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Agenda

- Michigan's Safety Report Card
- Implementing the Safe System Approach
- Southeast Michigan Deeper Dive
- Roundabout Evaluation – National vs Michigan

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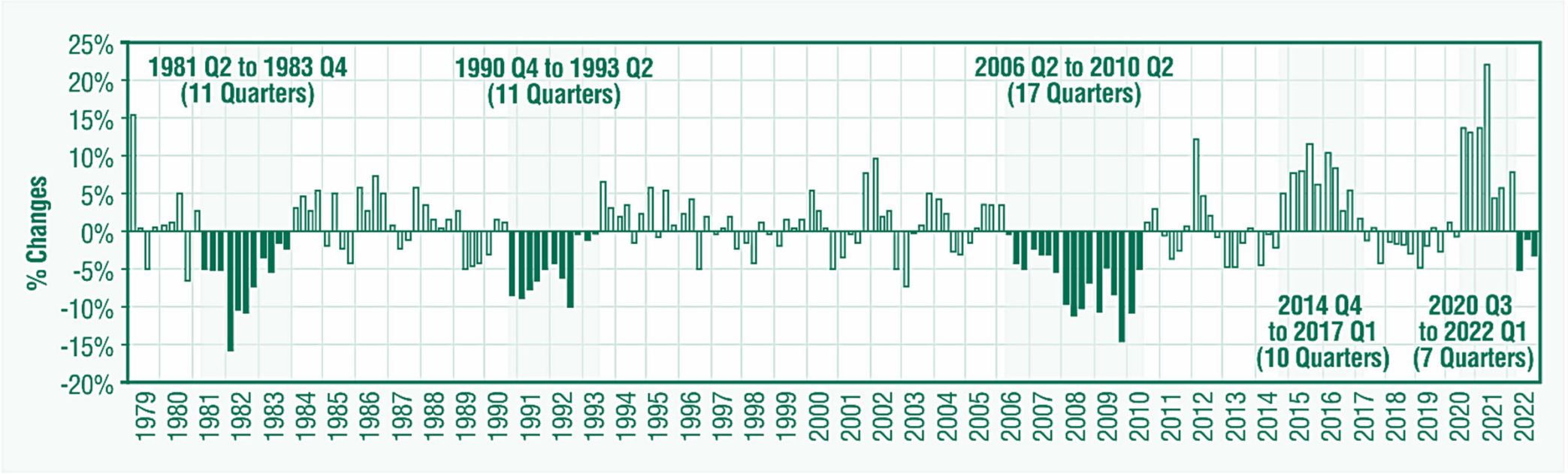
Michigan's Safety Report Card

Fatality trends in the US have fluctuated but overall do not represent a downward trend toward zero deaths

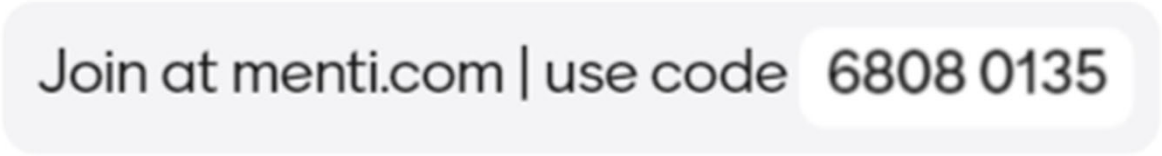
Figure 1: Percentage Change in Fatalities in Every Quarter as Compared to the Fatalities in the Same Quarter During the Previous Year



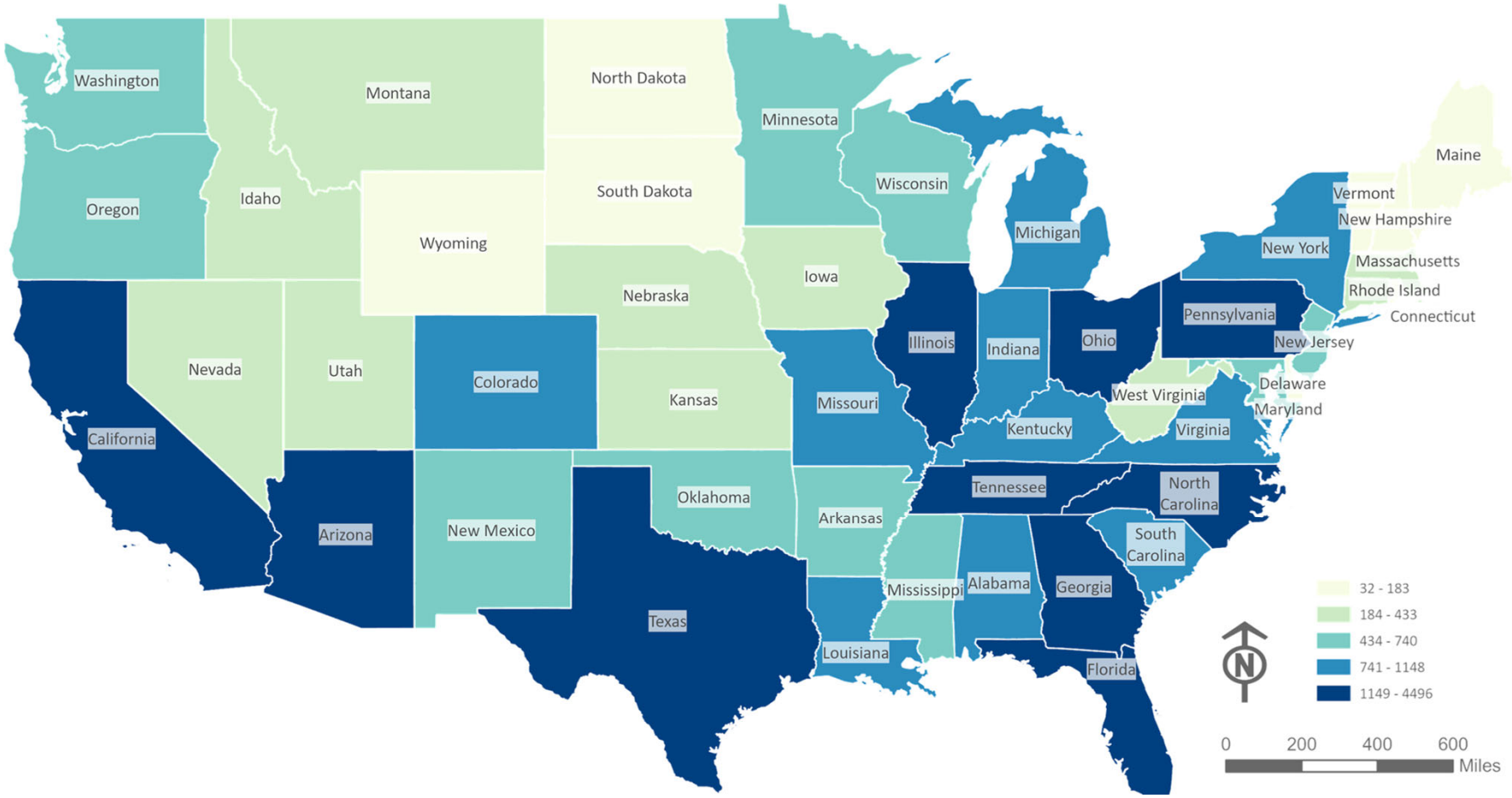
Sources: 1979–2020 FARS Final File, 2021 FARS Annual Report File. 2022 statistical projections.

Live Polling

- **What are the trends in the State of Michigan?**
- **How does the State of Michigan compare to national fatality and injury rates?**

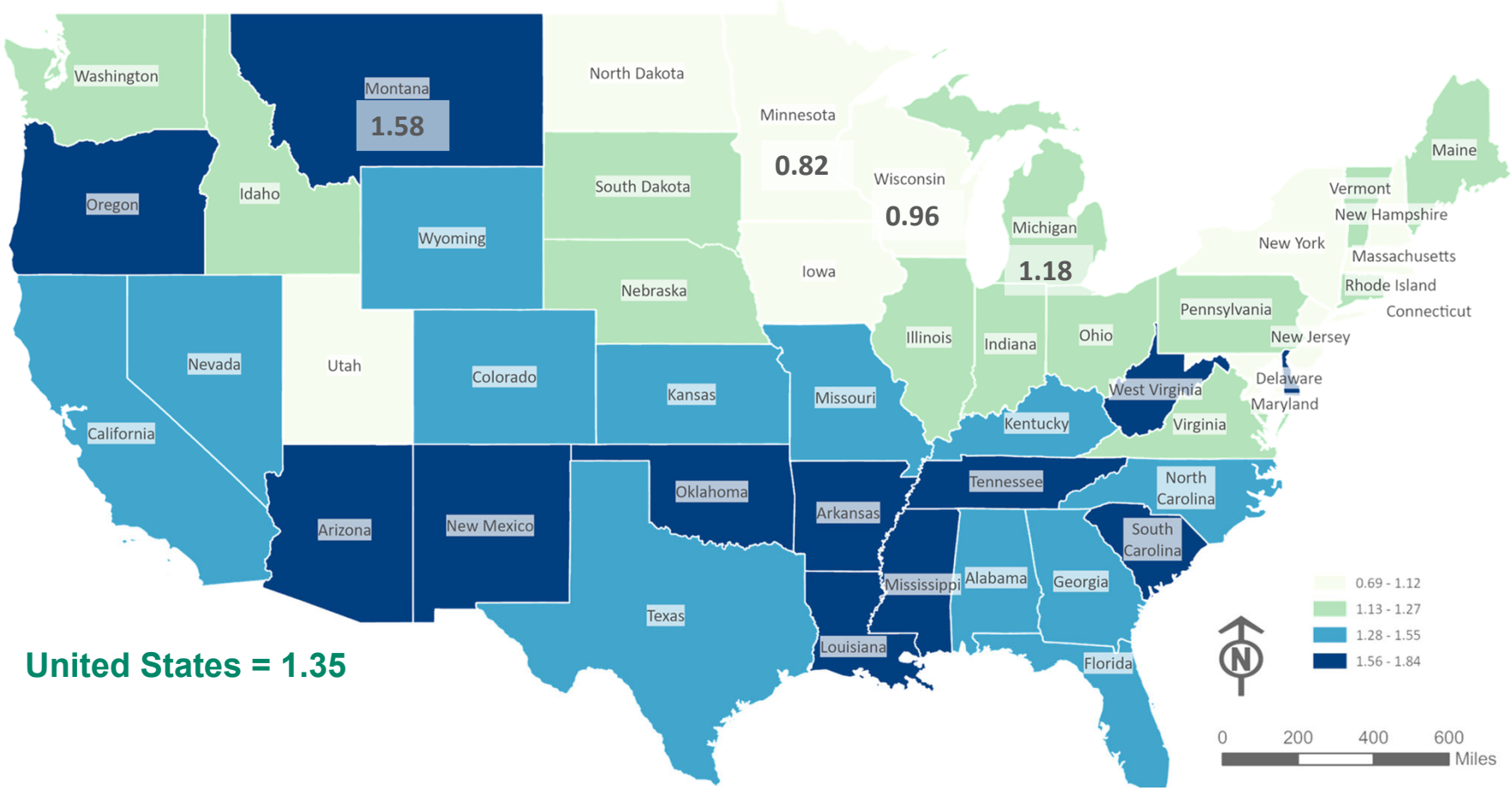


State Distribution of Fatal Crashes 2022



Sources: USDOT Fatality Analysis Reporting System (FARS) and
FHWA Office of Highway Policy Information, National Highway Traffic Safety Administration

State Distribution of Fatality Rate per 100M VMT, 2022



United States = 1.35

Sources: USDOT Fatality Analysis Reporting System (FARS) and
FHWA Office of Highway Policy Information, National Highway Traffic Safety Administration

Michigan Fatality Rate Compared To National Averages And Peers

State	2022 Fatalities	Rate per 100M VMT
Rhode Island	54	0.69
Minnesota	458	0.82
Wisconsin	602	0.96
Ohio	1,278	1.16
Indiana	955	1.17
Michigan	**1,133**	**1.18**
Pennsylvania	1,191	1.24
Illinois	1,280	1.26
United States	**42,795**	**1.35**
Kentucky	749	1.50
South Carolina	1,085	1.84

Sources: USDOT Fatality Analysis Reporting System (FARS) and
FHWA Office of Highway Policy Information, National Highway Traffic Safety Administration

Michigan Report Card Summary (2013 – 2022)

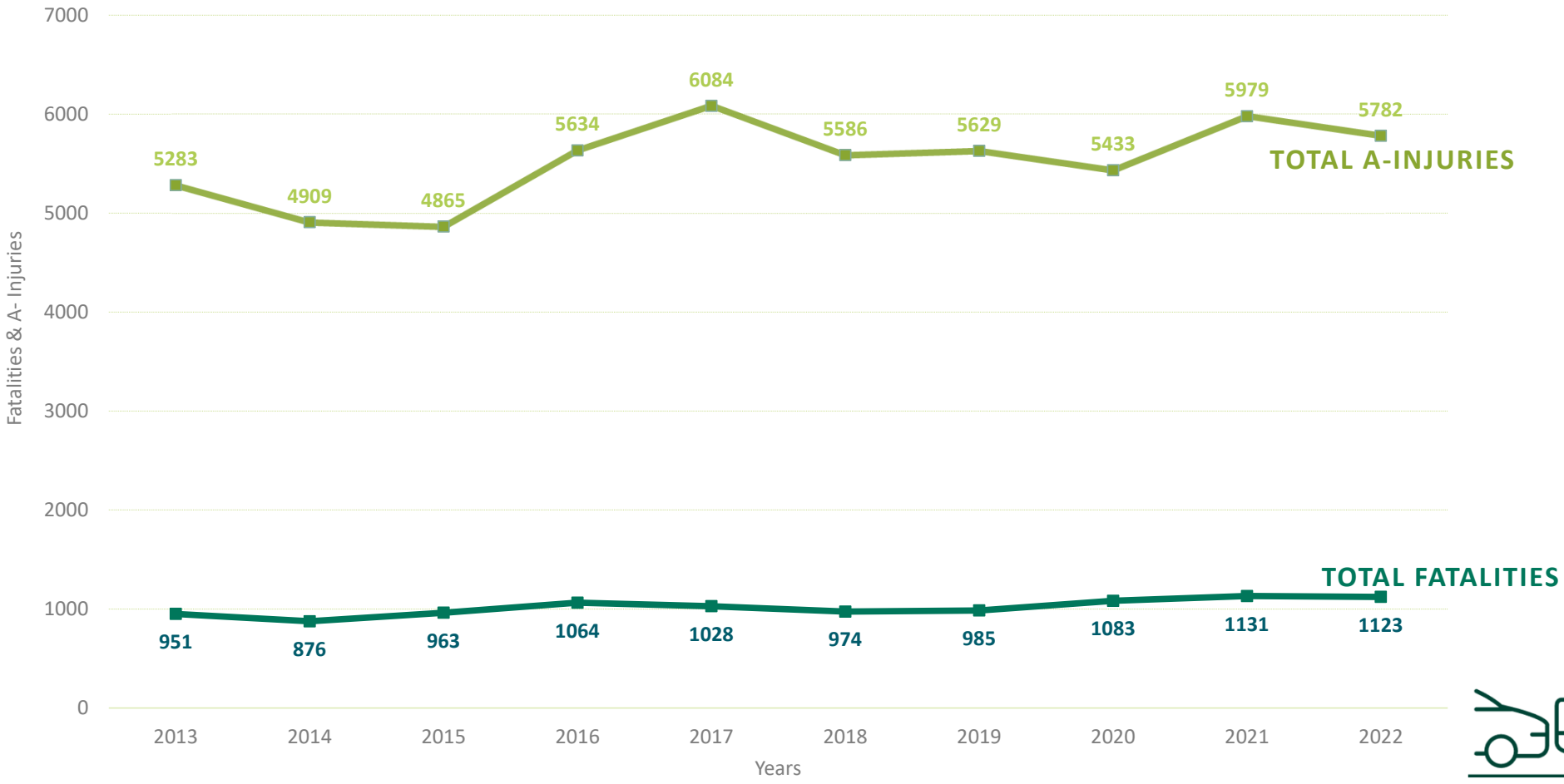
Average **6,536** Fatalities and A injuries every year

18 Fatalities and A injuries every day

15 serious injuries every day

3 fatal crashes every day

STATEWIDE TOTAL FATALITIES AND A-INJURIES



Sources: Michigan Traffic Crash Facts

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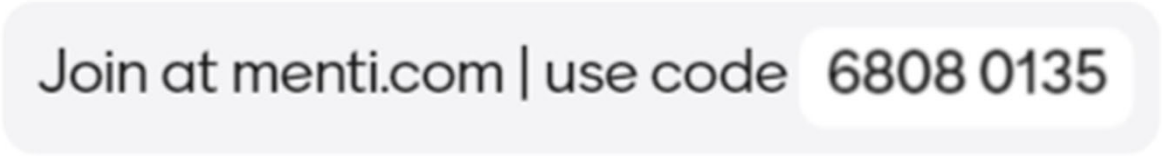
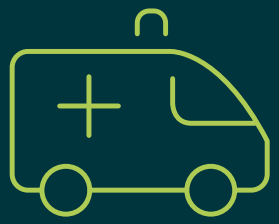
Live Polling

- **What factors are preventing us from moving toward zero deaths in Michigan?**



Michigan Report Card Summary 2022

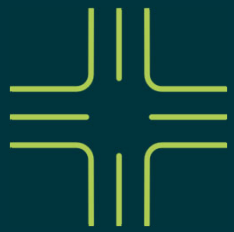


6,905
Reported Fatal +A injury crashes in the Michigan, averaging **18.9** per day

59% Total K/A injuries occurred during Daylight hours

59% Ped/Bike K/A injuries occurred during non-daylight hours

19%
Fatalities + A injuries involved alcohol



35%
Fatalities + A injuries occurred at intersections

56% of fatalities

57% of A injuries occurred on the Non-Trunkline system

8%
Pedestrian Crashes

1.5 Fatalities + A injuries per day

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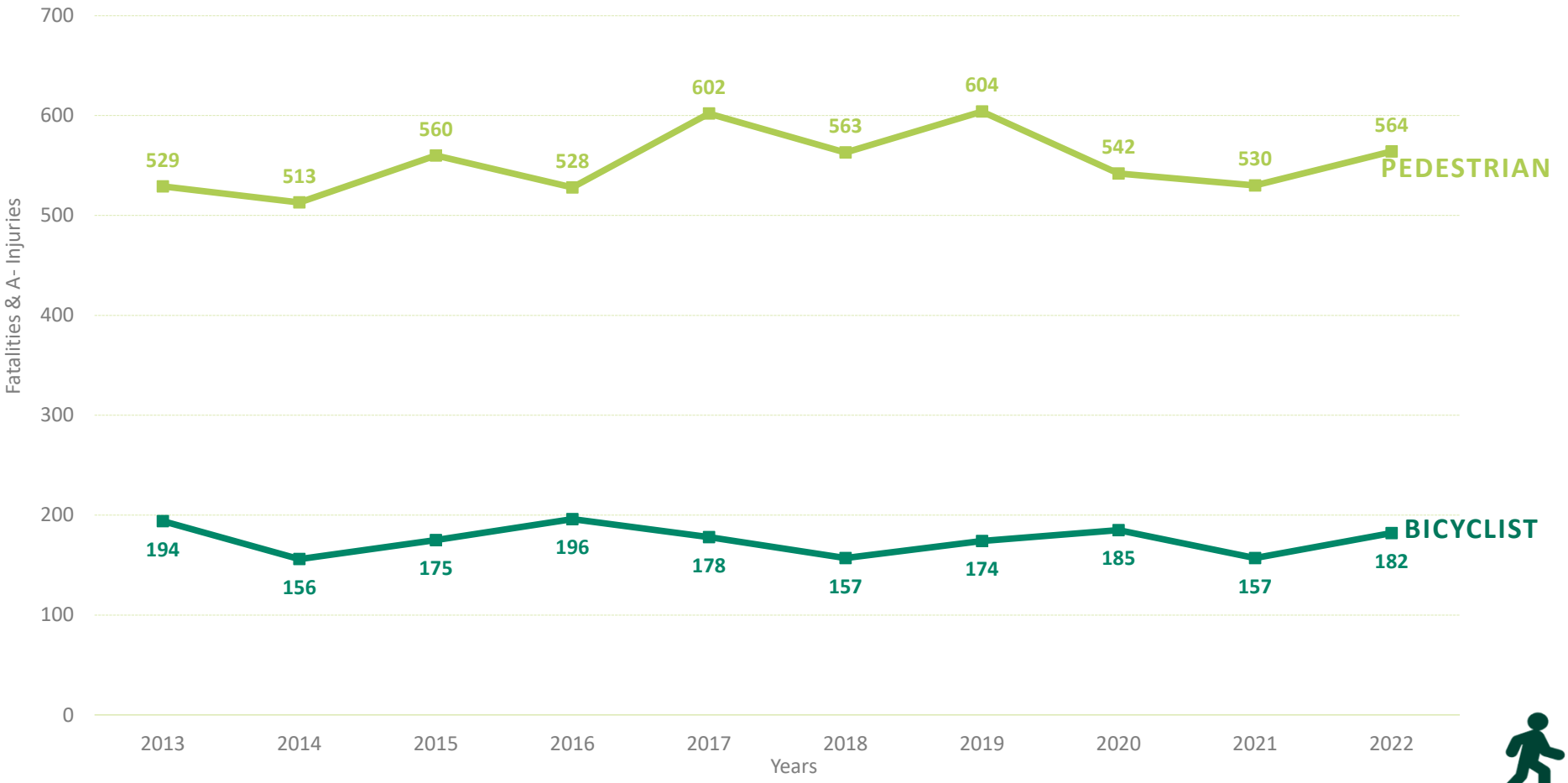
STATEWIDE PEDESTRIAN AND BICYCLIST FATALITIES AND A-INJURIES



