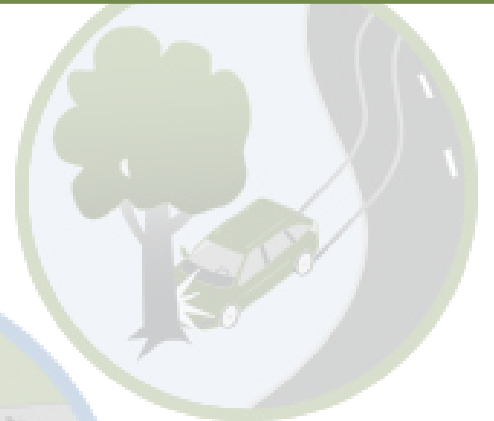




# SAVE: NOACA'S PLAN for TRANSPORTATION SAFETY



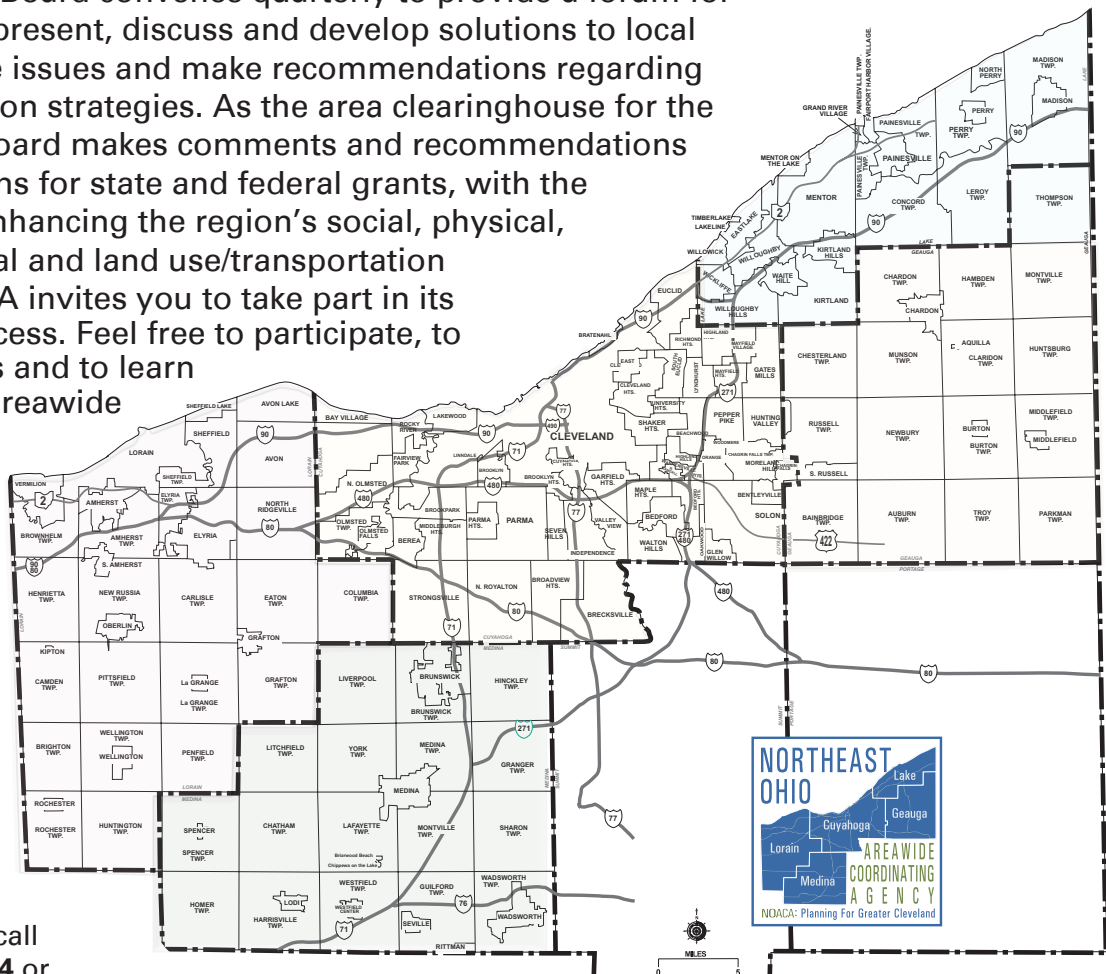
May 2019

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**The Northeast Ohio Areawide Coordinating Agency (NOACA)** is a public organization serving the counties of and municipalities and townships within Cuyahoga, Geauga, Lake, Lorain and Medina (covering an area with 2.1 million people). NOACA is the agency designated or recognized to perform the following functions:

- Serve as the Metropolitan Planning Organization (MPO), with responsibility for comprehensive, cooperative and continuous planning for highways, public transit, and bikeways, as defined in the current transportation law.
- Perform continuous water quality, transportation-related air quality and other environmental planning functions.
- Administer the area clearinghouse function, which includes providing local government with the opportunity to review a wide variety of local or state applications for federal funds.
- Conduct transportation and environmental planning and related demographic, economic and land use research.
- Serve as an information center for transportation and environmental and related planning.
- As directed by the Board, provide transportation and environmental planning assistance to the 172 units of local, general purpose government.

**NOACA's Board of Directors** is composed of 45 local public officials. The Board convenes quarterly to provide a forum for members to present, discuss and develop solutions to local and areawide issues and make recommendations regarding implementation strategies. As the area clearinghouse for the region, the Board makes comments and recommendations on applications for state and federal grants, with the purpose of enhancing the region's social, physical, environmental and land use/transportation fabric. NOACA invites you to take part in its planning process. Feel free to participate, to ask questions and to learn more about areawide planning.



For more information, call (216) 241-2414 or log on at [www.noaca.org](http://www.noaca.org)

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# SAVE: NOACA's Plan for Transportation Safety

May, 2019




**NORTHEAST OHIO  
AREAWIDE COORDINATING AGENCY**  
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Cleveland, Ohio 44114

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*Traffic deaths  
and injuries can  
be prevented with  
appropriate  
**planning,  
policies and  
programs.***

## Executive Summary

The Northeast Ohio Areawide Coordinating Agency (NOACA) envisions a safer future where no one is killed or seriously injured on Northeast Ohio's transportation network. The purpose of **SAVE: NOACA's Plan for Transportation Safety** (SAVE Plan) is to save lives in the NOACA region by identifying actions to reduce the most severe crashes that too often result in fatalities and serious injuries. The SAVE Plan was developed with the vision that traffic deaths and injuries can be prevented with appropriate planning, policies and programs, with a long-term goal of reducing the number of fatalities and serious injuries by 50% by the year 2040.

Achieving a safer transportation network requires addressing the interaction among the infrastructure, vehicles and the skill and behavior of travelers. To this end, recommendations of the SAVE Plan have incorporated a "6 E's" approach into the safety planning process, acknowledging the key roles that engineering, education, enforcement, emergency response, evaluation, and equity all play in preventing severe crashes and saving lives.

NOACA will play an important part in directing, promoting and enhancing safety in the region by administering the Regional Safety Program as part of its Overall Work Program each year. Staff will carry out this program by collecting and analyzing data, establishing priorities, planning for projects, participating in safety coalitions, securing funds for implementation, and providing technical assistance.

An evaluation of 10 years of crash data was performed to identify trends in emphasis areas associated with fatal and serious injury crashes. By identifying and quantifying the magnitude of the problem in specific emphasis areas, NOACA, its member communities, and its partner agencies will be better able to work together to focus the collective resources of the region on the things that are most critical to improving safety for all road users. The following 10 emphasis areas are recommended for specific action in this Plan:

- Intersection
- Roadway Departure
- Young Driver
- Speed
- Impaired Driving
- Older Driver
- Motorcycle
- Pedestrian
- Distracted Driving
- Bicycle

Additionally, the five-year rolling averages for the following five safety performance measures will be tracked as required under the FAST Act:

- Number of fatal crashes.
- Number of serious injury crashes.
- Rate of fatalities per 100 million vehicle miles traveled.
- Rate of serious injuries per 100 million vehicle miles traveled.
- Number of non-motorized fatal and serious injury crashes.

In summary, the SAVE Plan provides direction that will enable NOACA and others to work together to set goals and work toward the vision this Plan establishes for the region. By taking the lead to inform and coordinate the efforts of its safety partners in government and other agencies, NOACA intends to build a strong team committed to working hard to prevent fatalities and serious injuries. Reaching an ultimate goal of zero fatalities and serious injuries may seem like an impossible goal, but through the sustained effort and steady resolve of all, the lives of travelers on our region's highways will be saved.



