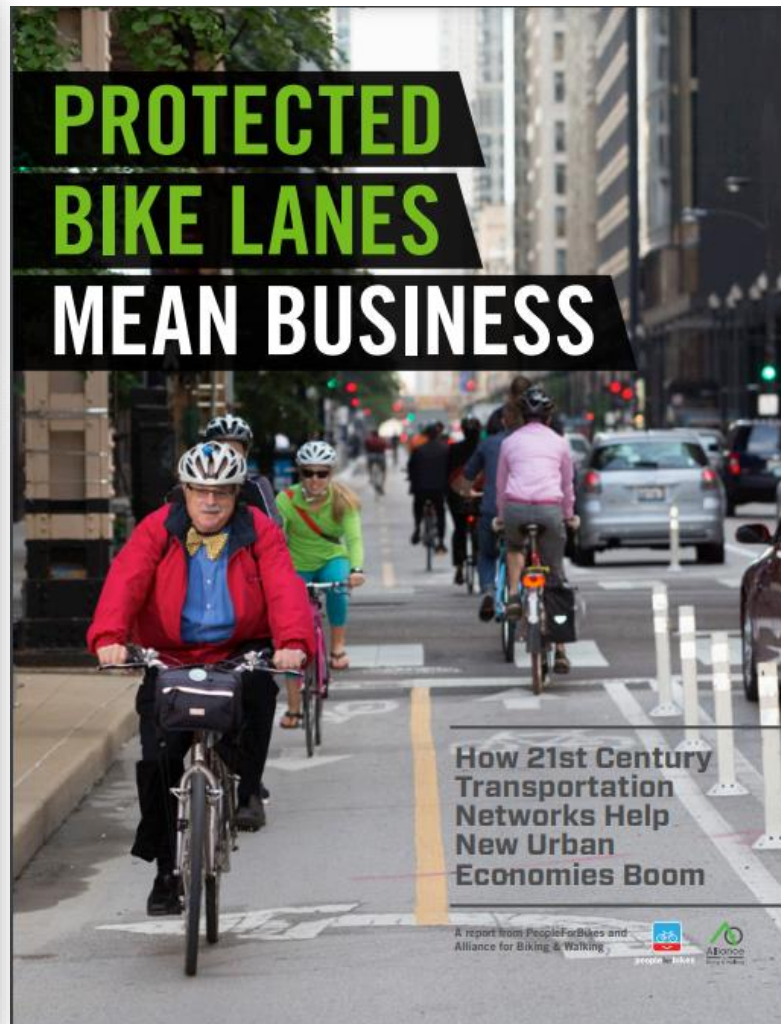
DISCOURSE | TRANSPORTATION

Bike lanes are good for business

Study after study proves it. So why do so many shops and restaurants still oppose better streets?



PROTECTED BIKE LANES MEAN BUSINESS



How 21st Century
Transportation
Networks Help
New Urban
Economies Boom

A report from PeopleForBikes and
Alliance for Biking & Walking



What design standards have been a barrier for redesigning for safety in your community?

14 responses

INDOT - being very slow at implimenting projects.

Politicians

Trucks

Travel time THROUGH town.

Funding

Raised crosswalks.

If we do it "I" can't drive as fast!

Snow removal

Parking minimums. Need for wide lanes to make space for manufacturing transportation .

Lack of planning rules within city codes. A scattering of separate rules (exceptions) for specific businesses or individuals.