Sources: Michigan Traffic Crash Facts

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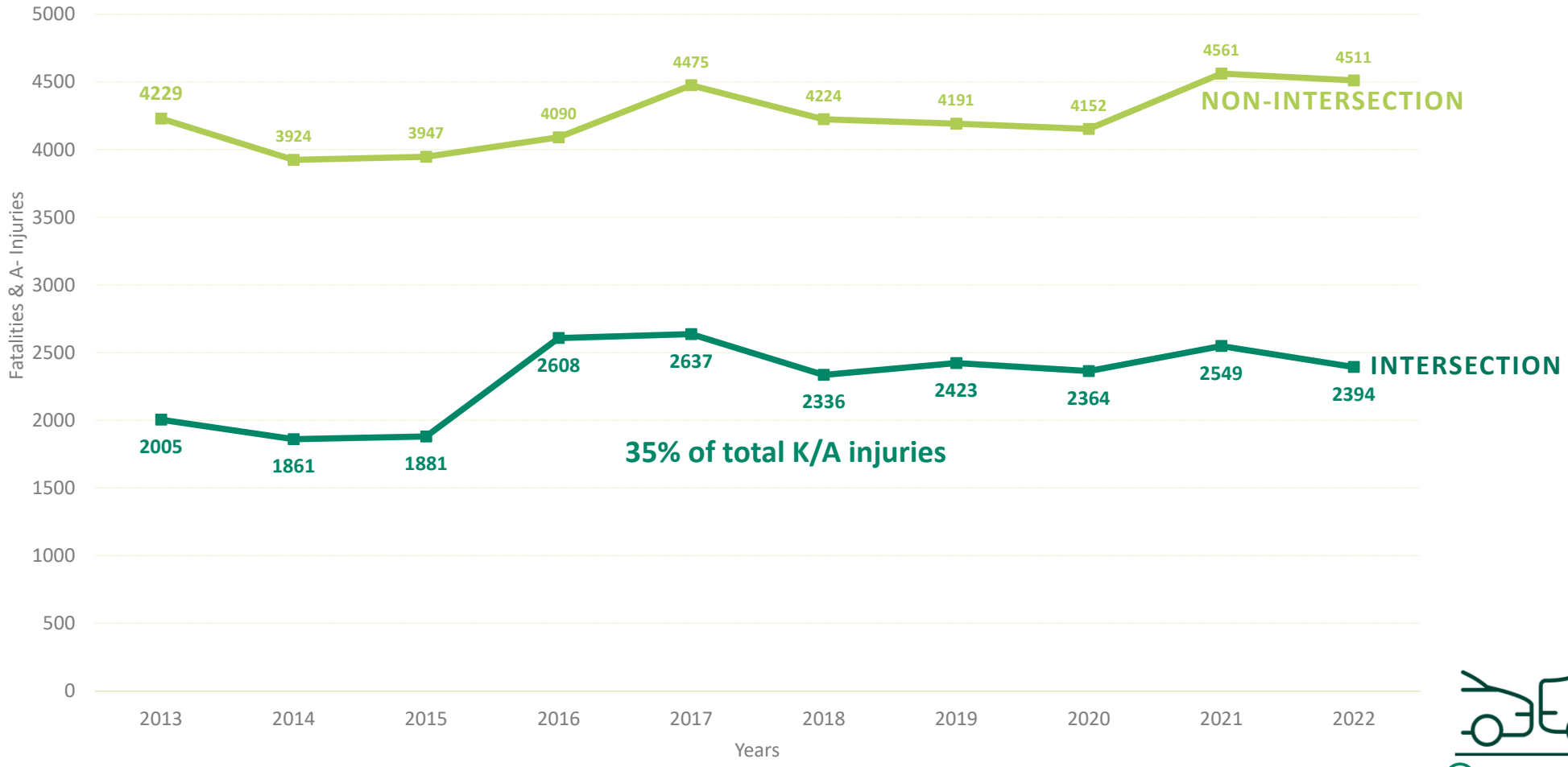
INTERSECTION VS. NON- INTERSECTION FATALITIES AND A-INJURIES



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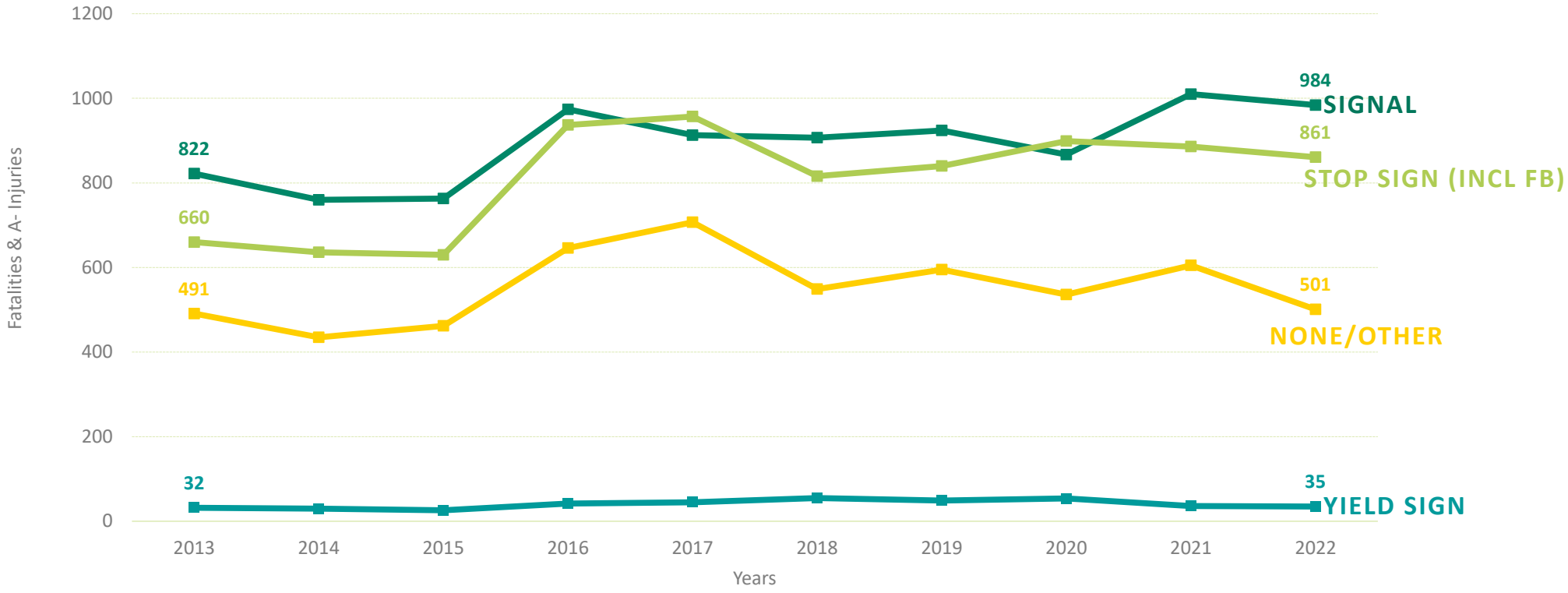
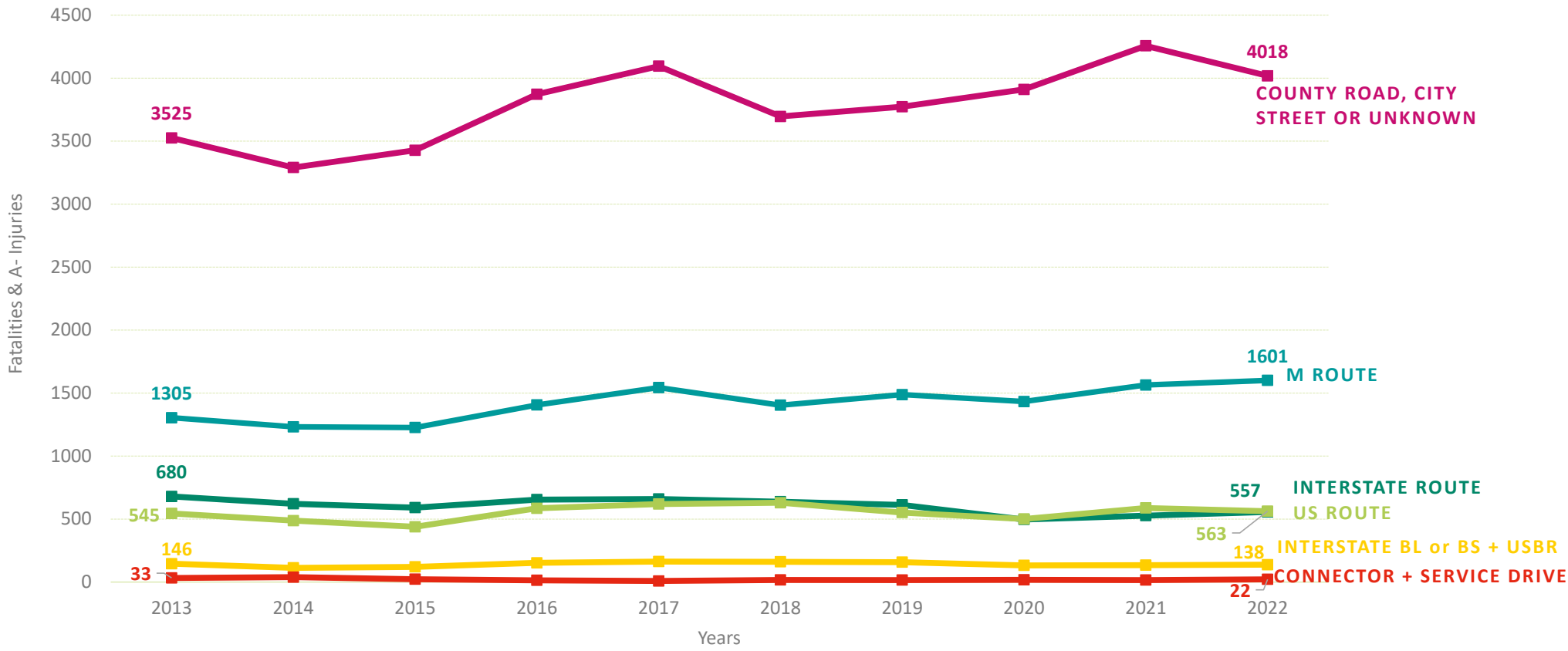
Sources: Michigan Traffic Crash Facts

INTERSECTION RELATED FATALITIES AND A-INJURIES - TRAFFIC CONROL



Sources: Michigan Traffic Crash Facts

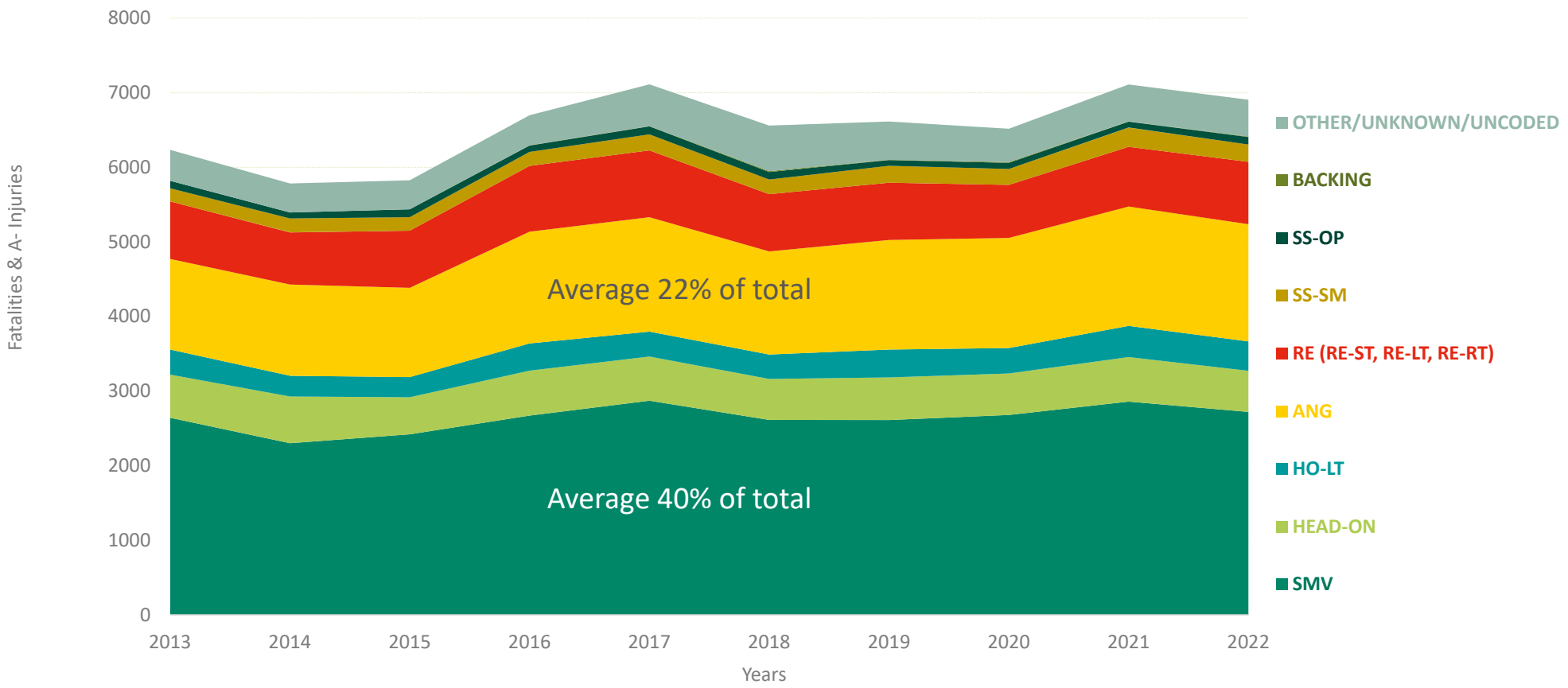
FATALITIES AND A-INJURIES BY ROUTE TYPE



Interstate BL (Business Loop), BS (Business Spur), USBR (US Business Route)

Sources: Michigan Traffic Crash Facts

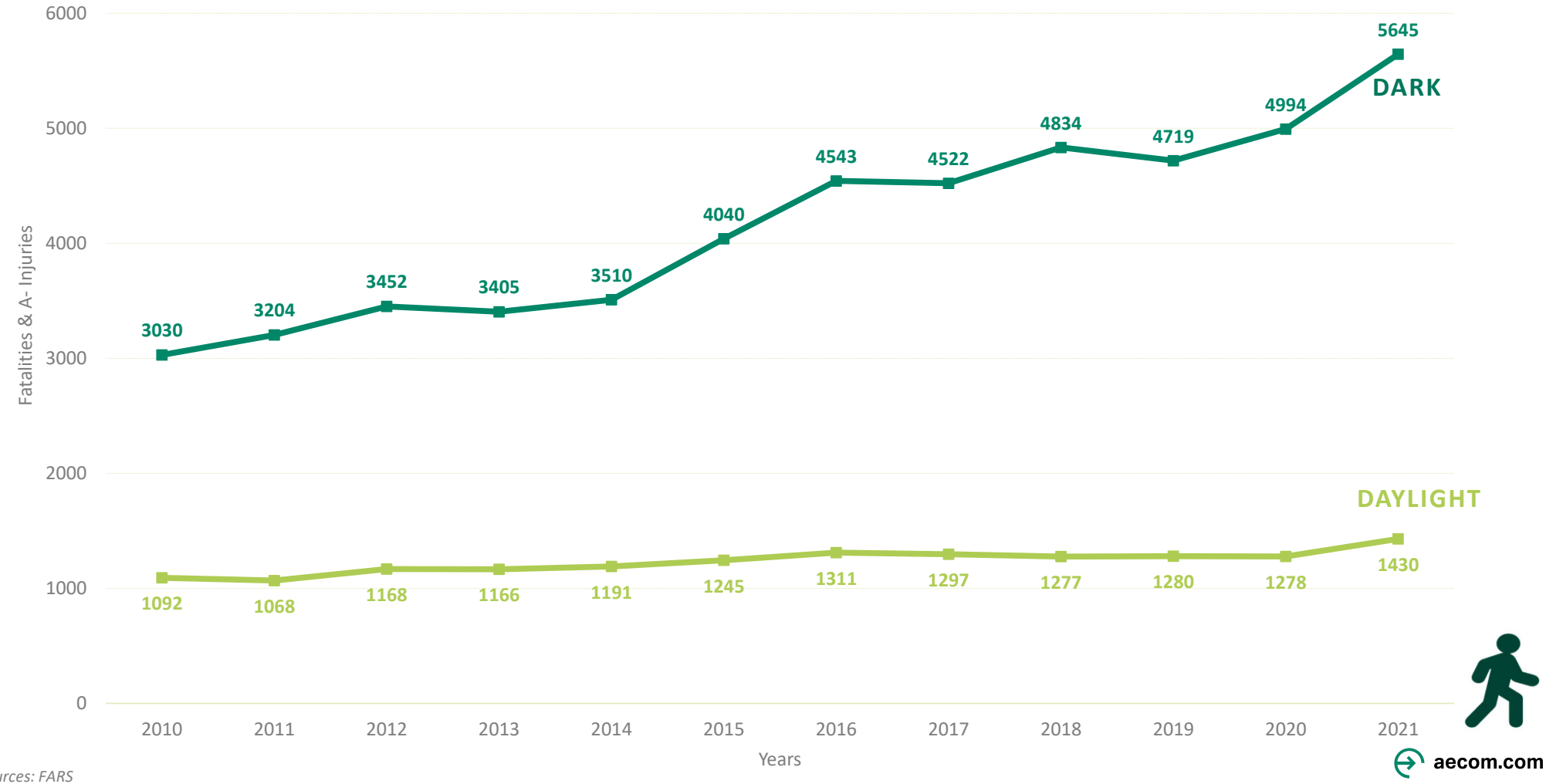
FATALITIES AND A-INJURIES BY CRASH TYPE



SPEED LIMITS AT THE CRASH SITES

Sources: Michigan Traffic Crash Facts

NATIONAL TREND – PEDESTRIAN FATALITIES BY LIGHT CONDITION



Sources: FARS

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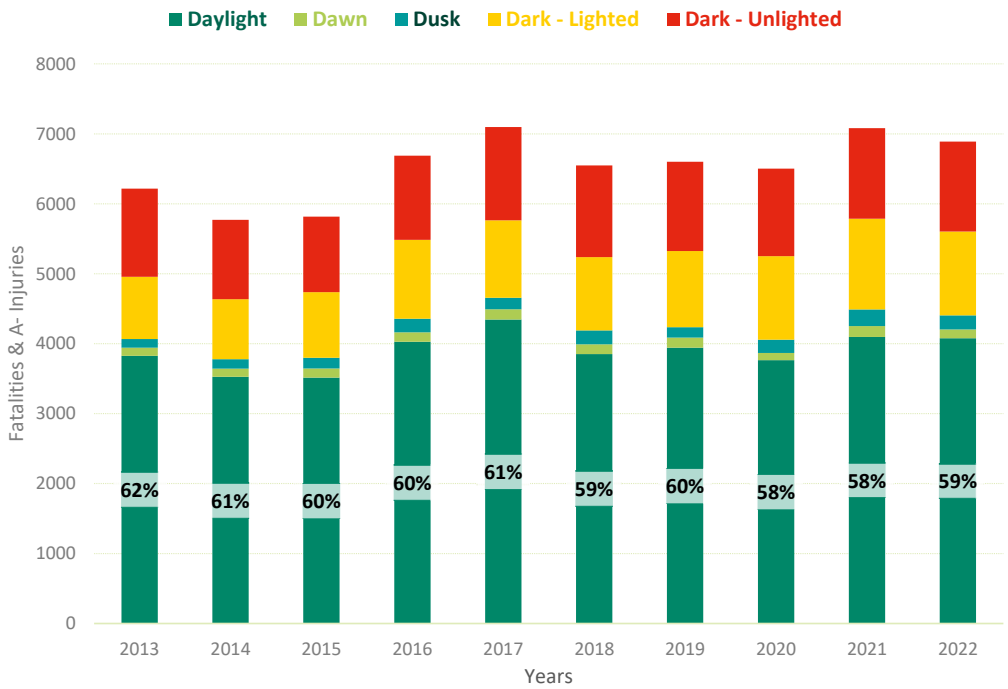
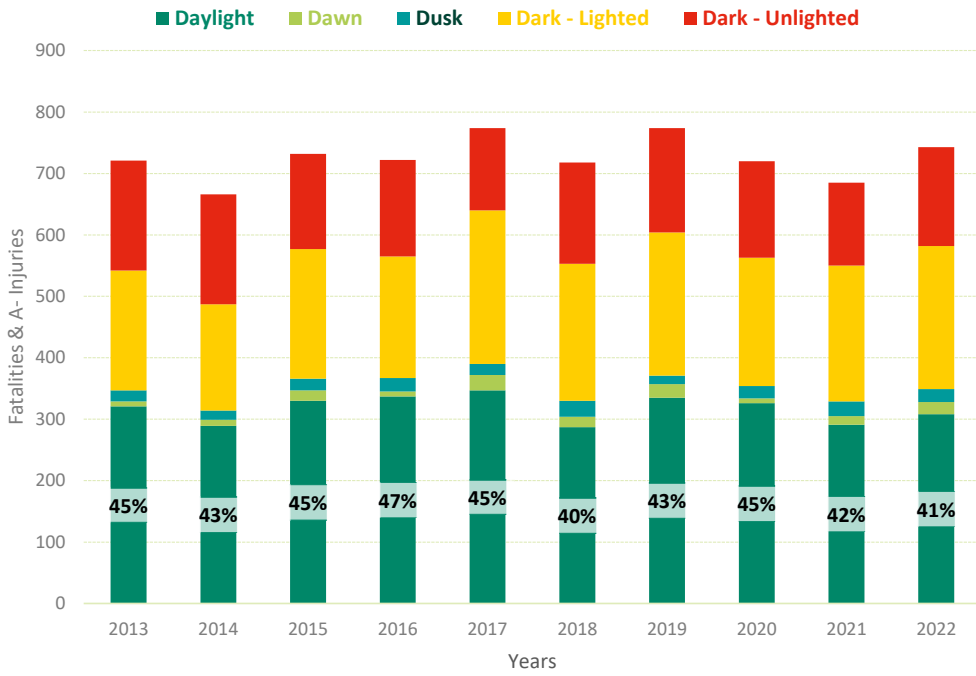
Lighting Related Crashes