## Section One: About This Plan

### A Vision for a Safer Future

NOACA envisions a future where no lives are lost on our region's roads. NOACA believes that traffic deaths and injuries can be prevented with appropriate planning, policies and programs. This plan identifies ways to reduce the number of fatalities and serious injuries by 50 percent by 2040. Similar to the vision of the federal and state policies and guidance, including those from the Federal Highway Administration (FHWA), the Ohio Department of Public Safety (ODPS), and the Ohio Department of Transportation (ODOT), this plan has a long-term vision of a transportation network without deaths or injuries.

This vision is supported by two NOACA governing documents: the 2015 NOACA Strategic Plan [Going Forward, Together](#) and the [AIM Forward 2040](#) Long-Range Transportation Plan. Both plans support transportation safety initiatives encompassed in NOACA's vision statement:

***“NOACA will **STRENGTHEN** regional cohesion, **PRESERVE** existing infrastructure, and **BUILD** sustainable multimodal transportation system to **SUPPORT** economic development and **ENHANCE** the quality of life in Northeast Ohio”***

Transportation safety is a critical and necessary component in community development, housing, economic growth, health, education and quality of life. Safe, multimodal options are essential for diverse populations, community stability and growth.



## DID YOU KNOW?

### Transportation safety factors are:

- **The Environment:** How is infrastructure designed, constructed, and maintained?
- **Mode of Travel:** What ways are travelers choosing to commute?
- **Human Behavior:** How are travelers conducting themselves while commuting?

### Influences may include:

- Distracted, impaired or inexperienced drivers or travelers
- Roadway characteristics that limit perception and reaction time
- Poor road conditions due to weather
- Poorly maintained vehicles
- Travelers violating traffic laws

## A Critical Issue

Transportation safety is a critical issue for the NOACA region. Between 2013 and 2017, a total of 6,878 fatalities or serious injuries occurred as a result of crashes in the NOACA region, resulting in an annual average of **131 fatalities** and **1,245 serious injuries** over that span.

### FATALITIES AND SERIOUS INJURIES IN THE NOACA REGION BETWEEN 2007 AND 2017



Traffic crashes have a significant, lasting negative impact on individuals, families, and the NOACA region as a whole. Medical care, legal fees, debilitating injuries and reduced quality of life are often lifelong consequences for crash victims and their families. Road related deaths and injuries have been studied by many organizations including the World Health Organization, which has drawn attention to this issue by calling it a public health crisis.<sup>1</sup> From across the globe to here in Northeast Ohio, traffic crashes can largely be preventable.

Fatal and serious injury crashes also cause significant economic distress for the state and the region. Healthcare expenses, wage loss, property damage, legal costs, emergency services, congestion costs, and other expenses add up to millions of dollars of economic loss. The most recent economic distress data available is from 2010, when traffic crashes cost the country \$242 billion<sup>2</sup>.

<sup>1</sup> [http://www.who.int/violence\\_injury\\_prevention/road\\_safety\\_status/2015/en/](http://www.who.int/violence_injury_prevention/road_safety_status/2015/en/)

<sup>2</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812013>

## DID YOU KNOW?

### NOACA provides support and influences safety planning through:

- The Transportation for Livable Communities Initiatives (TLCI) program.
- The Safe Routes to School Assistance (SRTS) program.
- Participation in Safe Community coalitions in all five counties.
- Road Safety Assessments (RSAs).
- Supporting integrating technology with transportation systems through the Intelligent Transportation Systems (ITS) program.
- Public councils focused on safety, transit, and pedestrian and bicycle transportation.



### Purpose of this Plan

The SAVE Plan provides detail about existing trends for fatal and serious injury crashes, and plots a course toward a safer future.

The purpose of this plan is to achieve safer facilities in the NOACA region for all modes of transportation by identifying short and long-term safety goals and providing guidance on how to achieve them. The overall goal of the SAVE Plan is to reduce the number of serious injuries and fatalities on roads in the NOACA region by making cost-effective safety improvements at the system-wide level, as well as at prioritized locations identified on the ODOT safety priority lists and the NOACA State of Safety report.

Success in reaching these goals will be evaluated by performance measures that will be updated annually in the State of Safety report.