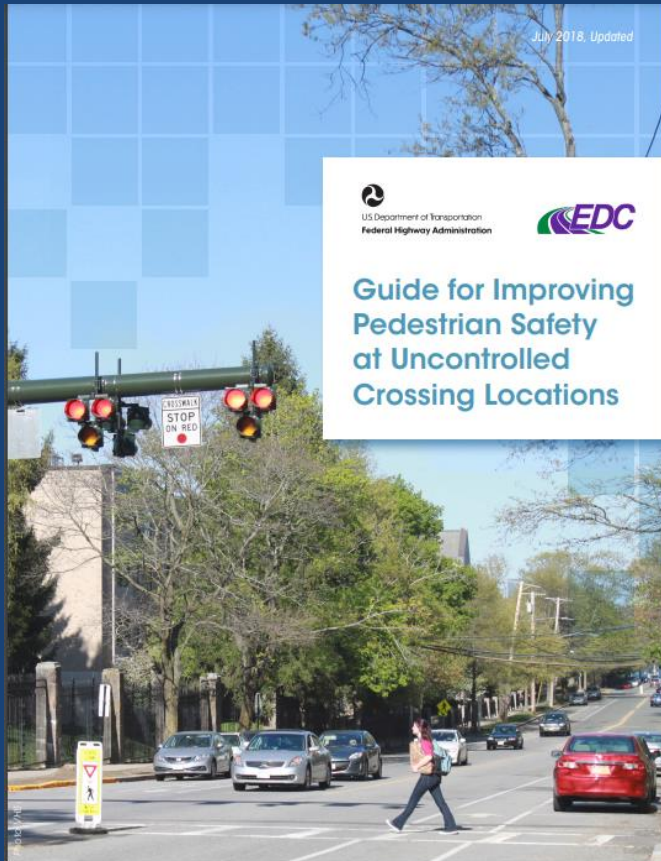
For roundabouts—space, money, and cultural awareness

Local PoliciesSlow down travel time

Cost

Not enough funding

Tools for Designing for Safety



Traffic Calming ePrimer

The Traffic Calming ePrimer is a free, online resource openly available for public use. The ePrimer presents a thorough review of current traffic calming practice and contains the information needed to understand this complex field. The ePrimer is presented in eight distinct modules developed to allow the reader to move between each to find the desired information, without a cover-to-cover reading. The ePrimer presents:

- a definition of traffic calming, its purpose, and its relationship to other transportation initiatives (like complete streets and context sensitive solutions);
- illustrations and photographs of 22 different types of traffic calming measures;
- considerations for their appropriate application, including effects and design and installation specifics;
- research on the effects of traffic calming measures on mobility and safety for passenger vehicles; emergency response, public transit, and waste collection vehicles; and pedestrians and bicyclists;
- examples and case studies of both comprehensive traffic calming