LIGHTING CONDITIONS FOR TOTAL CRASHES



LIGHTING CONDITIONS FOR PEDESTRIAN AND BICYCLIST CRASHES

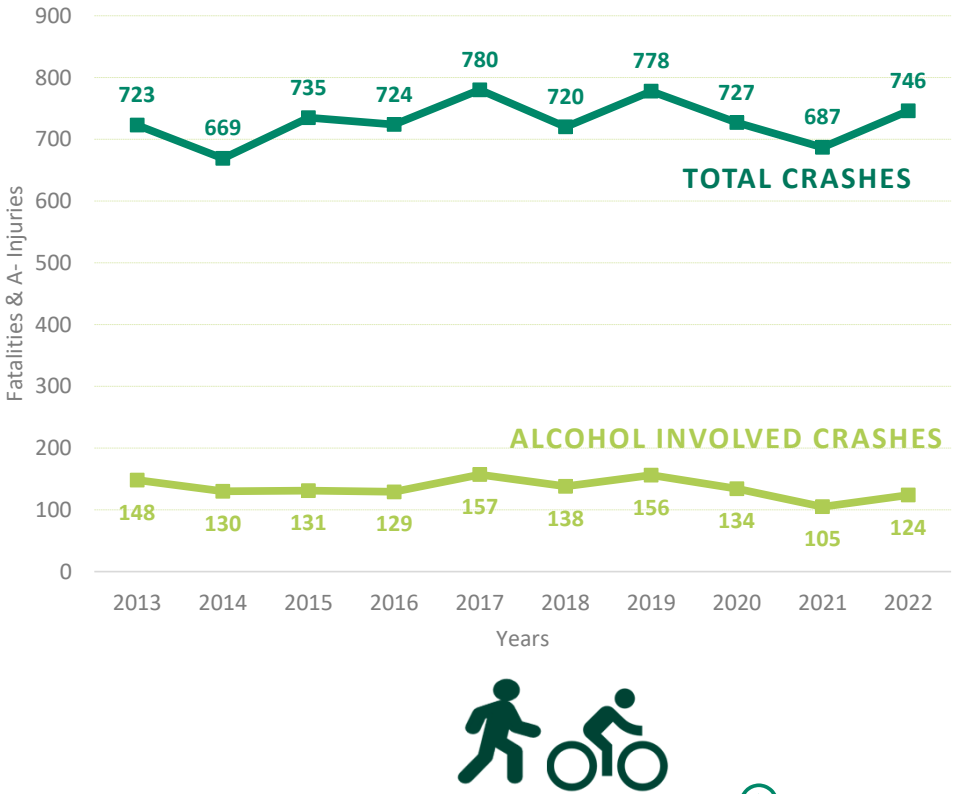


Sources: Michigan Traffic Crash Facts

Alcohol Involved Crashes

ALCOHOL INVOLVED TOTAL CRASHES

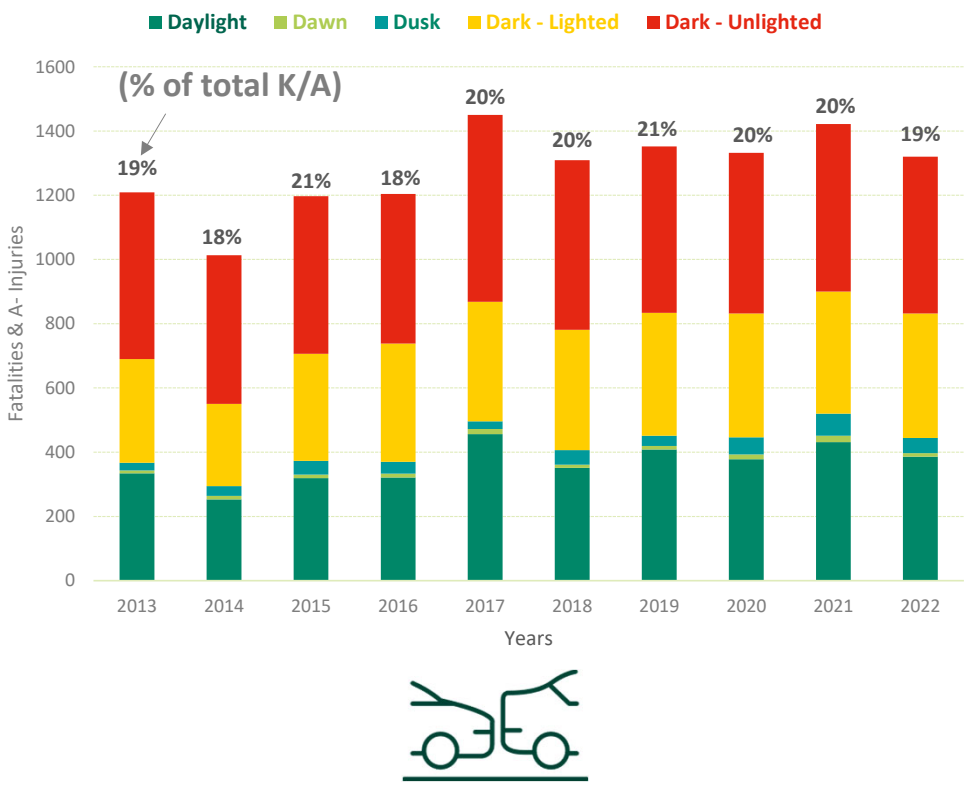
ALCOHOL INVOLVED PEDESTRIAN AND BICYCLIST CRASHES



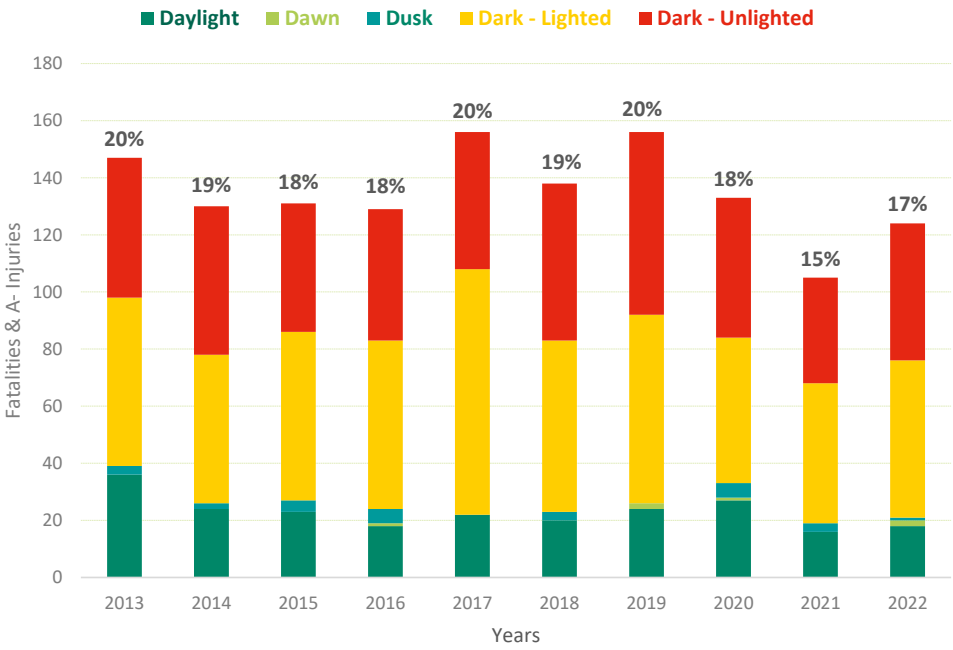
Sources: Michigan Traffic Crash Facts

Lighting Related Alcohol Involved Crashes

ALCOHOL INVOLVED LIGHTING CONDITIONS FOR TOTAL K/A CRASHES



ALCOHOL INVOLVED LIGHTING CONDITIONS FOR PEDESTRIAN AND BICYCLIST K/A CRASHES



Sources: Michigan Traffic Crash Facts

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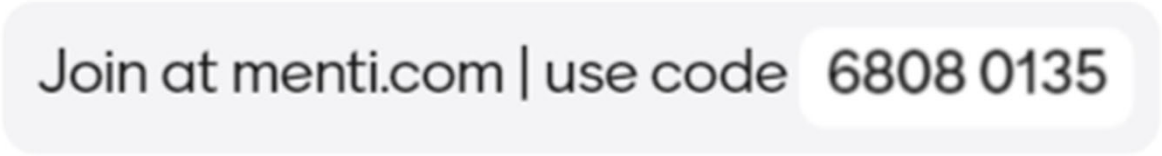
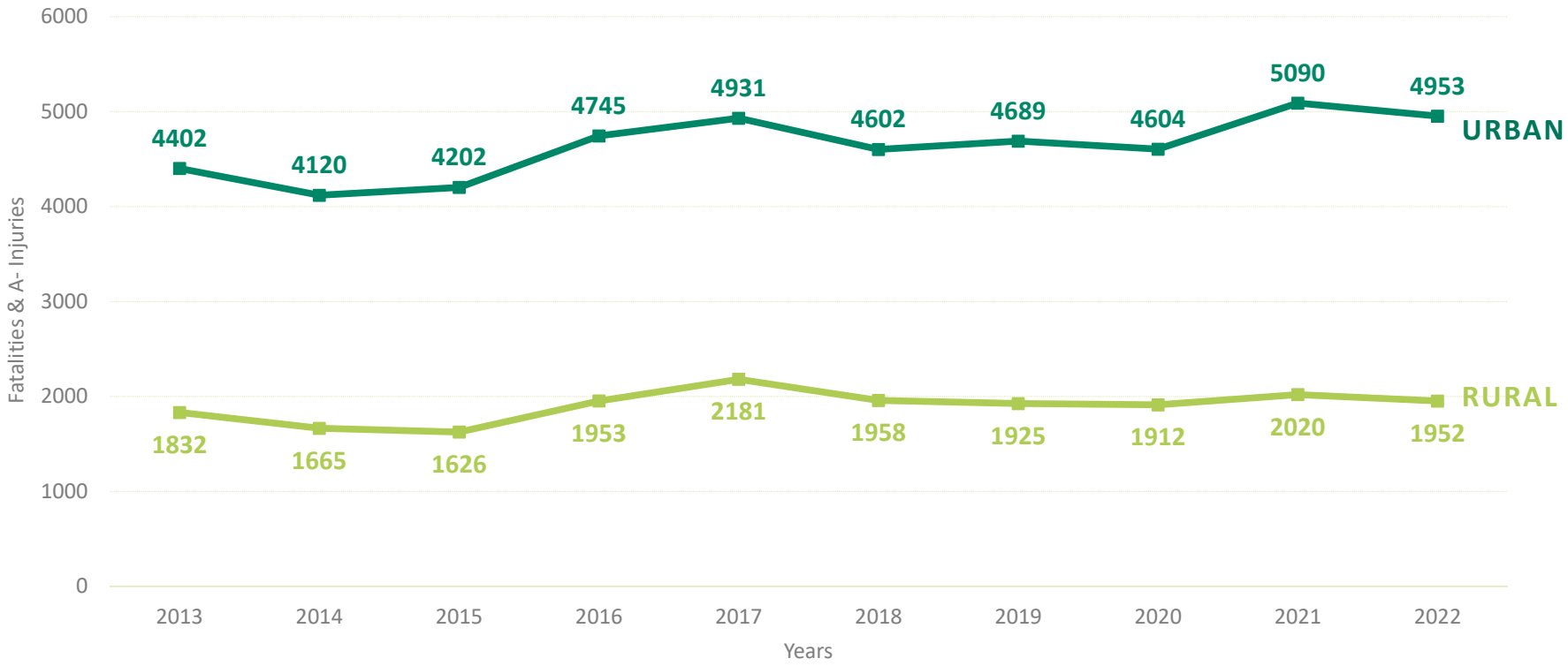
Live Polling

- **Where are fatalities and injuries increasing?**
- **Which parts of the State have the highest injury and fatality rate?**