### The Role of NOACA

As the metropolitan planning organization (MPO) for the region, NOACA is responsible for transportation planning within the boundary of Cuyahoga, Geauga, Lake, Lorain, and Medina counties. In this capacity, NOACA influences roadway safety in determining what infrastructure projects are included in the region's Transportation Improvement Program (TIP).

However, enhancing transportation safety requires more than building safer roads. Human behavior plays a factor in transportation safety as much as infrastructure and policies. The combination of environment, mode of travel, and the behavior and ability of the traveler are all factors in achieving safe outcomes for everyone on the roadway. In addition, NOACA provides leadership within the region to coordinate efforts that result in the reduction of fatalities and serious injuries beyond just infrastructure improvements.

This plan lays the groundwork for NOACA to develop and support key initiatives in partnership with other organizations to advance safe projects and to encourage safer traveler behavior.

## Section 2: Plan Development - Processes and Influences

National, federal and state safety planning policies, guidance and resources contribute toward the overall framework for this plan. The SAVE Plan is intended to serve as a map to guide the NOACA region, to identify and pursue opportunities for national, federal and state safety funding, and support regional and local investment to meet the safety needs of this region.

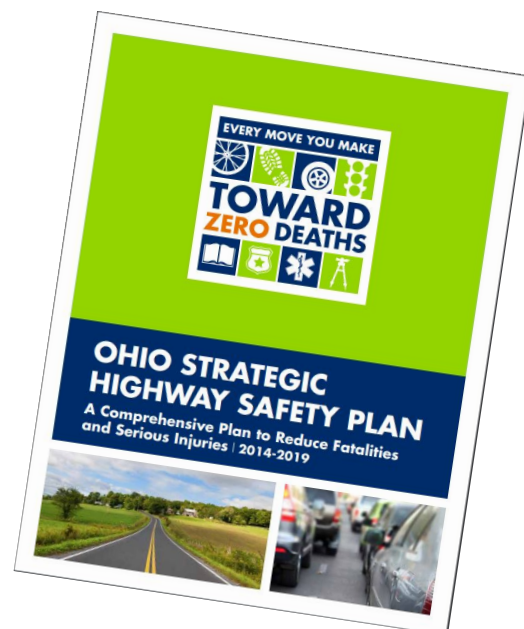
### Federal Policy and Legislation

A federal emphasis on highway safety began with the passage of the Highway Safety Act of 1966. Since then, provisions to address highway safety have been incorporated into all subsequent surface transportation bills. Most recently, the Fixing America's Surface Transportation (FAST) Act was enacted on December 4, 2015, continuing the tradition of making highway safety a core federal-aid program. Rule-making that occurred with the passage of the FAST Act, and Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21) before it, required all states and MPOs to adopt safety performance measures and targets (based on a 5-year rolling averages) in each of the following five areas:

- Number of fatalities
- Rate of fatalities per 100 million vehicle miles traveled
- Number of serious injuries
- Rate of serious injuries per 100 million vehicle miles traveled
- Number of non-motorized fatalities and non-motorized serious injuries

### Ohio's Strategic Highway Safety Plan (SHSP)

The primary document guiding highway safety planning for the state is the ODOT [Strategic Highway Safety Plan \(SHSP\) 2014-2019](#), updated to meet the federal requirement that each state department of transportation develop a strategic plan to be eligible for federal safety funds and to help direct resources, focus implementation efforts, and organize stakeholder teams. The updated plan focused on crash data from 2003 to 2013 for all state and local roadways. Based on analysis and coupled with the input from the SHSP Steering Committee and stakeholders, Ohio selected four broad emphasis areas and 15 subareas for continued monitoring and investment.



## The 6 E's of Transportation Safety at NOACA

Traffic crashes happen on our region's roads for a variety of reasons that can involve either the road, the vehicle, and/or the traveler. In fact, a recent study conducted by the National Highway Traffic Safety Administration (NHTSA) concluded that 94 percent of all traffic crashes occur as a result of driver error<sup>3</sup>. Achieving a safer transportation network requires addressing the interaction among the infrastructure, vehicles and the skill and behavior of travelers.

Recommendations in this plan are founded by a comprehensive approach to improving safety by considering the "6 E's" of transportation safety shown in the diagram below.