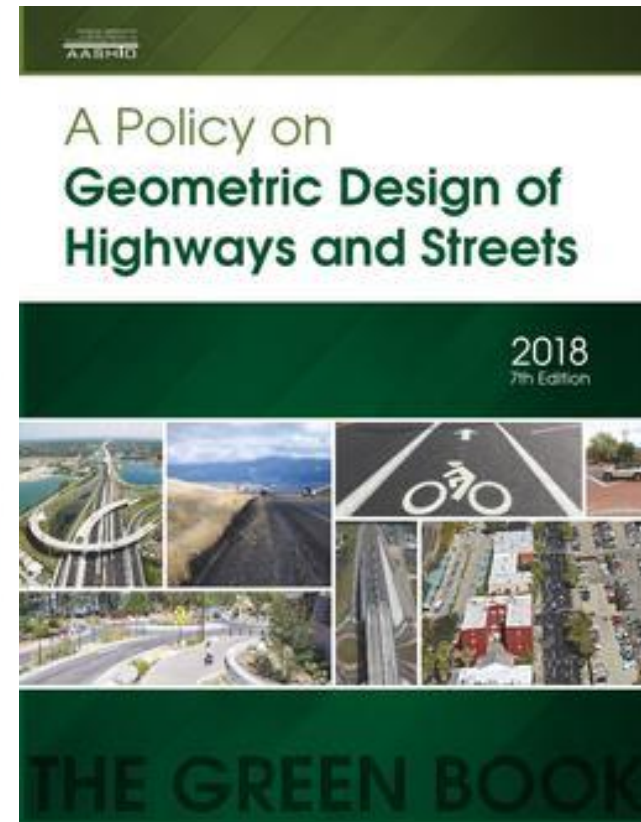
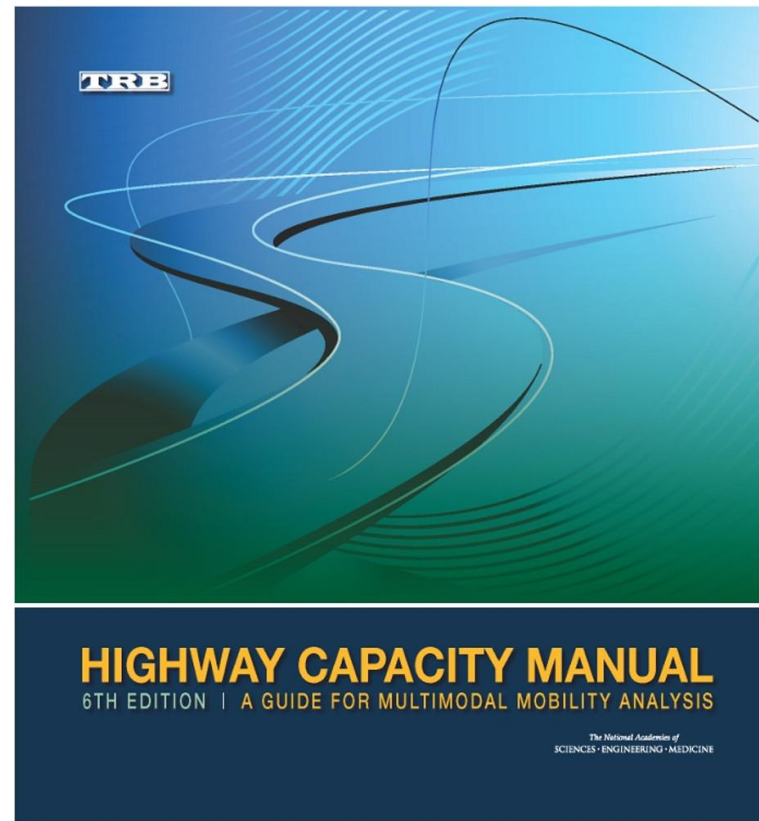
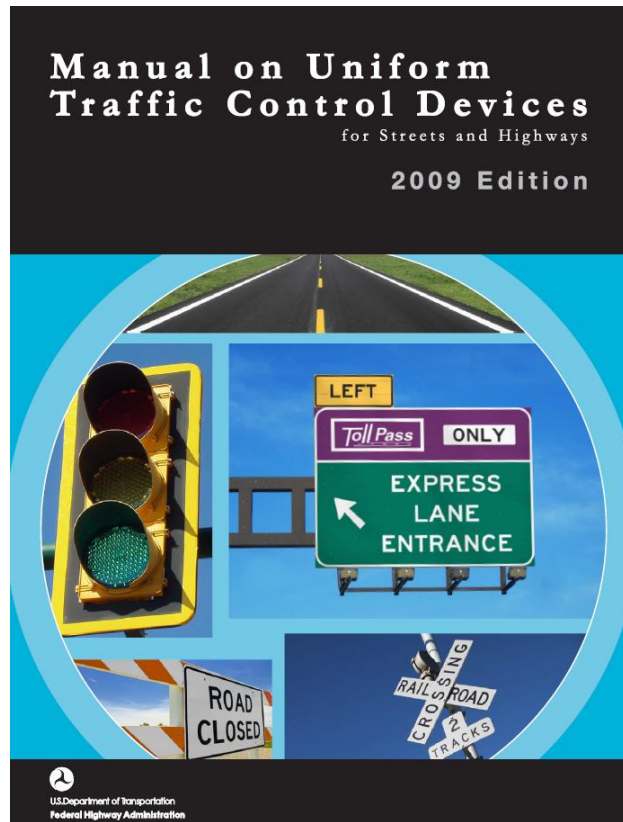


Flexibility within Existing Guidelines to Support Safety Based Designs

- Equip practitioners and policy makers with information that will help create more and better multimodal networks.
- Address the concerns and perceived barriers that practitioners face.
- Help practitioners see how they can use existing guidance to achieve the goal of better multimodal networks.



Standards & Guidance



MUTCD

Section 1A.09 Engineering Study and Engineering Judgment

Support:

01 Definitions of an engineering study and engineering judgment are contained in Section 1A.13.

Standard:

02 **This Manual describes the application of traffic control devices, but shall not be a legal requirement for their installation.**

Guidance:

03 *The decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment. Thus, while this Manual provides Standards, Guidance, and Options for design and applications of traffic control devices, this Manual should not be considered a substitute for engineering judgment. Engineering judgment should be exercised in the selection and application of traffic control devices, as well as in the location and design of roads and streets that the devices complement.*