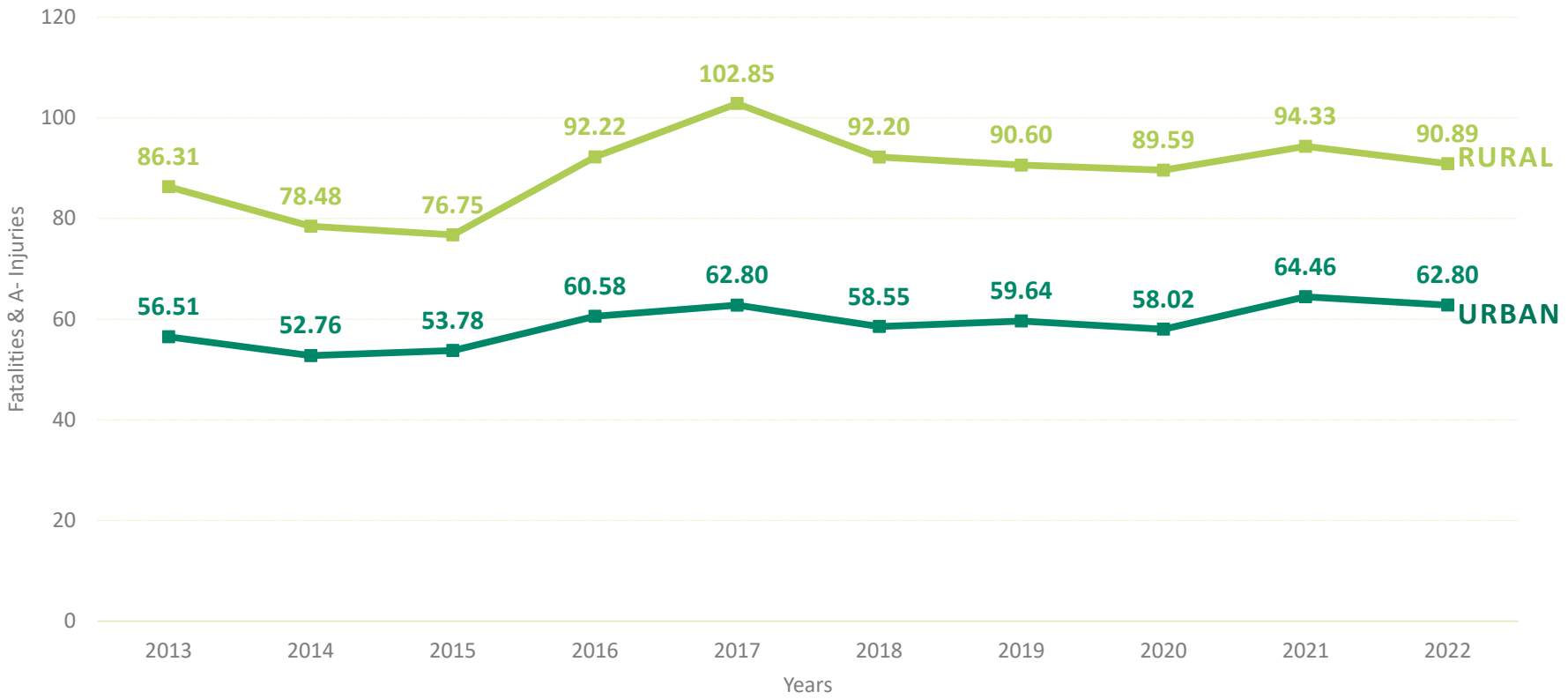


URBAN AND RURAL TRENDS IN MICHIGAN



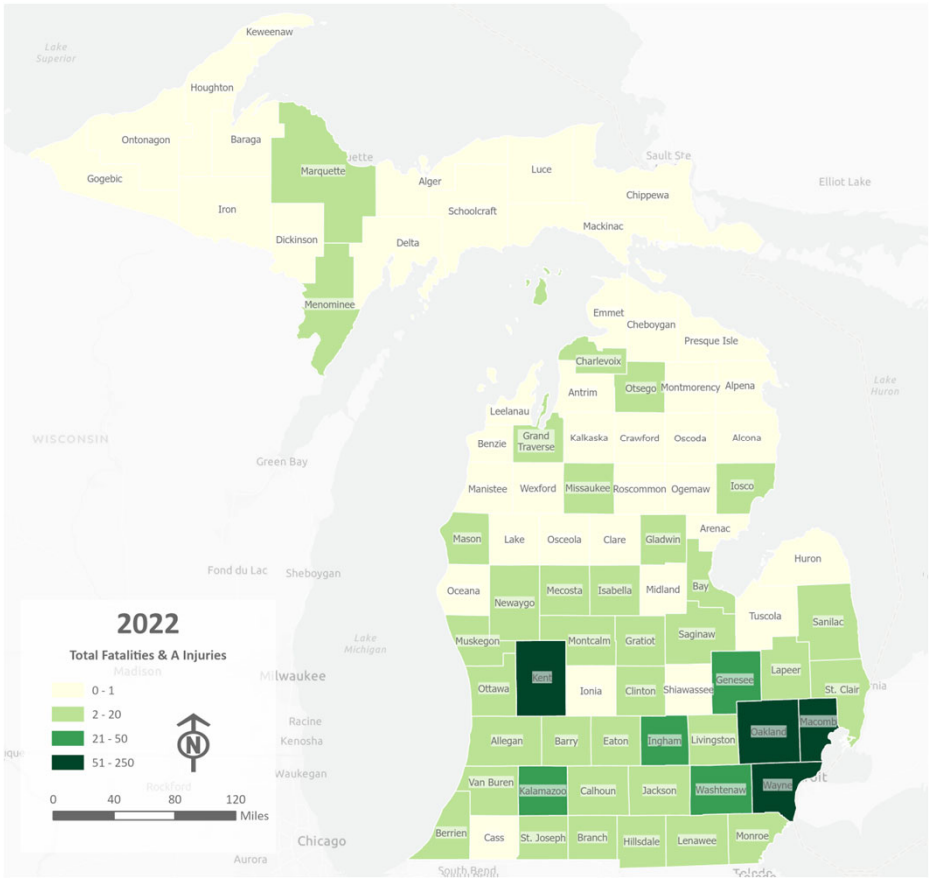
Sources: Michigan Traffic Crash Facts

URBAN AND RURAL TRENDS IN MICHIGAN PER 100K PEOPLE

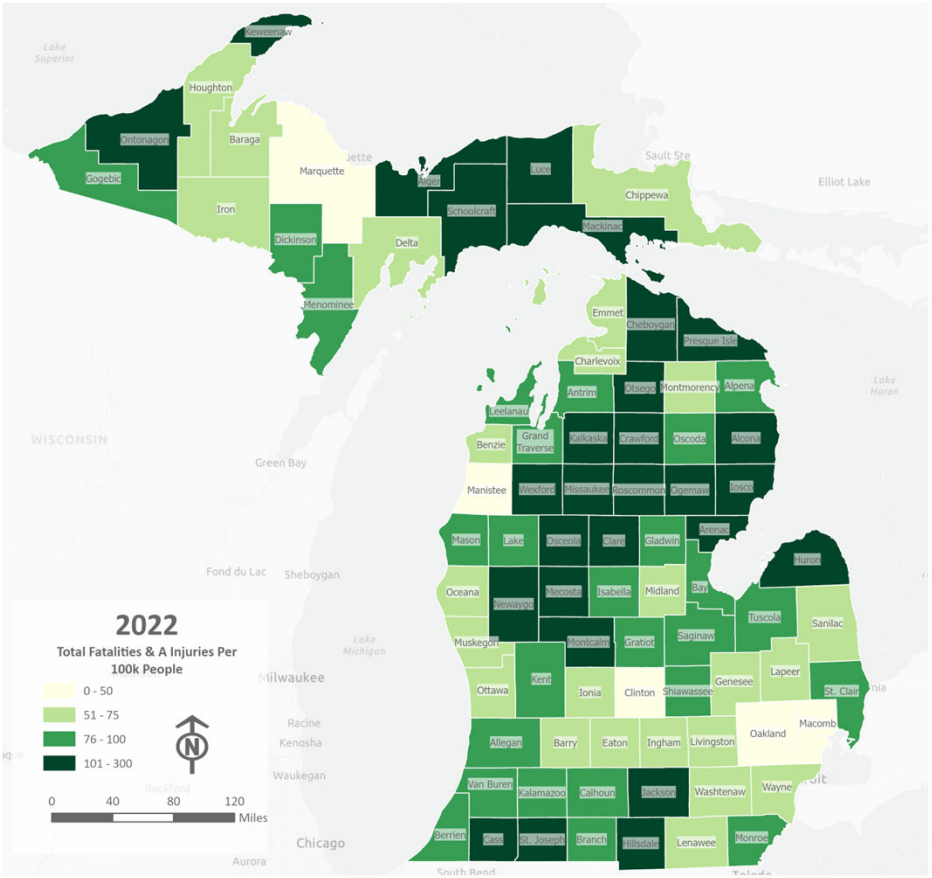


Sources: Michigan Traffic Crash Facts

Fatalities and Serious Injuries By County

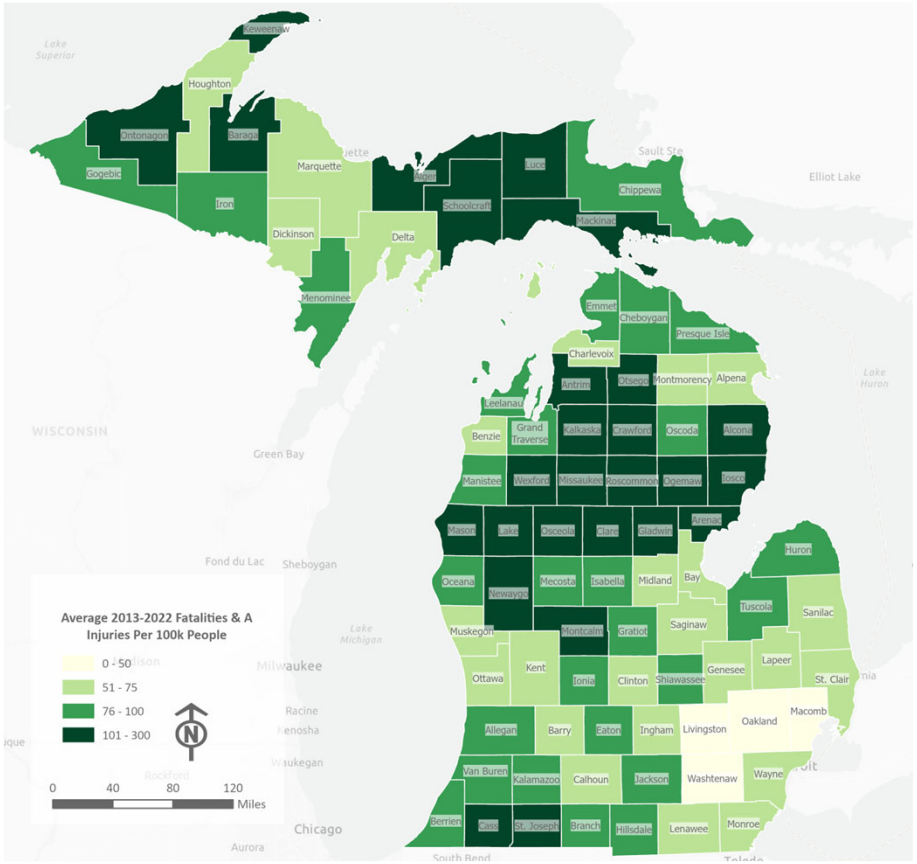


Total Fatalities and Severe Injuries

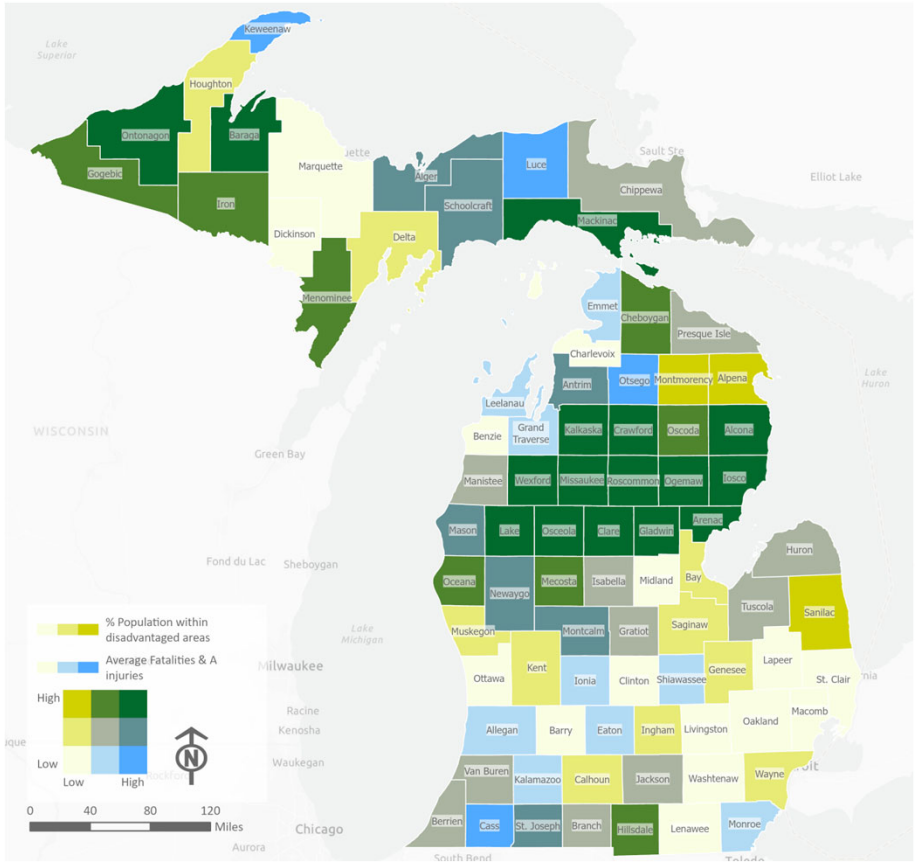


Fatalities and Severe Injuries per 100k

Average Fatalities and Serious Injuries By County (2013-2022)

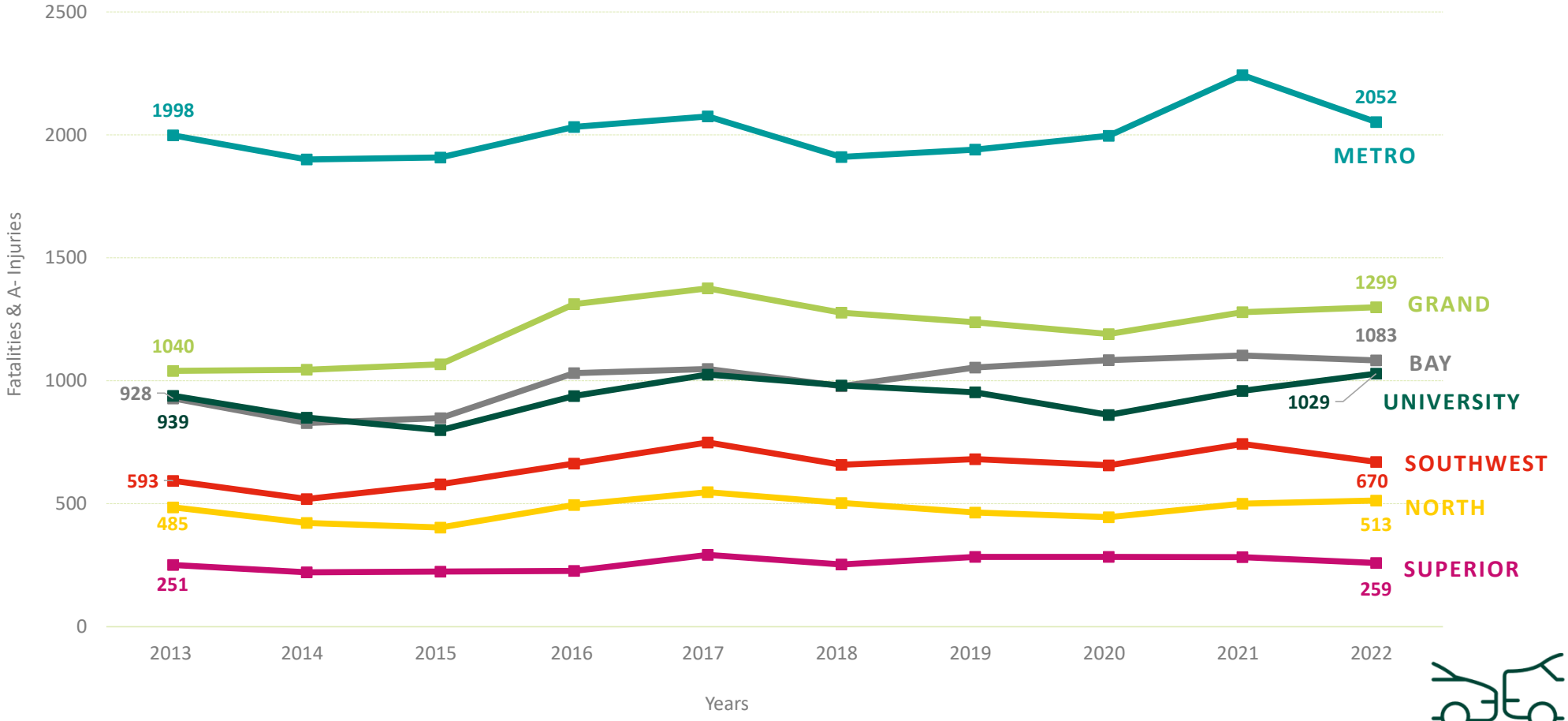


Fatalities and Severe Injuries per 100k



Equity Lens - % of Population within Disadvantaged Tracts

FATALITIES AND A-INJURIES BY MDOT REGION



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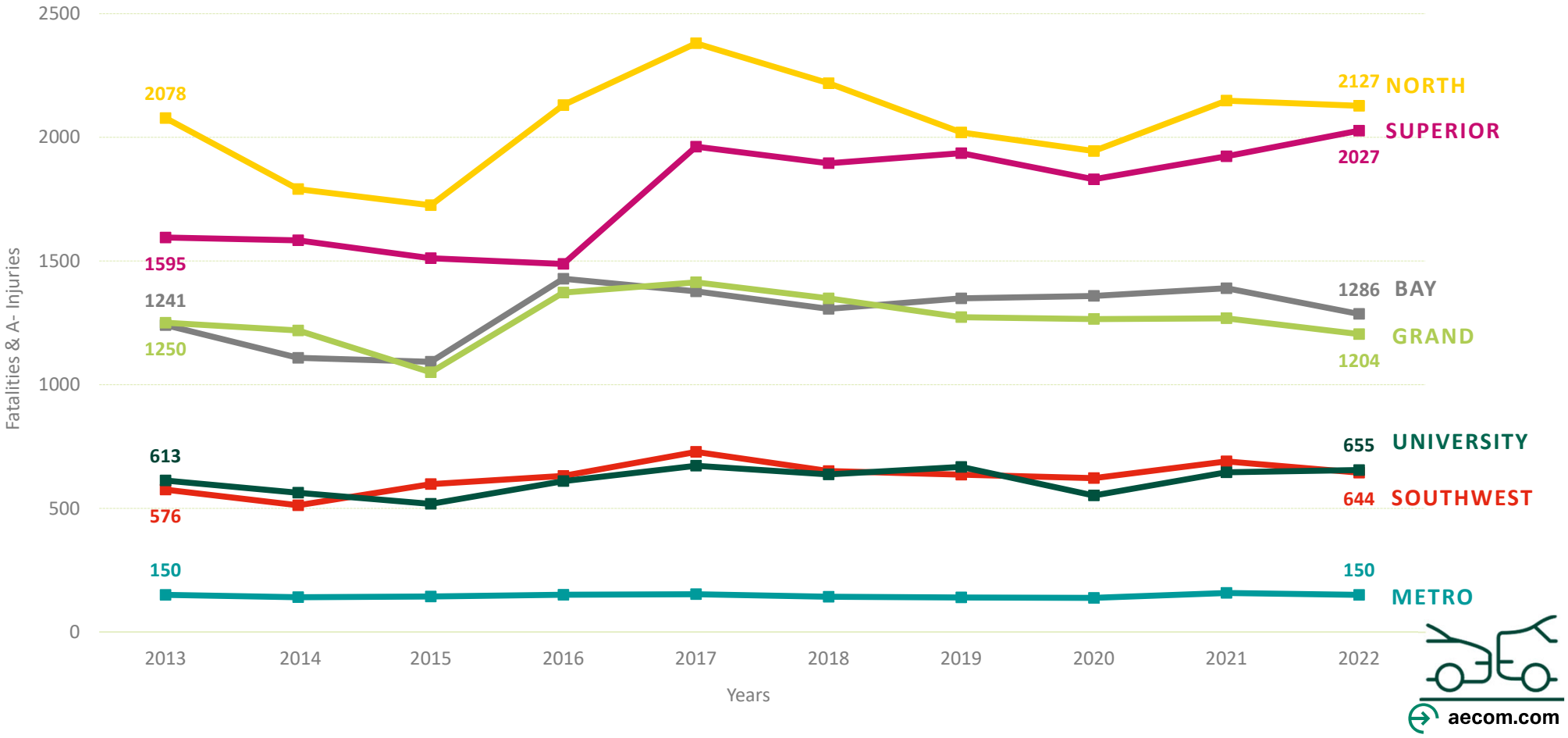
FATALITIES AND A-INJURIES PER 100K PEOPLE BY MDOT REGION



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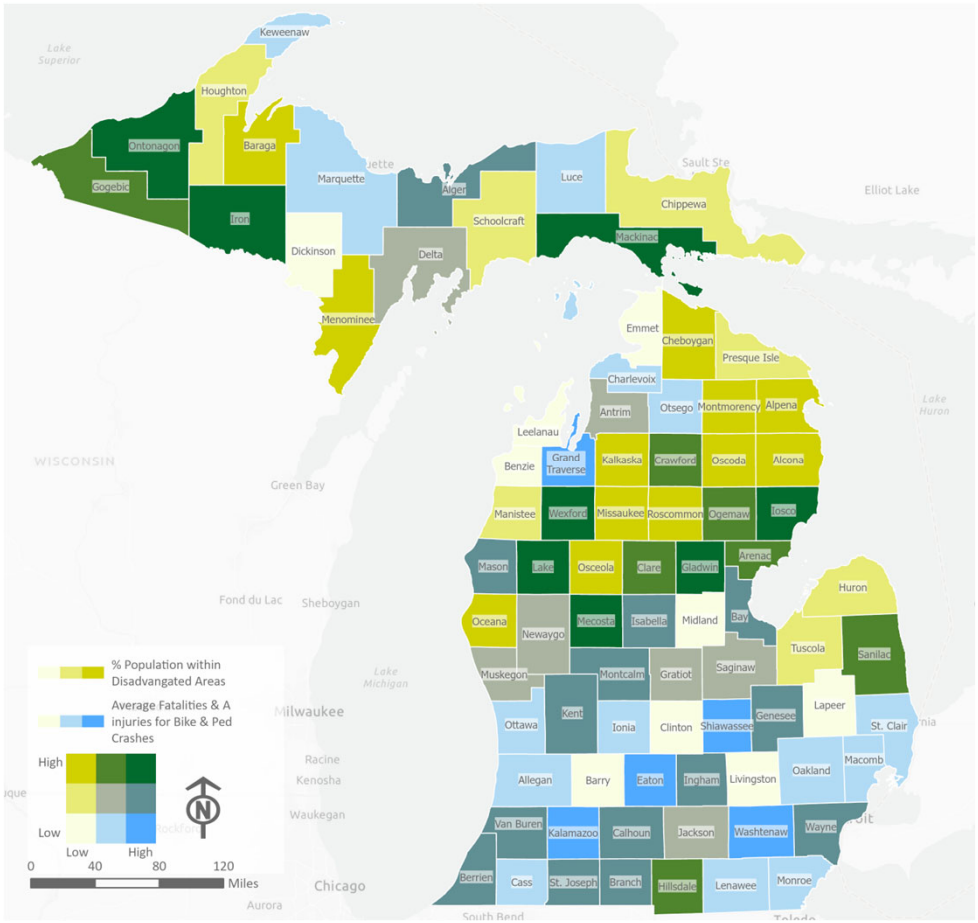
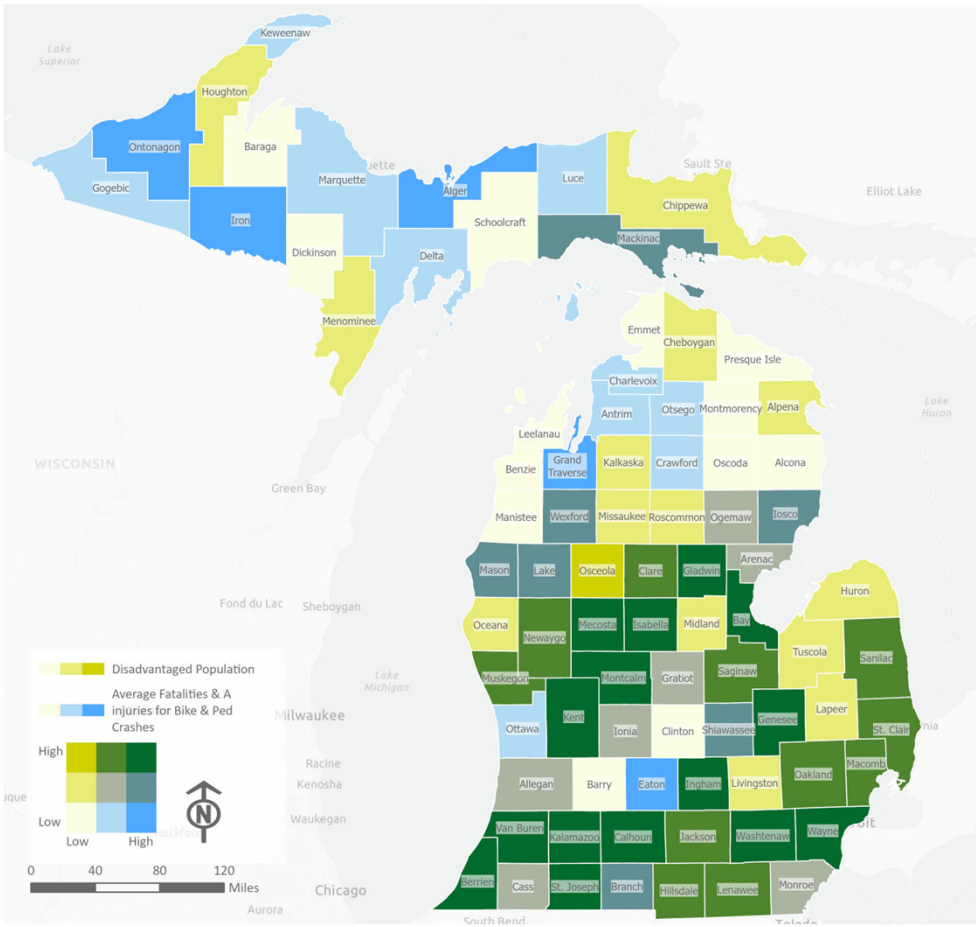
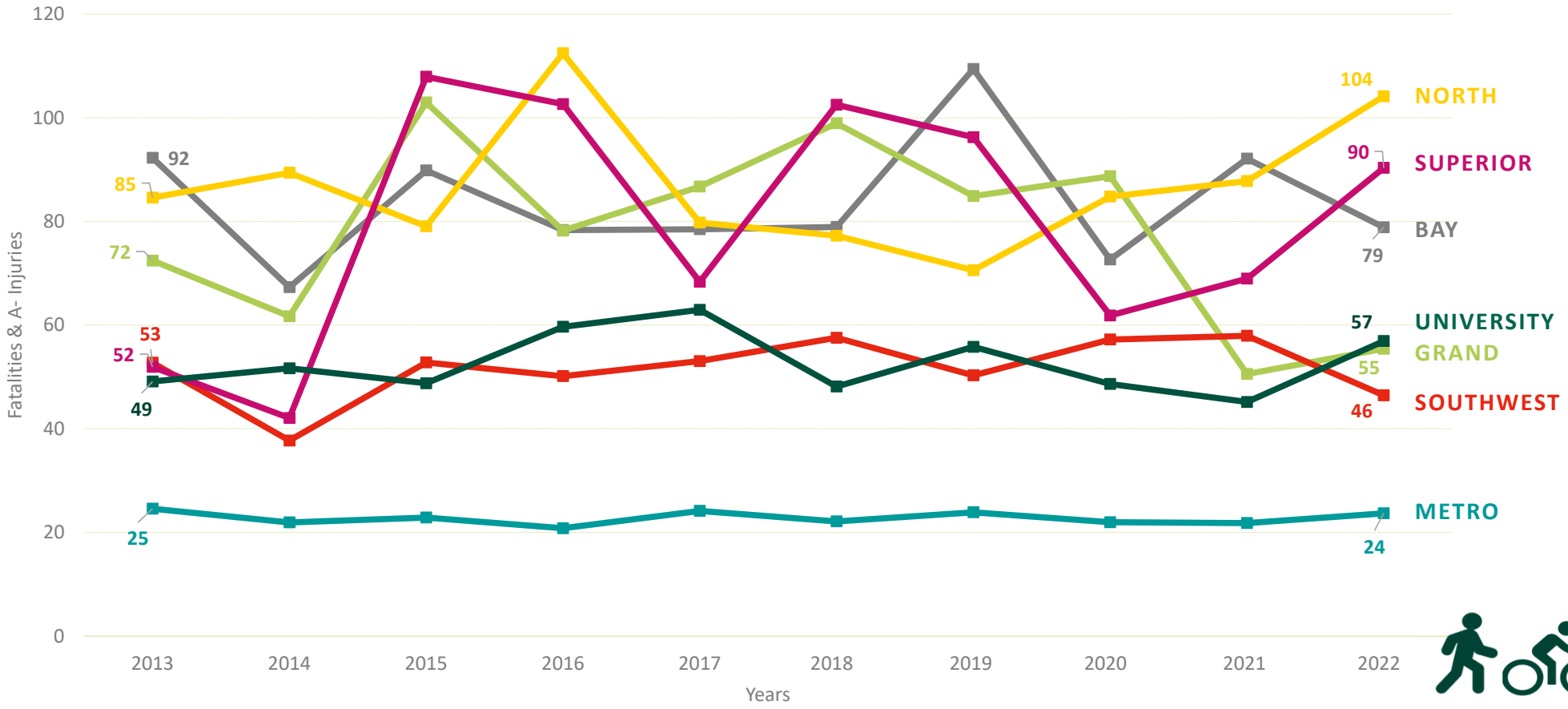
Avg. Fatalities and Serious Injuries (Bicyclist & Pedestrian) by Disadvantaged Population





PEDESTRIAN/BICYCLIST FATALITIES AND SERIOUS INJURIES PER 100K PEOPLE BY MDOT REGION



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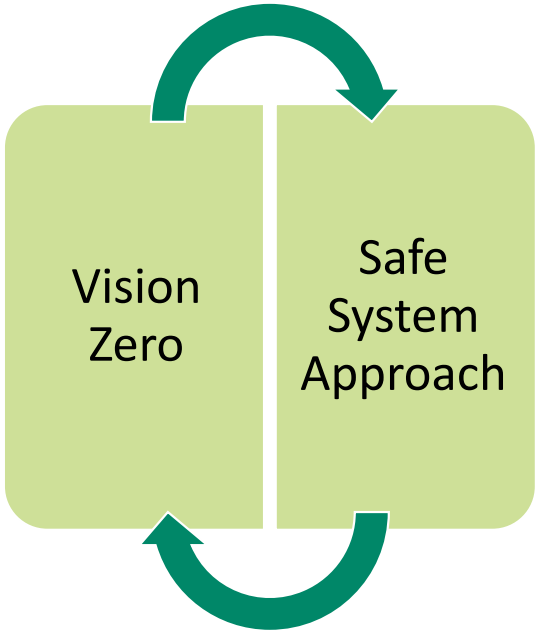
2

Implementing the Safe System Approach

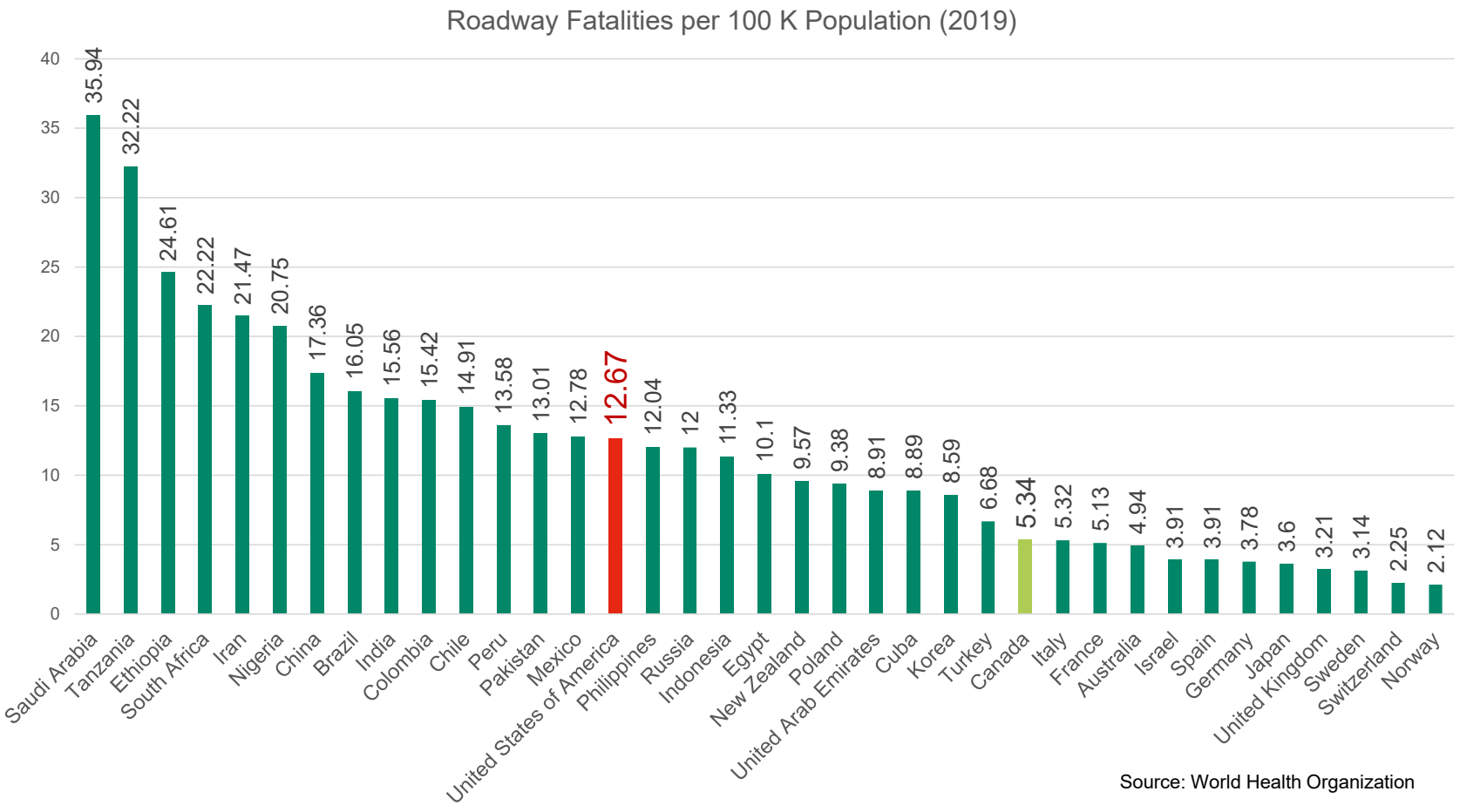
Vision Zero → Safe System Approach



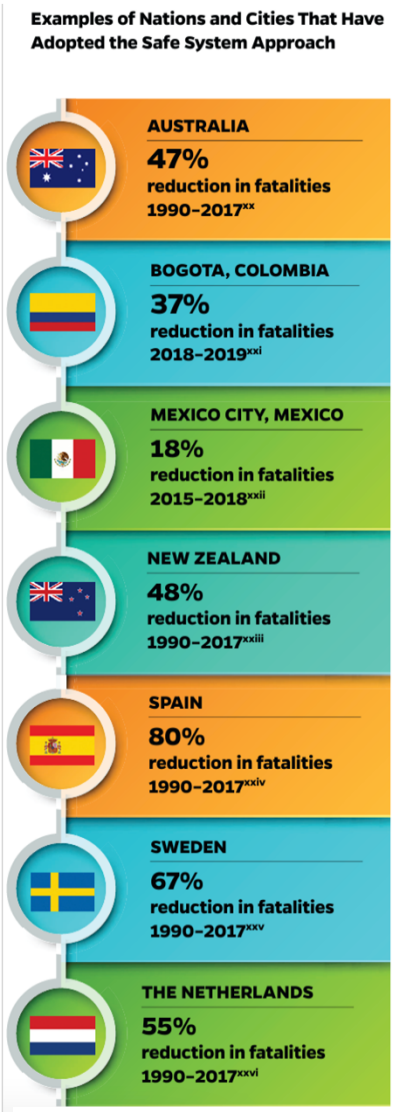
Traditional Approach (Reactive)	Safe System Approach (Proactive)
Prevent Crashes	Prevent Deaths & Serious Injury
Improve Human Behavior	Design for Human Mistakes/Limitations
Control Speeding	Reduce System Kinetic Energy
Individuals Are Responsible	Shared Responsibility
React Based on Crash History	Proactively Identify & Address Risks

Source: USDOT FHWA-SA-20-015

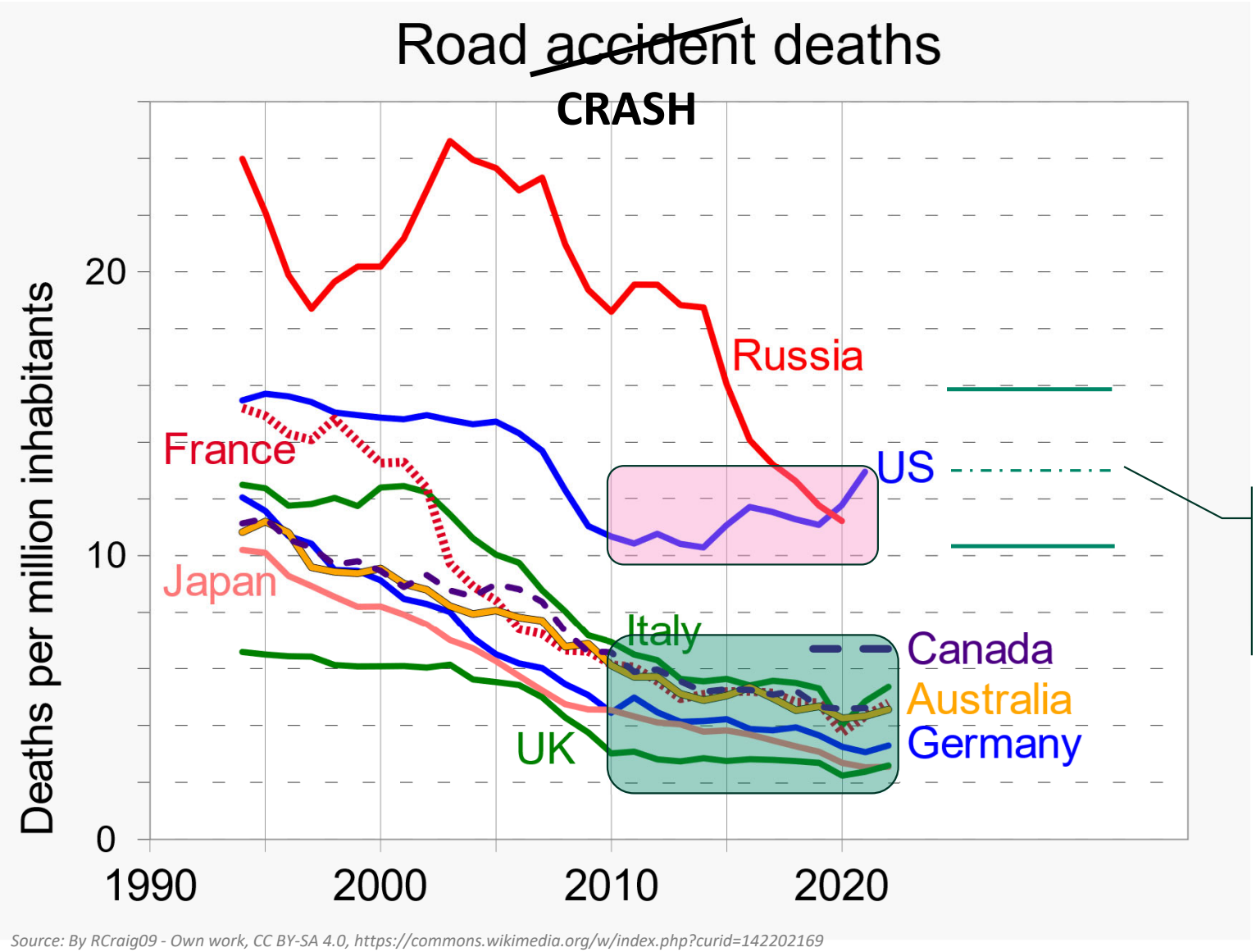
The United States ranked 74th out 183 countries in 2019 in roadway fatality rate per capita.



Source: World Health Organization



Source: Recommendations of the Safe System Consortium



- Since 2010 the countries shown have leveled off and maintained their lower rate
- US has increased

Lost ~ ½ of the reductions seen between 1995 and 2010

Source: By RCraig09 - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=142202169

Safe System Approach - Implementation

- *When the 85th-percentile speed is appreciably greater than the posted speed limit, and the roadway context does not support setting a higher speed limit, the engineering study should consider whether changes to geometric features, enforcement, and/or other speed-reduction countermeasures might improve compliance with the posted speed limit. A similar approach should be used if the results of past speed studies indicate that the 85th-percentile speed has consistently increased. On urban and suburban arterials, and on rural arterials that serve as main streets through developed areas of communities, the 85th-percentile speed should not be used to set speed limits without consideration of all factors described in Paragraph 7 of this Section. – 11th Edition MUTCD*

Source: USDOT FHWA Safe System Roadway Design Hierarchy, January 2024

Safe System Approach - Implementation

Safer People –

- SEMCOG's Walk.Bike.Drive Safe program
- Grand Rapids' Driving Change campaign
- Workforce Policies regarding drowsy/distracted driving
- Driver's education courses

Safer Vehicles –

- Fleet management
- Appropriately sized (and weight) vehicles for the type of work
- Enhanced safety features on company vehicles

Post-Crash Care –

- Accommodating emergency response vehicles in work zones
- Advance and continual communication regarding road closures
- Traffic incident management training and sign trailers

Source: USDOT FHWA Safe System Roadway Design Hierarchy, January 2024

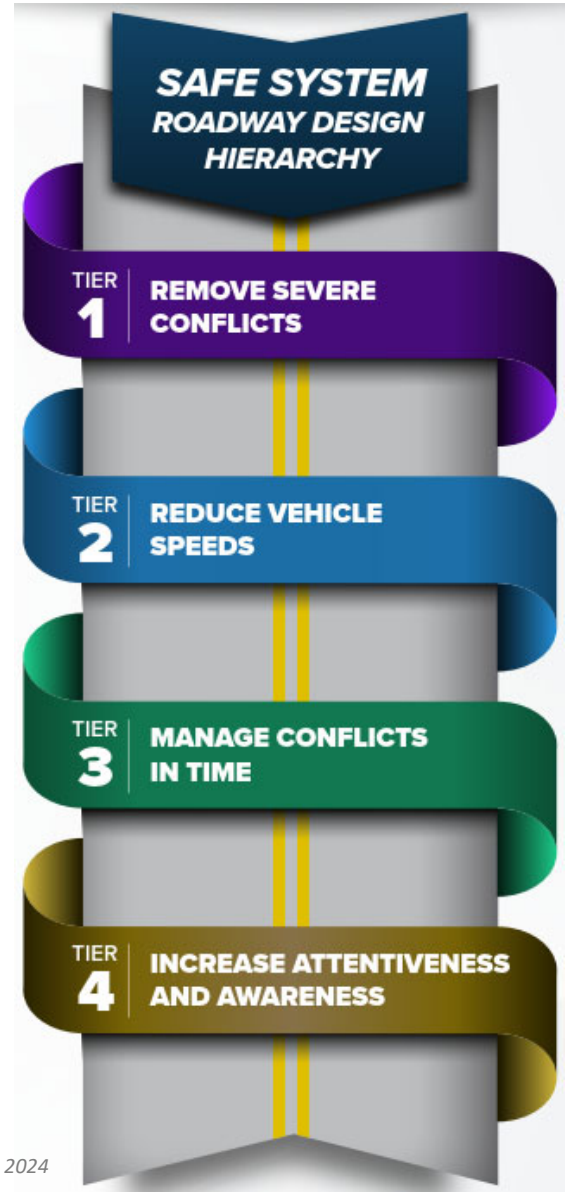
Safe System Approach - Implementation

Tier 1:
- Separating users in space
- Physical barriers between modes
- Removing Fixed Objects

Tier 2:
- Reduce kinetic energy transfer

Tier 3:
- Separating users in time
- Signals, Protected left turn phasing, LPIs

Tier 4:
- Rumble strips
- Wet reflective pavement markings



Source: USDOT FHWA Safe System Roadway Design Hierarchy, January 2024

3

SEMCOG Deep Dive

SEMCOG Deep Dive

4

Roundabouts

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Roundabouts as a Mechanism to Advance the FHWA Safe Systems Approach in Michigan

Transportation Bonanza 15
February 15, 2024

Peter T. Savolainen, Ph.D., P.E., F.ITE (he/him/his)
Chair of ITE Education Council
MSU Foundation Professor and Interim Chair
Department of Civil and Environmental Engineering
Michigan State University
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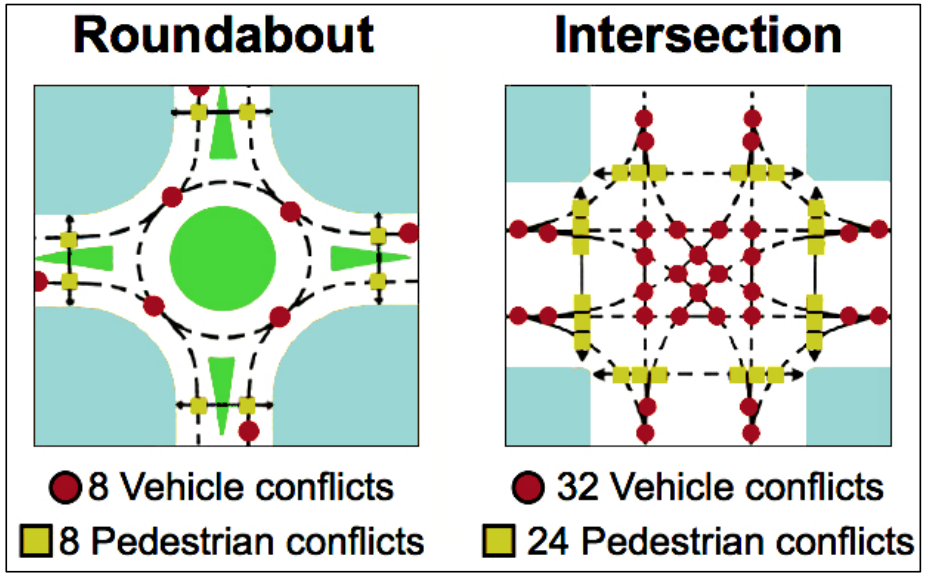
Overview

- Introduction & Study Details
- Field Observational Studies
- Safety Analyses
- Conclusions
- Ongoing/Follow-up Work

Introduction

- Roundabouts generally improve both safety and operational performance under various contexts.
  - Reduction in conflict points
  - Reduction in vehicle speeds
  - Changes in trajectories



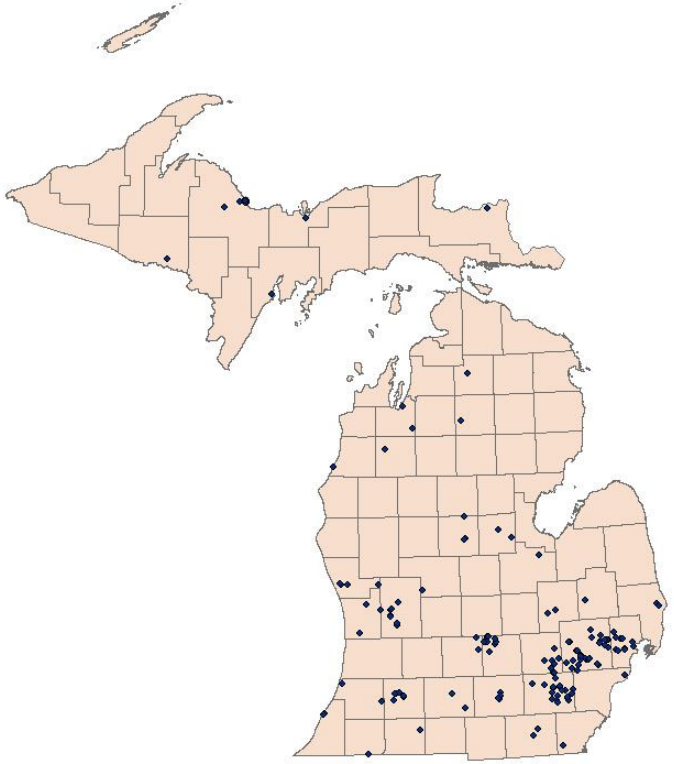
Evaluating the Performance and Safety Effectiveness of Roundabouts – An Update

- MDOT sponsored a study, completed in 2011, which focused on examining roundabout performance. MSU was contracted for a follow-up study that was completed in June 2023, which examined roundabout performance.
  - Safety
  - Operations
  - Environmental Impacts
  - Cost-Effectiveness

Michigan Roundabout Locations

- A database of 180 roundabouts developed in consultation with WSP.

- General characteristics were obtained for each location
  - Number of approach legs
  - Number of circulating lanes
  - Traffic volume



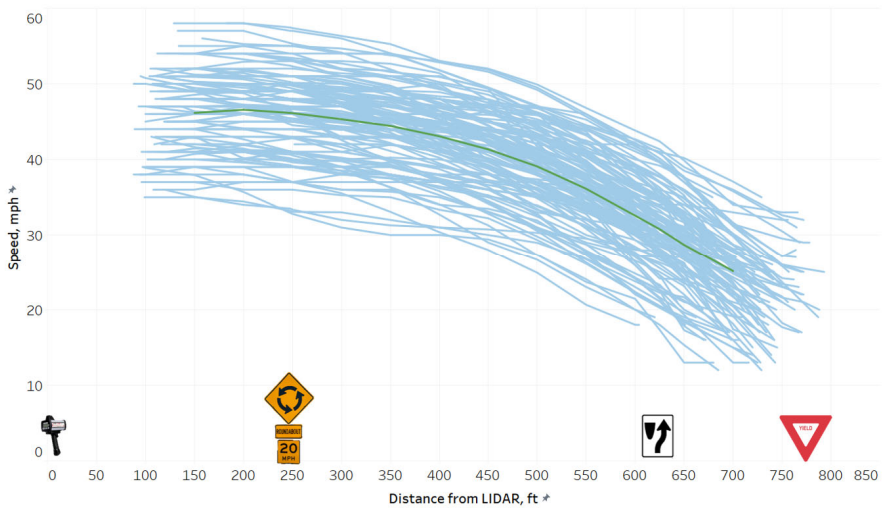
Field Observational Studies

- More detailed data were collected through field studies at 18 roundabouts throughout Michigan.
  - Speed selection
  - Gap acceptance
  - Driver yielding to other vehicles
  - Driver yielding to pedestrians

Speed Selection Behavior

- Investigated how speed varies as drivers approach roundabout
- Data analyzed at 3 locations
  - 500 ft upstream of yield line
  - 200 ft upstream of yield line
  - At yield line

- Speeds tended to be higher where the speed limit was higher, particularly at interchanges, in rural areas, and at larger roundabouts.