Rev. 1

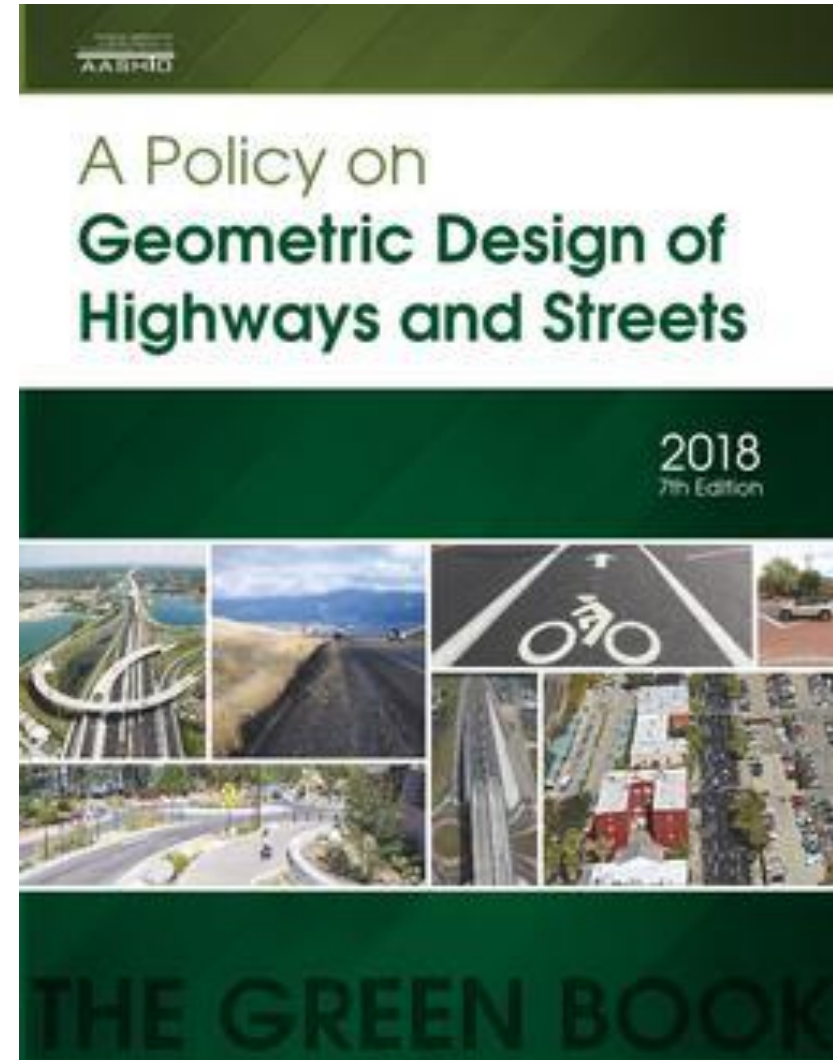
AASHTO Policy

Context Classification for Geometric Design

“Many design dimensions are specified as ranges of values rather than single values, minimum values, or maximum values.”

Design values should be determined to fit project needs suitable to:

- Land use context
- Desired motorist speeds
- Multimodal and safety needs

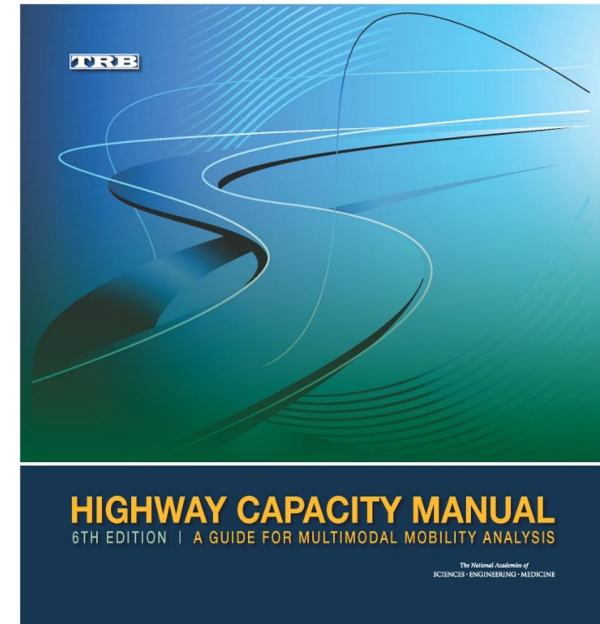


Highway Capacity Manual 2016

LOS as Part of a Bigger Picture

Neither LOS nor any other single performance measure tells the full story of roadway performance. Depending on the particulars of a given analysis, queue lengths, demand-to-capacity ratios, average travel speeds, indicators of safety, quantities of persons and vehicles served, and other performance measures may be just as or even more important to consider, whether or not they are specifically called out in an agency standard. For this reason, the HCM provides

No single performance measure tells the full story of roadway performance.