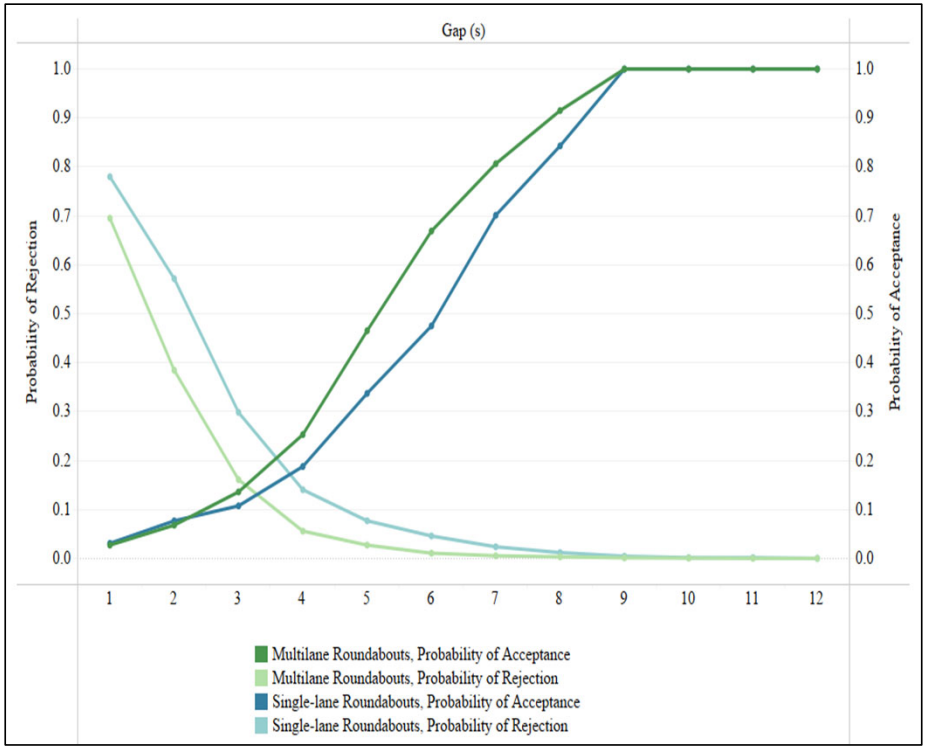


Sample Speed Profiles on Roundabout Entry Approach

Gap Acceptance Behavior

Roundabout Category	Critical Gap (s)
Single lane	3.9
Multilane	3.1
Three-legged	2.8
Four-legged	3.0
Rural context	3.1
Urban context	3.5
Roundabout at ramp terminal	3.5
Roundabout at surface road	3.2

(Critical gap is minimum gap drivers are willing to accept)



Yielding Behavior Towards Vehicles

Site	Sample Size	Yielded
NB I-75 at Monroe M-46	77	100%
NB I-75 at M-81	168	100%
US-23 at Lee Road	177	100%
WB I-94 at Sprinkle Road	100	100%
Geddes at Earhart Road	129	99.20%
M-53 at 26 Mile Road	156	98.10%
SB I-75 at M-81	204	98.00%
M-5 at Pontiac Trail	190	97.40%
Drake at Maple Road	98	95.90%
EB I-94 at Sprinkle Road	191	95.80%
SB I-75 at Monroe M-46	36	94.40%
NB I-75 at Bristol Road	159	94.30%
US-127 BR at Mission Road	24	91.70%
US-10 BR/M-20 at Patrick Road	53	90.60%
Farmington at Maple Road	200	89.00%
M-52 at Werkner Road	87	87.40%
US-23 at Geddes Road	199	82.40%
US-10 at M-30	129	80.60%

- General trends:
  - Higher yielding at sites with larger numbers of lanes
    - One lane – 92.4%
    - Two lanes – 95.6%
    - Three lanes – 97.4%
  - Lower yielding at roundabouts with larger diameters
  - Higher yielding from minor (vs major) road and lower speed approach
  - Higher yielding if roundabout warning sign is present

Yielding Behavior Towards Pedestrians

Site	Sample Size	Yielded
US-23 at Geddes Road*	58	44.8%
Farmington at Maple Road	93	89.2%
Drake at Maple Road	81	90.1%
Geddes at Earhart Road	81	86.4%
M-53 at 26 Mile Road*	37	43.2%

*Exit ramp

- General Trends
  - Lower yielding to pedestrians at exit ramps
  - Marginally higher yielding if pedestrian hybrid beacon was present
  - Heavy vehicles less likely to yield to pedestrians
  - In case of multiple approach lanes, drivers in near lane more likely to yield

Safety Analyses

Narrative	Diagram
Unit 2 entered the roundabout from N/B Van Dyke Ave and traveled to the N/B Van Dyke Ave exit. Unit 1 entered the roundabout from S/B M53 Exit Ramp and intended on continuing to W/B 18.5 Mile Rd. As unit 2 was exiting the roundabout unit 1 entered and collided into unit 2. Driver of unit 1 stated that she thought because unit 2 occupied the inside lane that it had to continue in the roundabout. Driver of unit 1 was issued a citation for failure to yield causing accident.	

Safety Analyses

- Site Selection
  - 180 roundabouts identified in Michigan
  - 157 companion control sites identified manually
    - In immediate vicinity of roundabout site
    - Same type of traffic control
    - Similar AADT
    - Similar geometry (e.g., number of legs)

- Data Collection
  - Prior control type (stop vs. signal)
  - Number of approach legs & circulating lanes
  - Geometric characteristics (e.g., diameters, widths, turning radii)
  - Presence of traffic control devices
  - Crash data

Comparison of Before-After Crash Frequencies by Severity Level and Number of Lanes

Number of Circulating Lane	Number of Sites	Total Crashes		Injury Crashes		KA Crashes	
		Before	After	Before	After	Before	After
Single lane	92	4.10	3.16	0.86	0.36	0.09	0.04
Double lane	42	10.91	18.49	2.26	1.50	0.17	0.09
Triple Lane	8	26.54	67.14	5.17	5.18	0.25	0.11
All Roundabouts	142	6.65	11.55	1.38	0.99	0.12	0.06

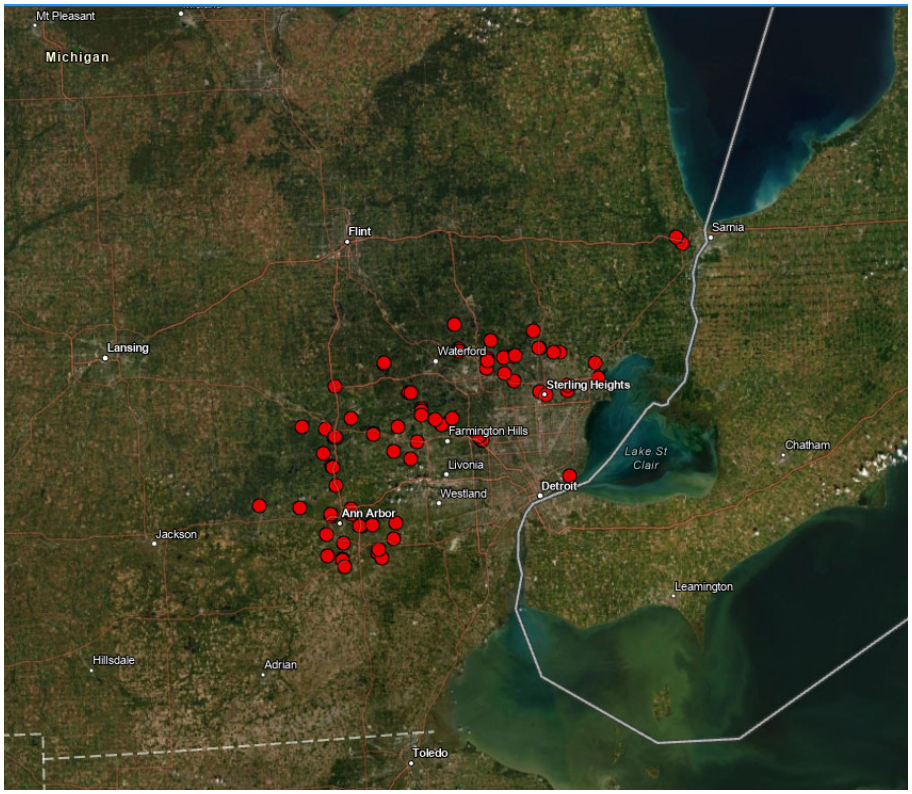
Empirical Bayes Analysis

- Safety Performance Functions (SPFs) were developed for control intersections for total and injury crashes separately:
  - Four legged stop-controlled intersection (n = 44)
  - Four-legged signalized intersection (n = 25)
  - Three-legged intersection (n = 23)
- These SPFs were used for the purposes of an Empirical Bayes (EB) analysis.

Empirical Bayes Analysis (Comparison with 2011 Study)

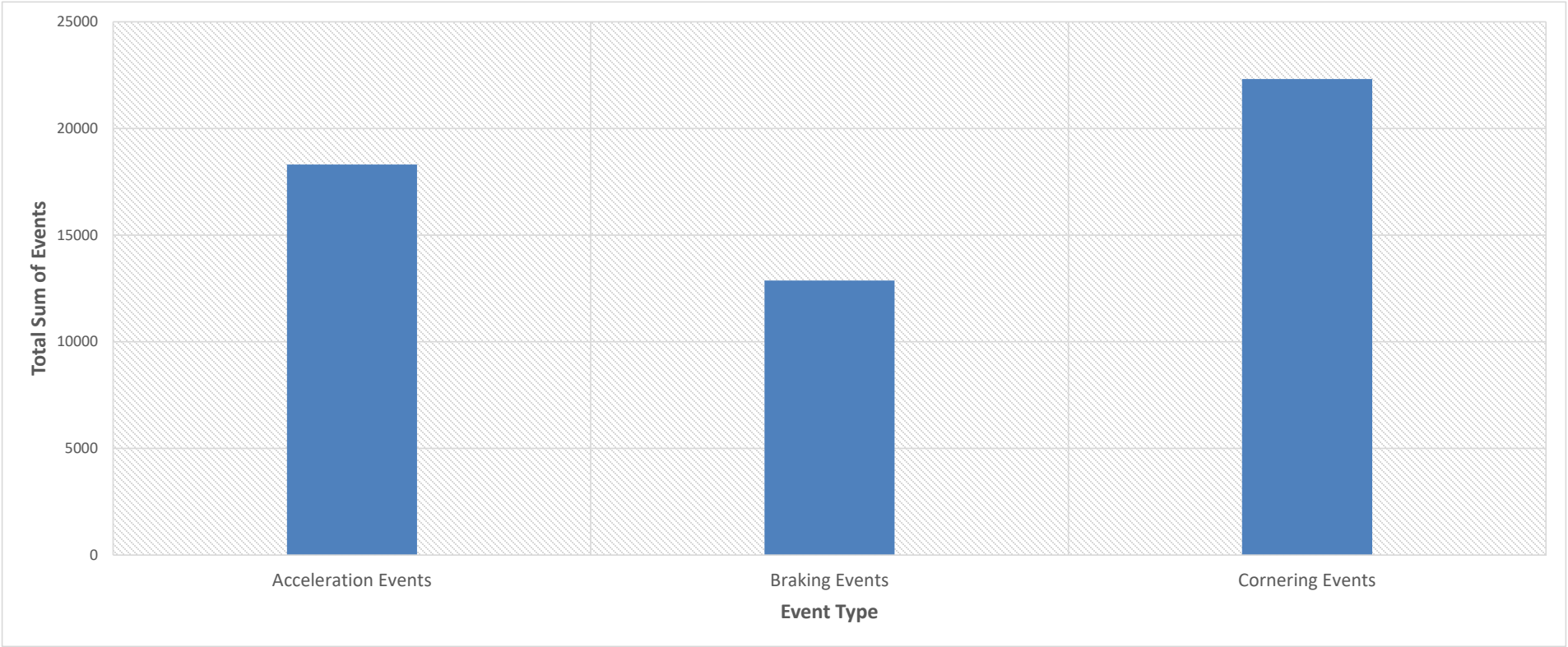
Category	Sites	Crash Severity	Crash Modification Factors (CMF) Comparison with Prior Results 2023 Study	2011 Study
All sites combined	97	Total	2.48	1.35
		Injury	0.79	0.58
Sites on interchange (previously stop-controlled)	11	Total	1.58	1.25
		Injury	0.50	0.42
Single and double lane roundabouts	89	Total	1.96	1.00
		Injury	0.65	0.49
Stop controlled intersection to roundabout	50	Total	2.79	1.03
		Injury	0.73	0.64
Signalized intersection to one- or two-lane roundabout	43	Total	2.20	0.78
		Injury	0.75	0.30
Signalized intersection to three-lane roundabout	4	Total	2.54	1.98
		Injury	0.99	0.80

Connected Vehicle Data Analyses

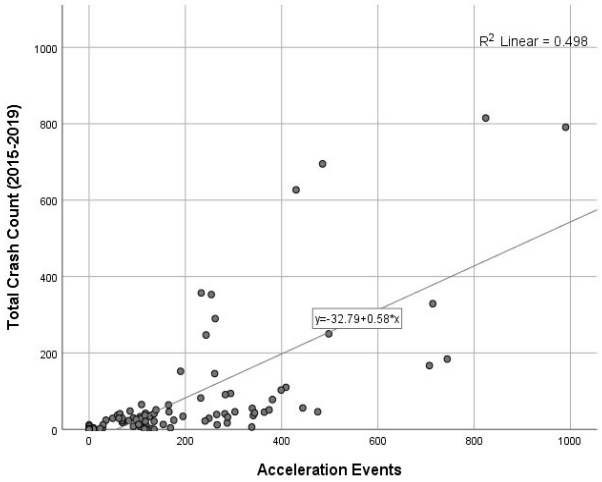


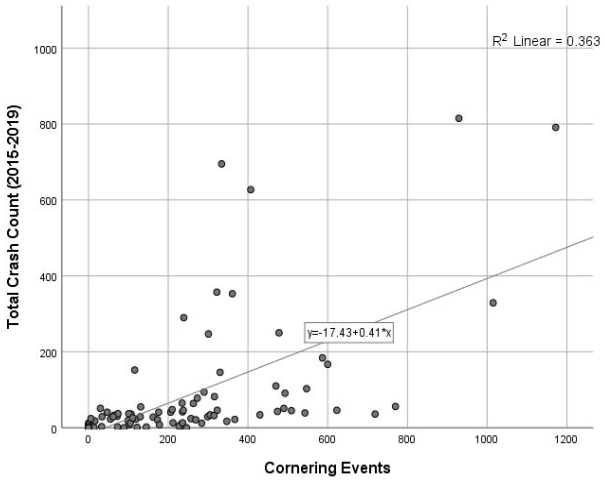
- 90 roundabouts in SEMCOG region identified
- Crash and CV event data merged using spatial join in ArcGIS
- Additional site-specific information obtained through companion MDOT project

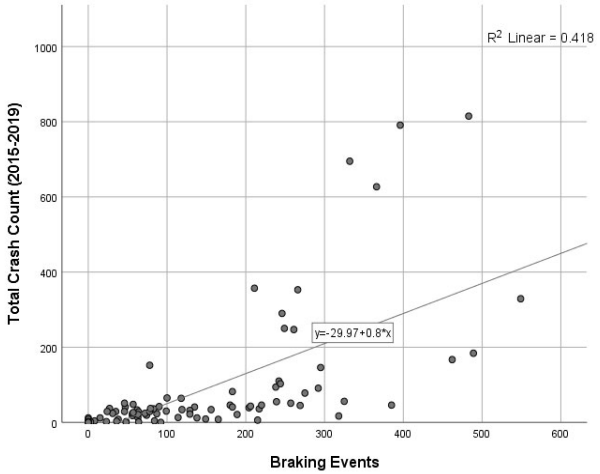
Distribution of Ford CV Data Across All Sites (n = 90) For SIX MONTHS of Data



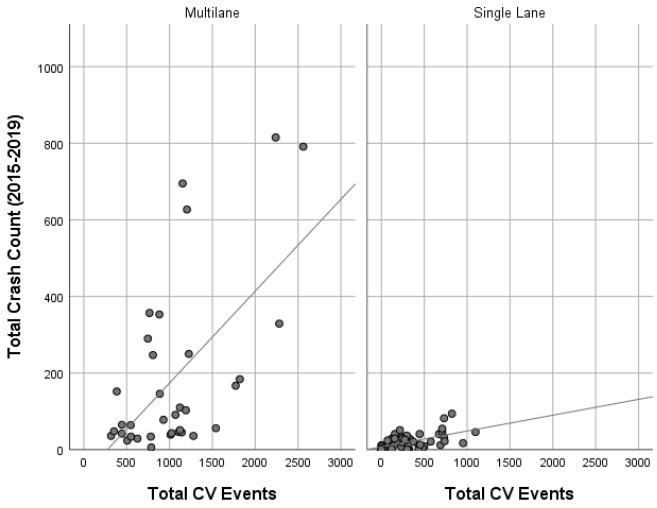
Crashes versus CV Events by Event Type

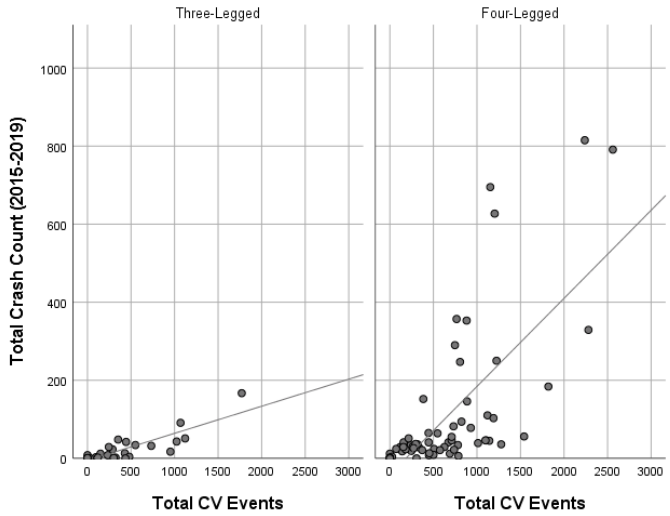






Crashes vs. CV Events by Roundabout Type





R^2 = 0.32 (Multilane)
R^2 = 0.35 (Single-lane)

R^2 = 0.72 (Three-Legged)
R^2 = 0.47 (Four-Legged)

Conclusions and Directions for Future Research

Conclusions – Impacts on Driver Behavior

- Driver speed selection close to entry significantly affected by roundabout geometry.
- Drivers generally begin to decelerate within 200 ft of the yield line.
- Accepted gaps were smaller on
  - Multilane roundabouts, three-legged roundabouts, roundabouts in rural areas, and roundabouts located on exit ramps.
- Yield rates were lower at high-speed roundabouts, especially those located on exit ramps

Conclusions – Impacts on Safety

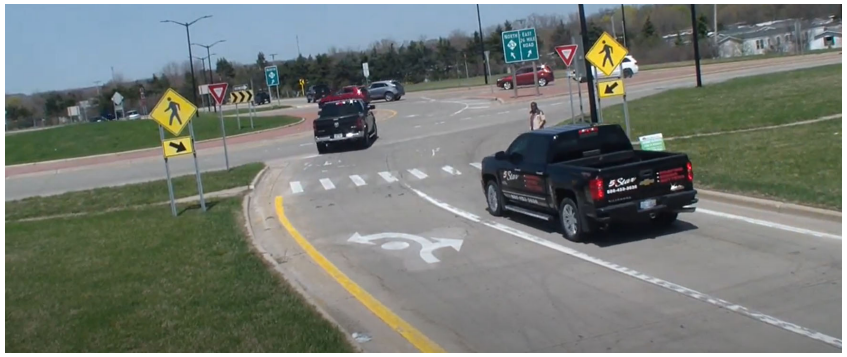
- Roundabouts showed positive impacts on safety
  - Reduced crash severity
  - Reduction in certain crash types (angle, head-on)
- All analyses showed significant increases in total crashes and reduction in injury crashes as a result of roundabout construction
- EB analyses showed CMFs relatively larger than the current MDOT CMFs (2011 study)
  - Much bigger sample of sites in current study
  - Prior MDOT study used reference SPFs from SafetyAnalyst for control intersections. SPFs for reference group were developed in current study

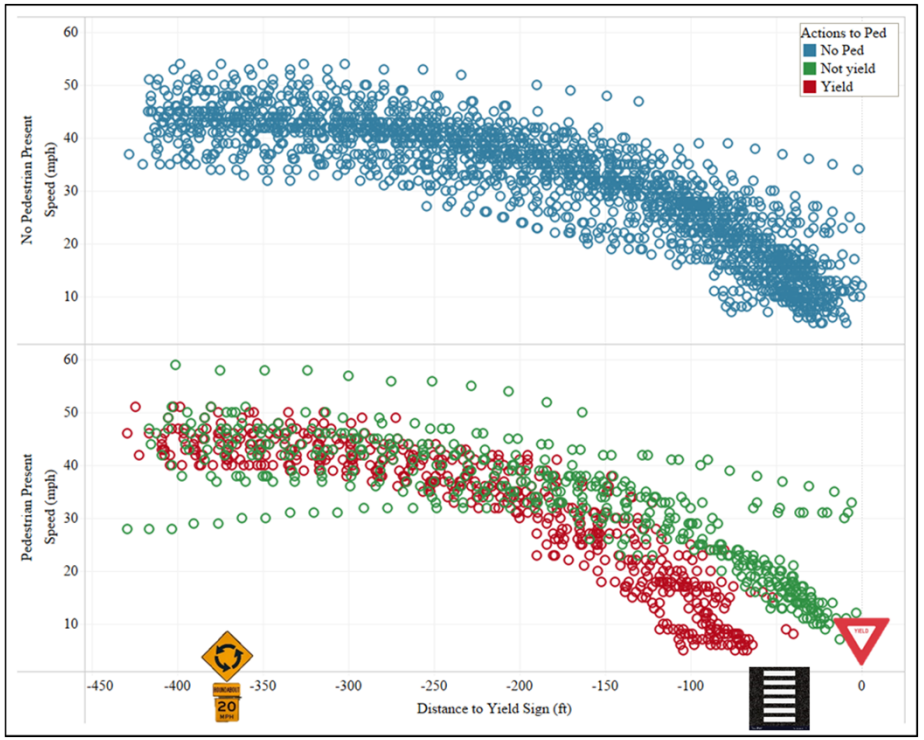
Future Directions

- MDOT can utilize SPFs developed in this study to predict roundabout safety performance
  - SPFs developed by number of legs and lanes
  - Covers 100+ sites throughout Michigan
  - Considers detailed roadway geometry data
- SPFs can be used to estimate crashes by severity, and compare expected safety performance based on site characteristics
- SPFs and CMFs can be used by MDOT and other agencies at the planning and design level when considering construction or conversion projects

Ongoing and Future Work

- Ongoing Minnesota DOT study is evaluating driver interaction with pedestrians and bicyclists.
  - Yielding behavior
  - Speed selection





Comments or Questions?