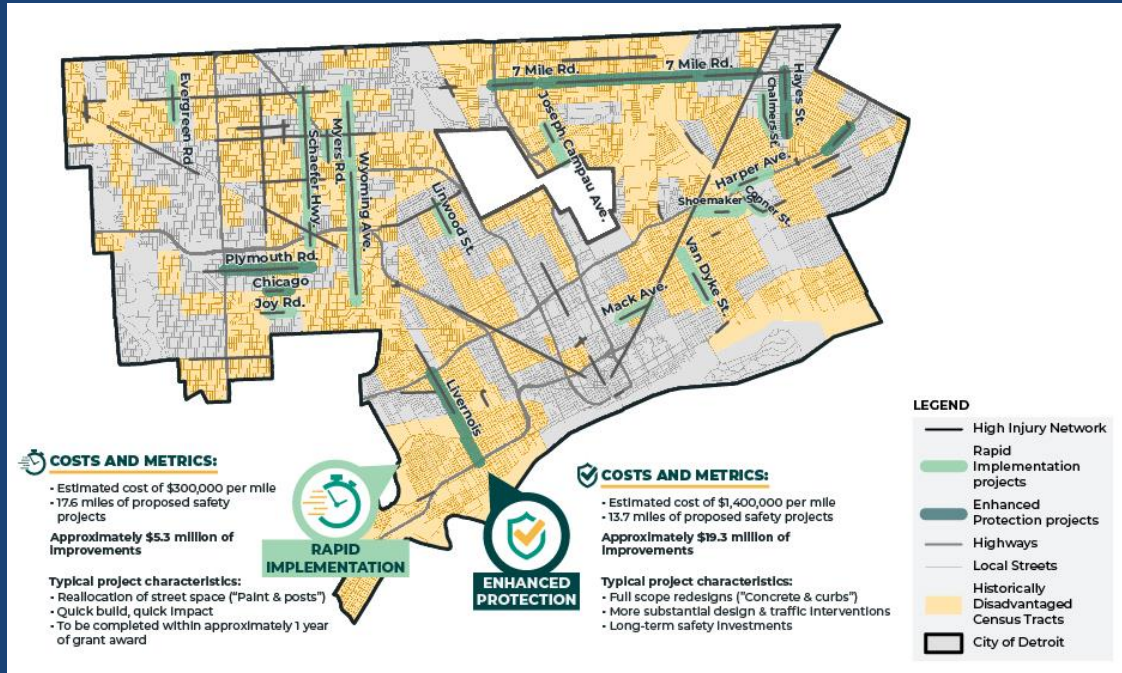
Strictly adhering to the most conservative design values without considering other relevant factors may not constitute reasonable care on behalf of the designer.

FHWA Achieving Multimodal Networks

Applying Design Flexibility and Reducing Conflicts



Infrastructure Implementation Approaches

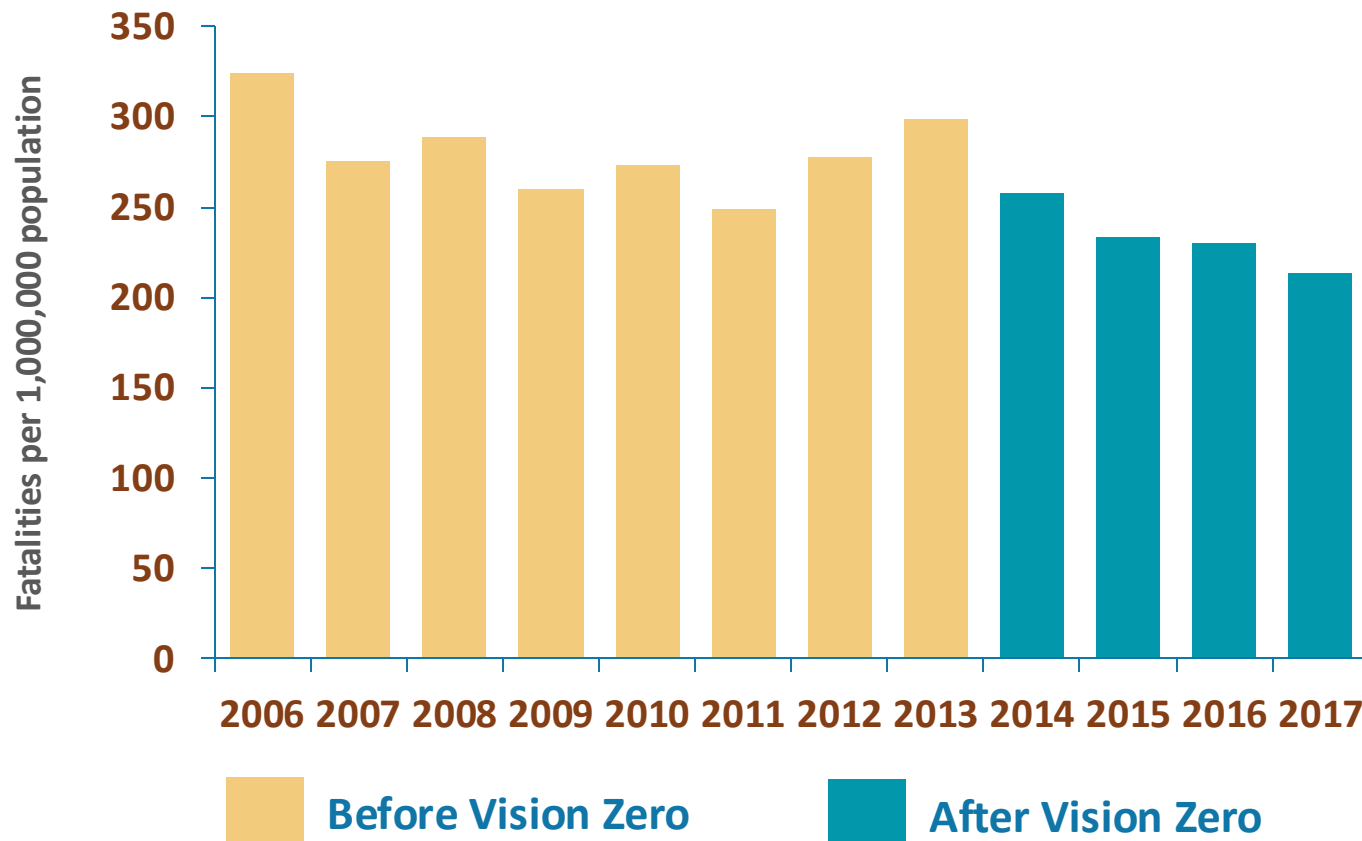


Systemwide Interventions



Corridor Specific Interventions

Fatality Reductions – New York City



- Arterial and neighborhood slow zones
- Slowing left turn speeds
- Pedestrian refuge islands and LPIs
- Bike facilities
- Community outreach and education
- Enforcement targeted toward dangerous behaviors (based on data)
- City and State legislative actions
 - Reduced citywide speed limit
 - Added cameras to school zones
 - Red light camera program

Jersey City, New Jersey

- **VISION ZERO SUCCESS!**
- A city where planning, quick action, and consistency have made a notable impact.
- Focusing on consistency between city and state institutions.
- Routine, systematic implementation of small projects city-wide.

(also: Hoboken, NJ!)



ODOT Designs Pedestrian Safety Program to Fast-Track Project Construction

KEY ELEMENTS:

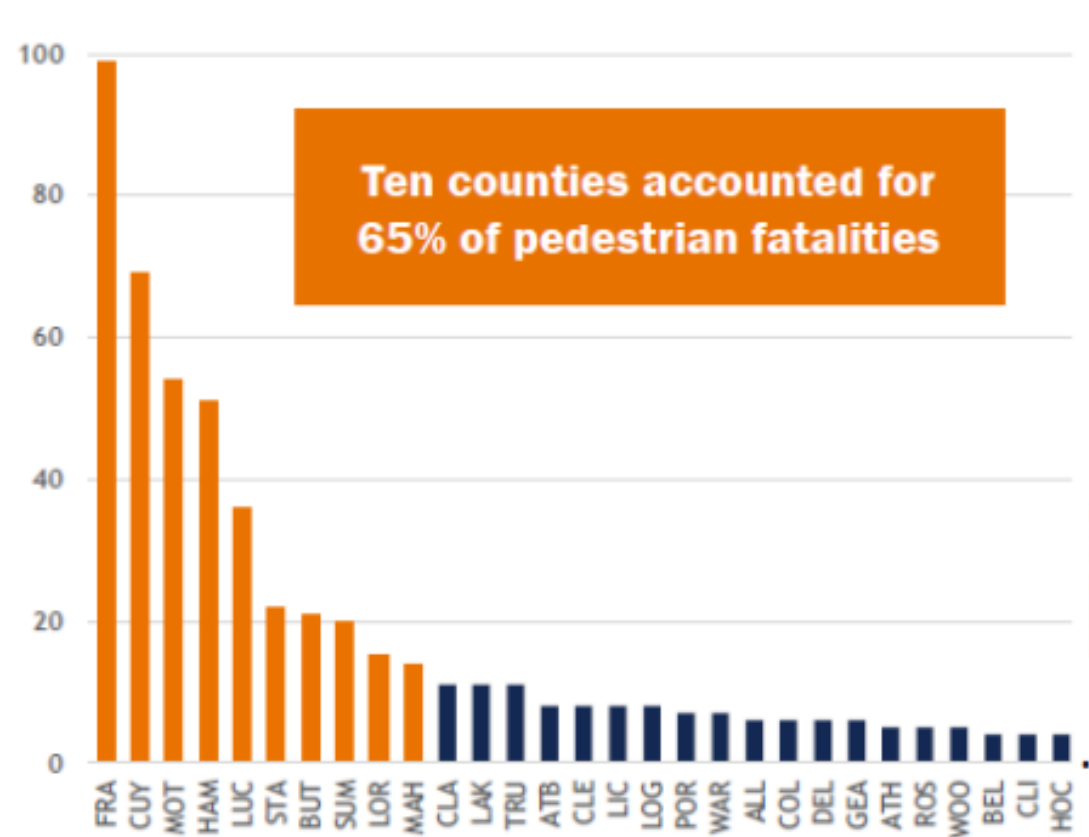


Incorporating STEP Countermeasures



Implementation Focused

The Ohio Department of Transportation created the Pedestrian Safety Improvement Program to rapidly implement low and medium-cost countermeasures along arterials and collectors. The program incorporates STEP countermeasures at midblock locations and intersections.



©ODOT

Figure 1. Graphic. Pedestrian fatalities by county.

An aerial photograph of a city skyline, likely Indianapolis, with a blue overlay. The image shows a dense urban area with various buildings, including a prominent tall skyscraper on the left. A river is visible in the background. The text "High Priority Network Maps and Activity" is centered over the image in a white, sans-serif font.

High Priority Network Maps and Activity

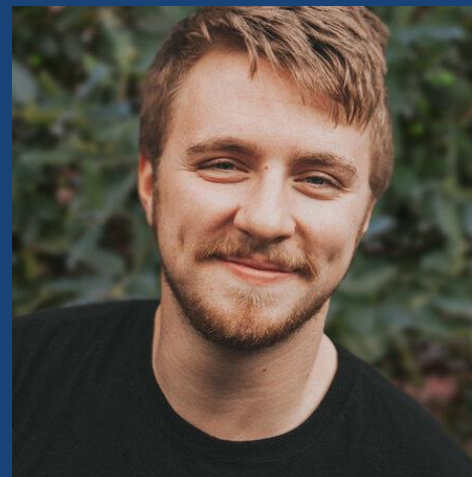
**What's your systemic
safety implementation
plan?**



Tobi Otulana
Policy and Equity Analysis



Mariel Colman, PE, AICP
Lead Engineer



Tariq Shihadah, RSP2I, EI
Data Analyst



Theja Putta, PHD
Data Analyst



Marjorie Hennessey, Health by Design
Community Engagement Lead



Rahul Rajbhara, American Structurepoint
Local Engineering Lead



Katie Sieb
Tactical Urbanism
Guidebook



Ayden Cohen, RSP1
Deputy Project Manager