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How to Implement FHWA's Safe System Approach *at the Regional Level*

Jenya Abramovich, AICP

Transportation Bonanza 2024

What is SEMCOG?

Transportation

Environment

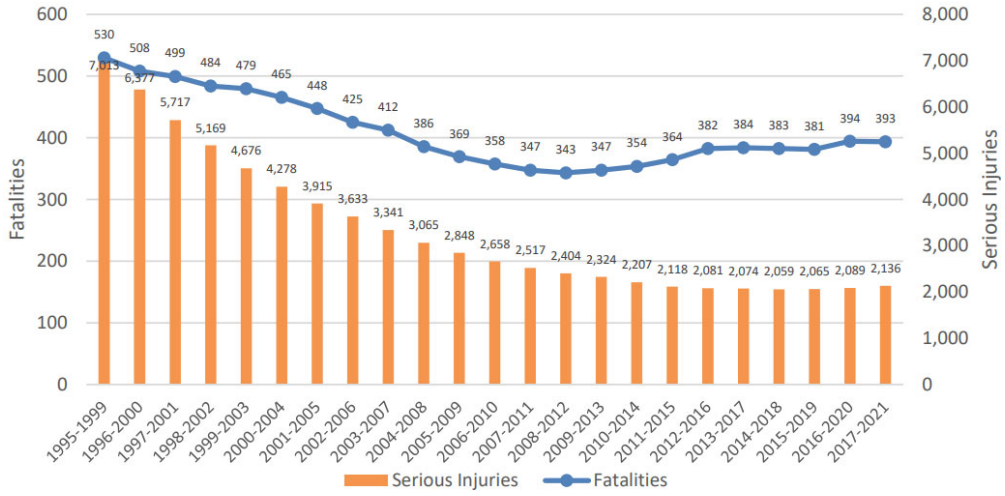
Community & Economic Development

Education

Benchmarking Crash Data

- 1 person killed, 6 seriously injured each day in Southeast Michigan
- 95% of communities experienced at least 1 fatal or serious injury crash in the last 5 years
- MDOT roads: 9% of the regional network; 36% of fatal and serious injury crashes

Fatalities and Serious Injuries Five-Year Moving Averages in Southeast Michigan, 1995-2021

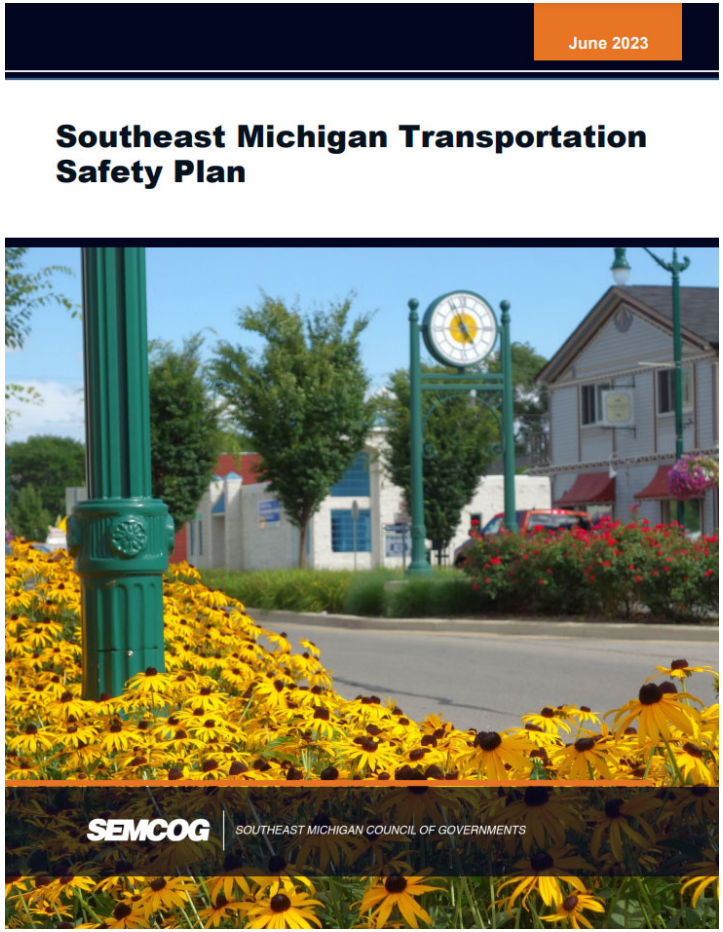


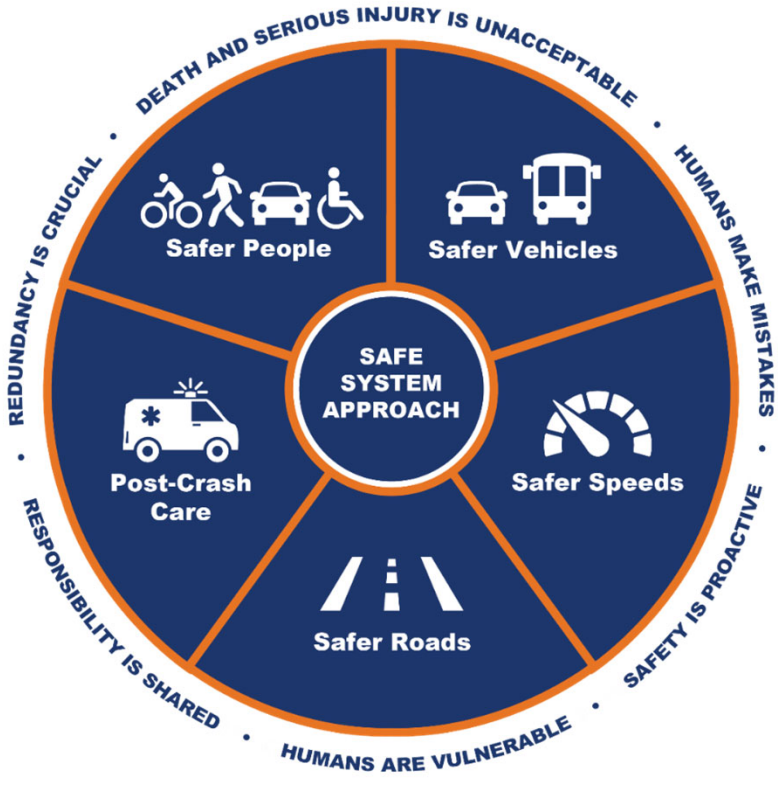
SEMCOG Safety Performance Target Setting

- Set own targets starting 2023
  - Regional instead of statewide
- Data driven
  - From Task Force, TSAC, TCC, & Executive Committee input
- Ultimate goal of reaching **Zero by 2050**

Performance Measure (5-year rolling average)	Baseline (2018-2022)	2024 SEMCOG Target (2020-2024)
Fatalities	410.4	406.4 ⬇
Fatality Rate	0.976	0.956 ⬇
Serious Injuries	2,126.8	2,108.8 ⬇
Serious Injury Rate	5.029	5.009 ⬇
Non-motorized Fatalities and Serious Injuries	376.0	366.0 ⬇

Transportation Safety Regional Policies





Emphasis Areas – *Infrastructure*

HIGH PRIORITY EMPHASIS AREAS

Intersection

Lane departure

ADDITIONAL EMPHASIS AREAS

Access management

Rail

Work zone

Emphasis Areas – *Road Users*

HIGH PRIORITY EMPHASIS AREAS

Pedestrian

Bicyclist

Motorcyclist

ADDITIONAL EMPHASIS AREAS

Commercial truck/bus

Older driver

Young driver

Emphasis Areas – *Behaviors*

HIGH PRIORITY EMPHASIS AREAS

Speeding

Impairment (alcohol & drug)

Unbelted occupant

ADDITIONAL EMPHASIS AREAS

Distracted driving

Emphasis Areas – *Systems*

HIGH PRIORITY EMPHASIS AREAS

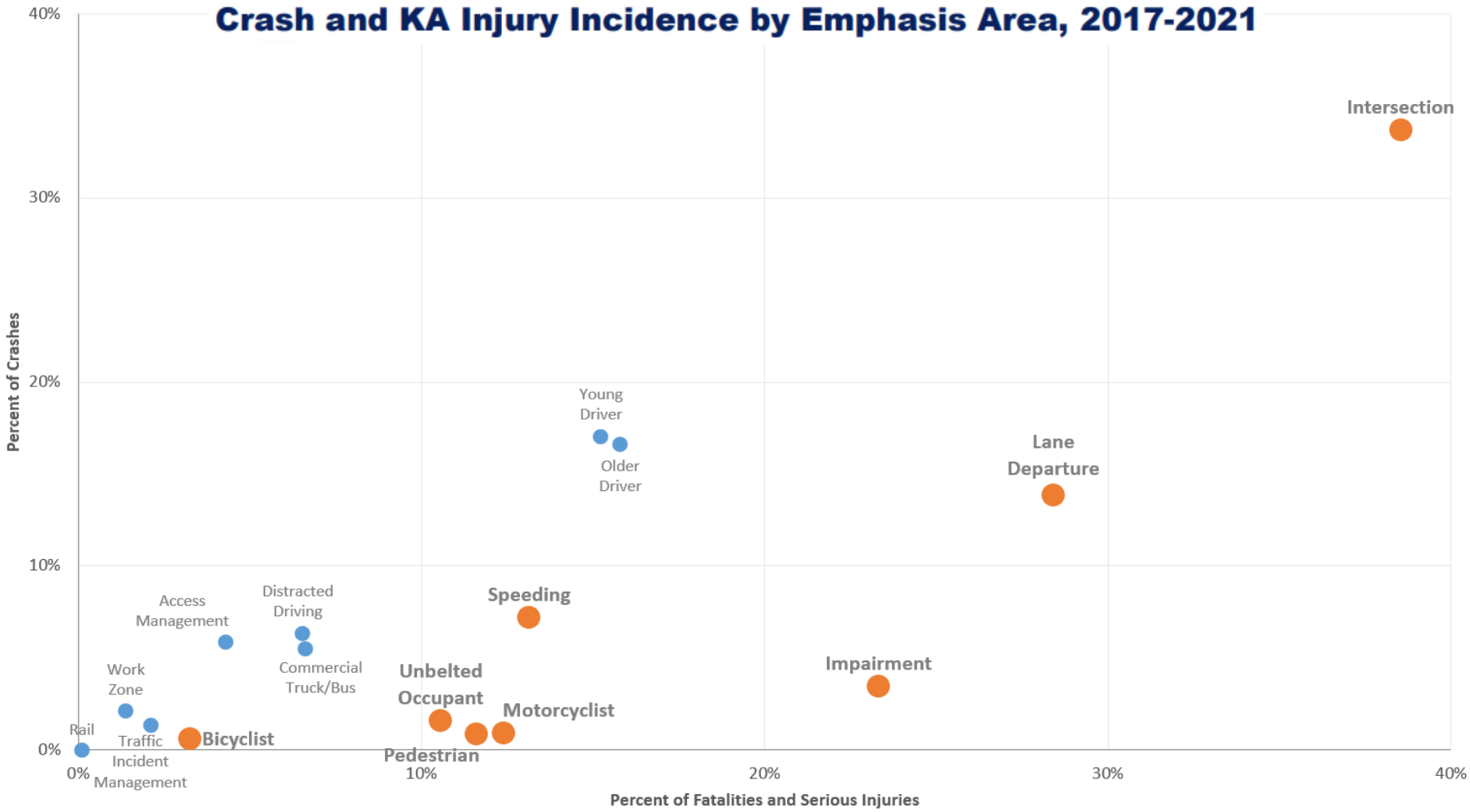
ADDITIONAL EMPHASIS AREAS

Emerging technology

Traffic incident management

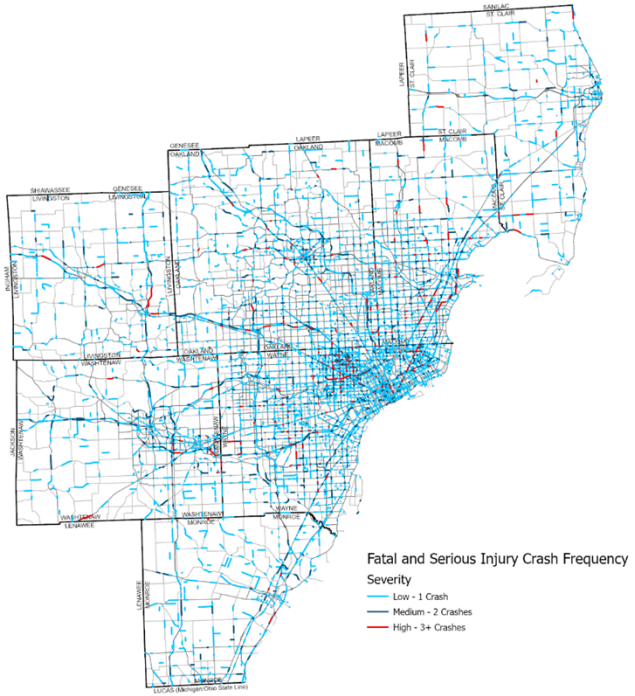
Traffic records and information systems

Emphasis Area Analysis

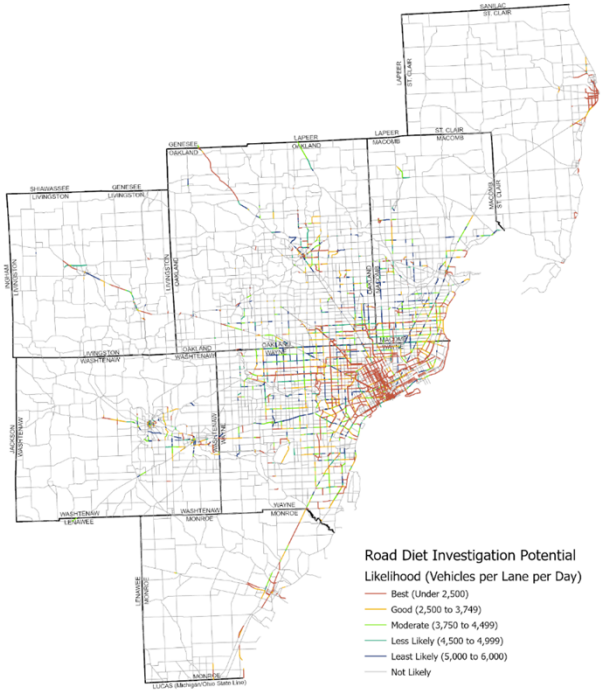


Regional Analysis

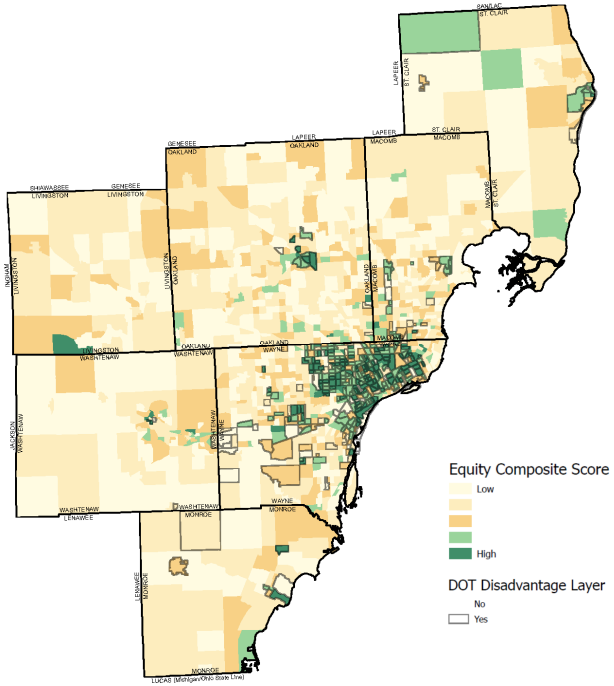
High Injury Network



Excess Capacity

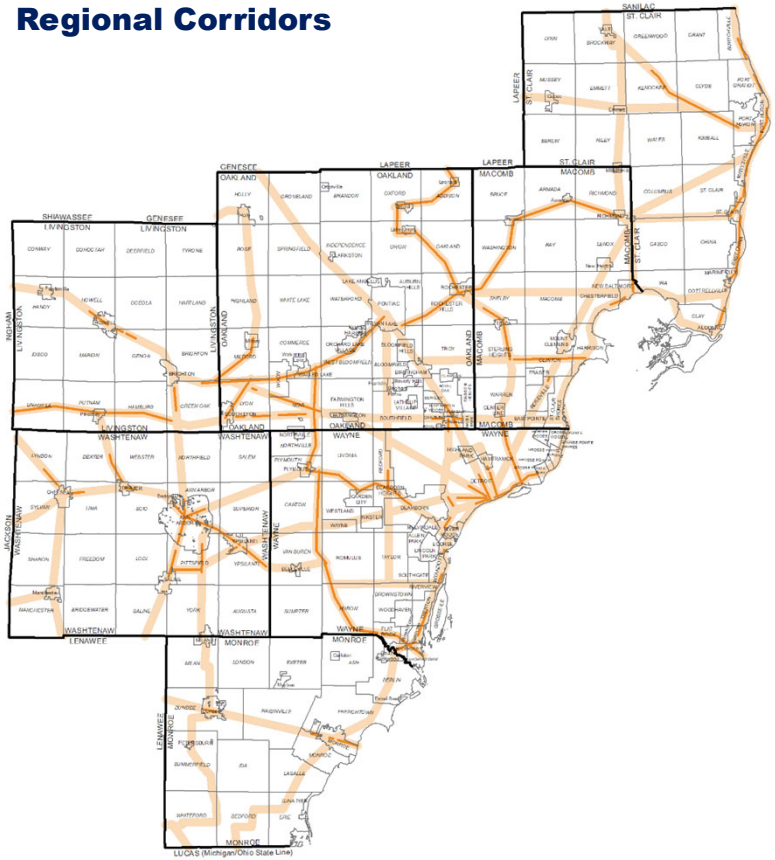


Transportation Equity Areas

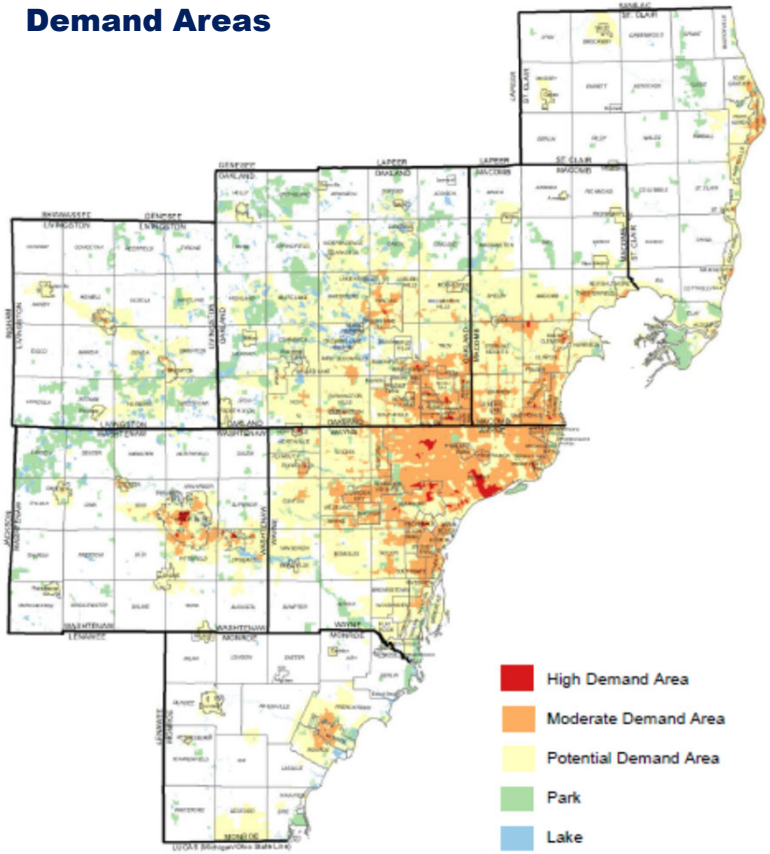


Regional Analysis – Bicycle and Pedestrian Mobility Plan

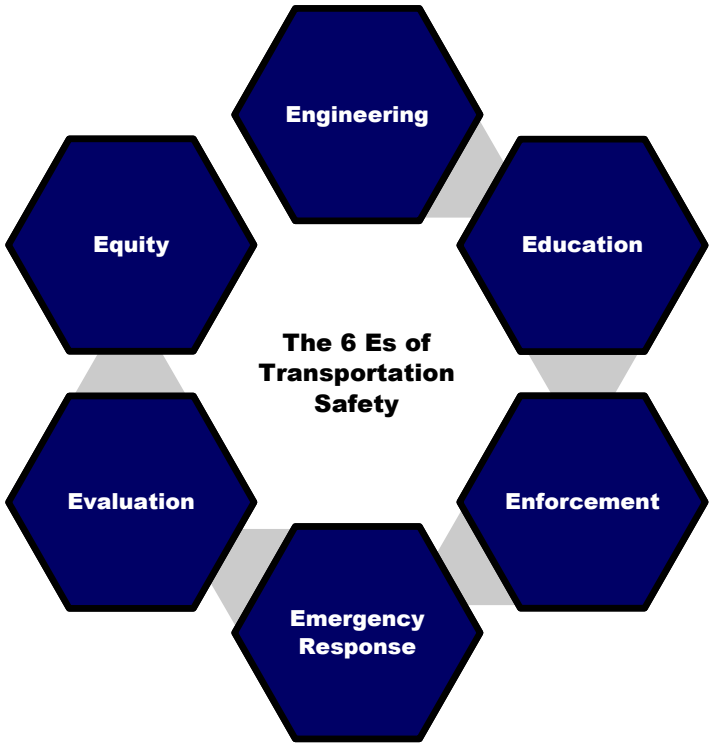
Regional Corridors

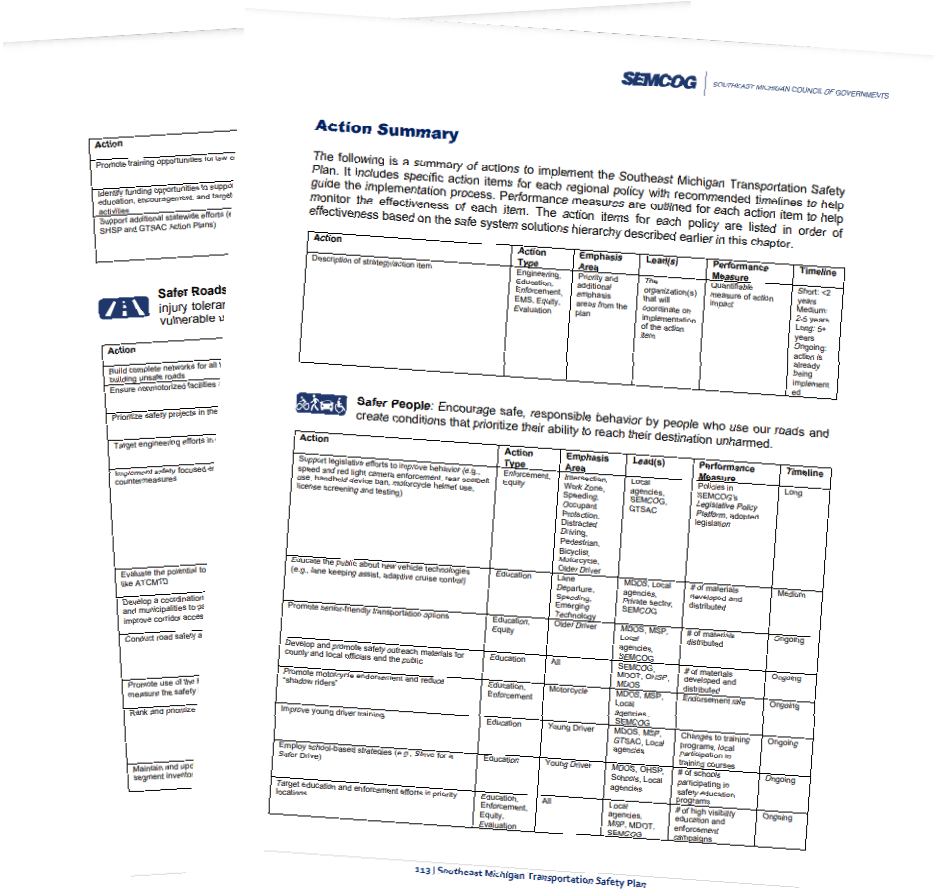


Demand Areas



Implementation





SEMCOG | SOUTHEAST MICHIGAN COUNCIL OF GOVERNMENTS

Action Summary

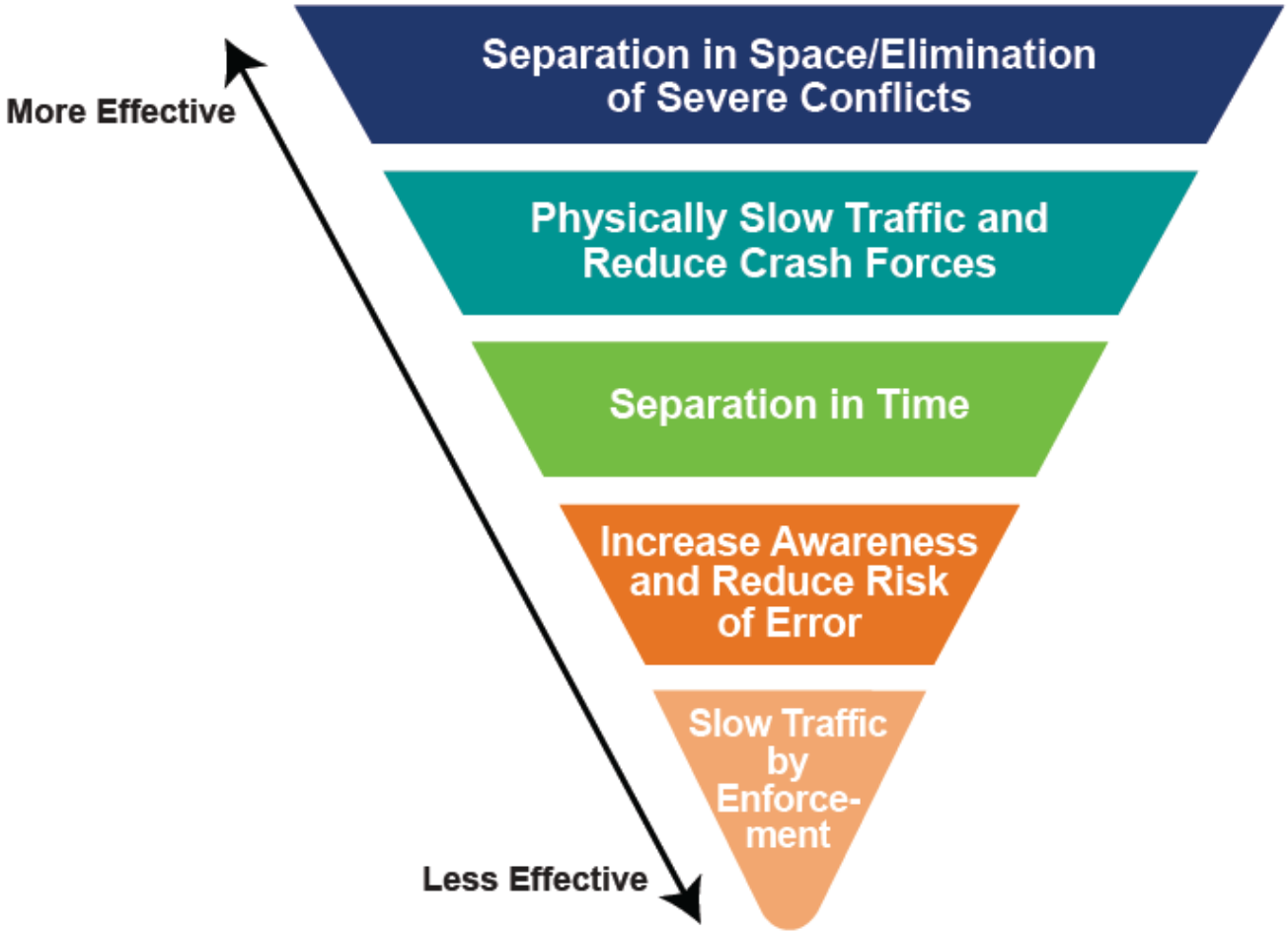
The following is a summary of actions to implement the Southeast Michigan Transportation Safety Plan. It includes specific action items for each regional policy with recommended timelines to help guide the implementation process. Performance measures are outlined for each action item to help monitor the effectiveness of each item. The action items for each policy are listed in order of effectiveness based on the safe system solutions hierarchy described earlier in this chapter.

Action	Action Type	Emphasis Area	Lead(s)	Performance Measure	Timeline
Description of strategy/action item	Engineering, Education, Enforcement, EMS, Equity, Evaluation	Priority and additional emphasis areas from the plan	The organization(s) that will coordinate on implementation of the action item	Quantifiable measure of action impact	Short: <2 years Medium: 2-5 years Long: 5+ years Ongoing: action is already being implemented

Safer People: Encourage safe, responsible behavior by people who use our roads and create conditions that prioritize their ability to reach their destination unharmed.

Action	Action Type	Emphasis Area	Lead(s)	Performance Measure	Timeline
Support legislative efforts to improve behavior (e.g., use, handheld device ban, motorcycle helmet use, license screening and testing)	Enforcement, Equity	Intersection, Work Zone, Speeding, Occupant Protection, Distracted Driving, Pedestrian, Bicyclist, Motorcycle, Older Driver	Local agencies, SEMCOG, GTSAC	Policies in SEMCOG's Legislative Policy Platform adopted/ legislation	Long
Educate the public about new vehicle technologies (e.g., lane keeping assist, adaptive cruise control)	Education	Lane Departure, Speeding, Emerging Technology	MDOS, Local agencies, Private Sector, SEMCOG	# of materials developed and distributed	Medium
Promote senior-friendly transportation options	Education, Equity	Older Driver	MDOS, MSP, Local agencies, SEMCOG	# of materials distributed	Ongoing
Develop and promote safety outreach materials for county and local officials and the public	Education	All	SEMCOG, MDOT, OHSP, MDOS	# of materials developed and distributed	Ongoing
Promote motorcycle endorsement and reduce "shadow riders"	Education, Enforcement	Motorcycle	MDOS, MSP, Local Agencies, SEMCOG	Endorsement rate	Ongoing
Improve young driver training	Education	Young Driver	MDOS, MSP, GTSAC, Local agencies	Changes to training programs, /local participation in training courses	Ongoing
Employ school-based strategies (e.g., Street for a Safer Drive)	Education	Young Driver	MDOS, OHSP, Schools, Local agencies	# of schools participating in safety education programs	Ongoing
Target education and enforcement efforts in priority locations	Education, Enforcement, Equity, Evaluation	All	Local agencies, MSP, MDOT, SEMCOG	# of high visibility education and enforcement campaigns	Ongoing

Safe System Solution Hierarchy



- Separated Shared Use Paths
- Grade Separation

- Self Explaining Roads
- Horizontal Deflection
- Vertical Deflection
- Intersectional Channelization

- Exclusive Pedestrian and Bicyclist Phases
- Leading Pedestrian Interval
- Pedestrian Hybrid Beacon

- Crosswalk Visiblity Enhancements
- Rectangular Rapid Flashing Beacons

- Appropriate Speed Limits
- Variable Speed Limits
- Speed Safety Cameras

TIP Prioritization

- Proposed minimum bylaw language:

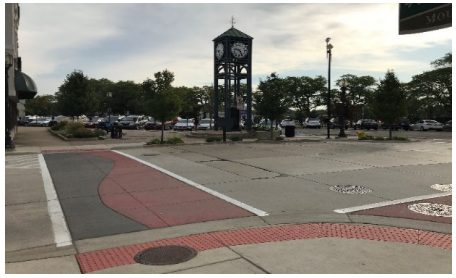
  FAC will determine the priority of projects submitted to SEMCOG TIP through the documented process for project selection, including safety as one of the components.

- Methods for FAC's to incorporate safety into project development/prioritization:
  - Incorporate safety into project development/planning
    - » Compare project locations with High Injury Network (HIN) and investigate applying feasible safety countermeasures to overlapping areas
    - » Include safety section in the application form
  - Scoring points
    - » Investigate revising TIP project scoring criteria to enhance safety
  - Other ideas welcome. Method used should be stated in FAC bylaws.

TAP & Planning Assistance Program

TAP - $10 million per year

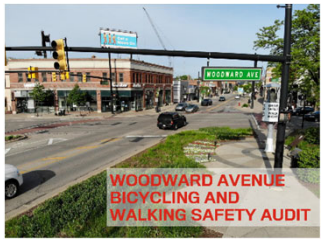
Detroit - Complete Street: Lane reduction & protected bikelanes



Mount Clemens – Enhanced sidewalks & safer intersections in downtown

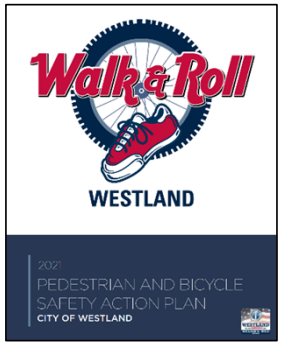
Clinton Twp – Separated pedestrian bridge over Clinton River

Planning Assistance Program - $500,000 per year



Woodward Ave – Bicycling & Walking Safety Audit

Eastpointe – 9 Mile Safety Corridor Plan

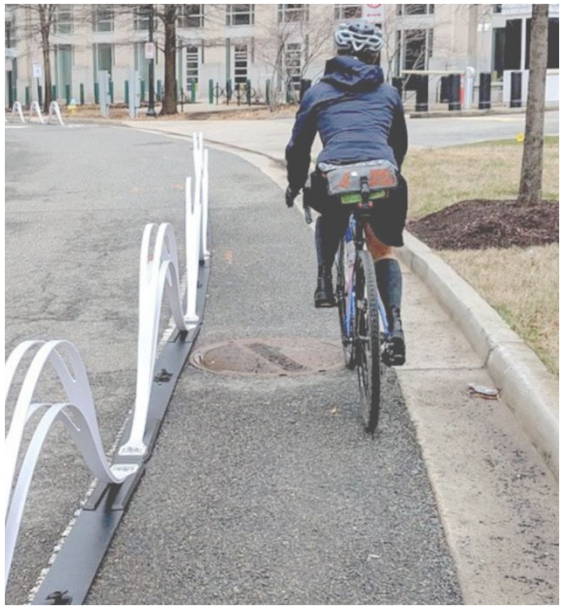


Westland – Pedestrian & Bicycle Safety Action Plan

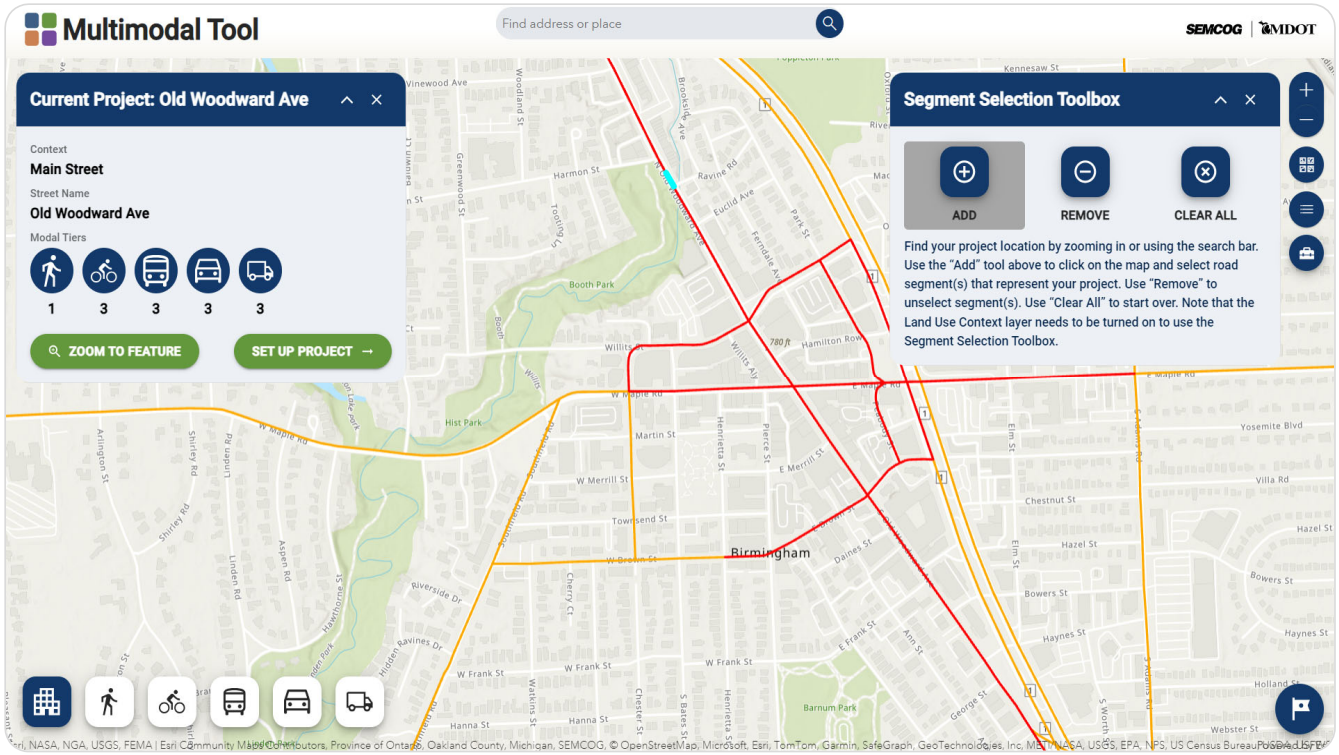
SS4A Program

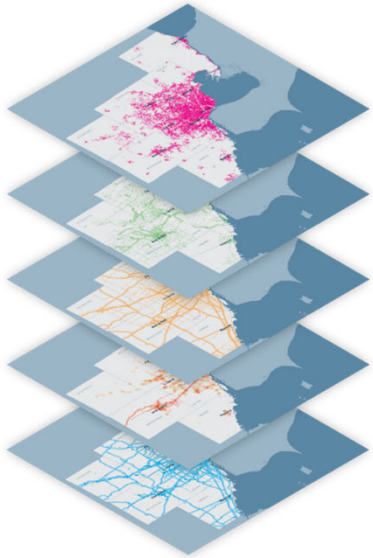
Road Safety Audits - $500,000

VRU Demonstration Projects - $10,000,000



Multimodal Tool





Pedestrian

Bike

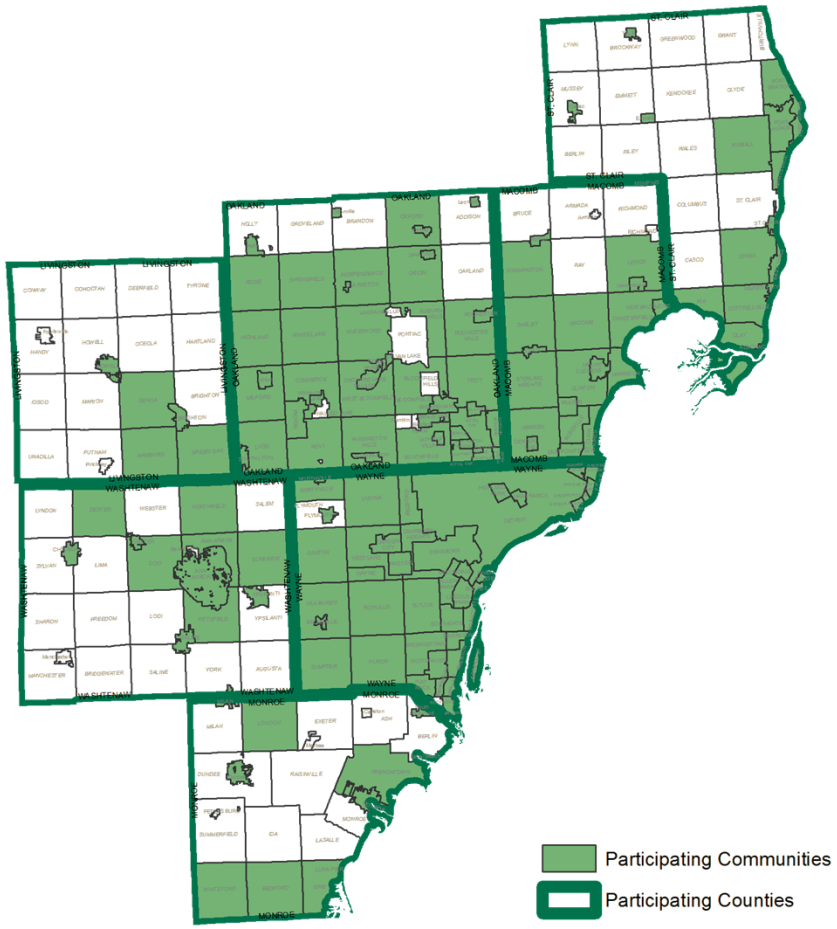
Auto

Transit

Freight

Public Education Campaign

Item Distribution



- **65% of communities**
- **100% of counties**
- Items distributed:
  - Tip cards
  - Brochures
  - Posters
  - Bike lights
  - LED wristbands
  - LED armbands

TV, Digital, and Video Streaming

129.9 million impressions:

- Billboards/Posters
- Gas Station TV
- Transit
- Broadcast TV
- Cable TV
- OTT streaming
- Radio streaming
- Social media
- Website

Collaboration

More than 200 partners

- AAA
- Earned media
- Libraries
- Local governments
- Metropolitan Affairs Coalition
- Michigan Department of Transportation
- Michigan Fitness Foundation
- Office of Highway Safety Planning
- Police departments
- Schools
- Transit agencies
- Transportation Safety Action Committee

MDOT dynamic message sign

Regional Coordination

Questions?

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