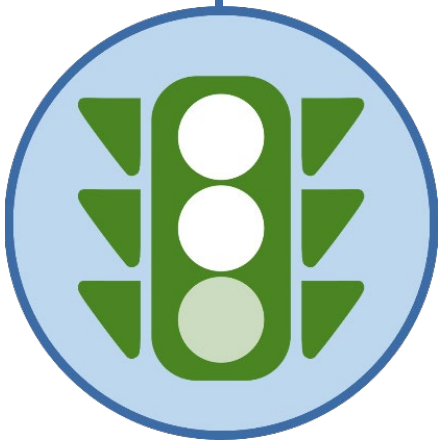


<sup>3</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812115>

## The Regional Planning Process

The SAVE Plan was developed using a data-driven approach to identify factors that contribute to fatal and serious injury crashes in the NOACA region. The methodology of this process included the following actions:

- **Developing the Vision:** Worked with NOACA's Safety and Operations Council (SOC) to develop a vision of reducing and eliminating traffic deaths and serious injuries.
- **Assessing Existing Conditions:** Researched best practices, federal and state policy frameworks, and analyzed regional crashed data from 2007 to 2017 to determine major trends. This step resulted in the identification of emphasis areas that anchor the recommendations.
- **Developing Strategies:** Identified emphasis areas to achieve plan goals. Researched best practices and reviewed federal and state guidance to determine appropriate strategies considering the "6 E's" of transportation safety.
- **Identifying the Performance Measures:** Identified measurable data to track progress.
- **Publishing the final SAVE: NOACA's Plan for Transportation Safety:** Implement the plan upon approval and adoption.
- **Producing NOACA's State of Safety Reports:** Published annually to evaluate regional safety performance and track progress toward NOACA's safety goals.



## DID YOU KNOW?

### In Ohio, elements of the "6 E's" of Transportation Safety are addressed:

- In the Ohio Strategic Highway Safety Program (SHSP) implemented by the Ohio Department of Transportation (ODOT)
- As part of the required planning process of the Safe Routes to School (SRTS) program administered by ODOT
- Through Safe Communities coalition traffic safety programs in Ohio counties, administered by the State Highway Patrol, Ohio Traffic Safety Office

## Section 3: The NOACA Regional Safety Program (RSP)

### Directing Safety Efforts through Planning, Data Analysis, Regional Coalition Participation and Support, and Technical Assistance

The Regional Safety Program (RSP) seeks to direct, promote, and enhance the safety of the transportation network to reduce fatal and serious injury crashes for all modes of travel in the NOACA region. The NOACA Division of Planning, Safety and Operations Section administers the RSP. The Section will accomplish this by collecting and analyzing data, establishing priorities, planning for projects, participating in safety coalitions, securing funds for implementation, and providing technical assistance in our region.

#### The RSP supports NOACA programs and jurisdictions by:

- Preparing the annual State of Safety report, which provides an annual review of crashes in the NOACA region over the previous five-year period.
- Leading road safety audits (RSAs) which are formal safety performance examinations conducted for communities at priority safety locations identified in the State of Safety Report. RSA teams make recommendations for safety improvements to reduce crashes based on observations of traffic operation coupled with the review of crash patterns.
- Participating in community outreach, coalition building, and recurring meetings to collaborate with multi-agency partners, such as ODOT District Safety Review and Active Transportation teams, regional Safe Communities/Kids meetings, and Safe Routes to School (SRTS) forums.
- Providing technical assistance to NOACA community members and internal programs that support Active transportation, Safe Routes to School (SRTS), and Transportation for Livable Communities (TLCI) funds.
- Providing input with respect to safety on funding applications and projects under consideration for addition to the NOACA Transportation Improvement Program (TIP).
- Developing a Safe Routes to School plan outlining strategies and actions to provide assistance, strengthen relationships, and communicate opportunities to improve transportation safety for students and families in communities, school districts, and partners in our region.
- Convening the [Safety and Operations Council](#) (SOC) to serve as an advisory group on the topic of safety planning and aid in the development of the RSP. The SOC is made up of local agency planners and engineers, law enforcement and emergency responders, transit providers, ODOT, FHWA, and community members. The SOC meets quarterly. All meetings are open to the public.

### **STATE OF SAFETY: THE REGION'S ANNUAL SAFETY "REPORT CARD"**

The NOACA State of Safety report is annually produced to update our stakeholders and the public on the region's progress and performance as identified in the SAVE. It includes state and national data on crash types by mode, and assesses safety performance in the five categories required under the FAST Act, as well as performance in the 10 SAVE Plan emphasis areas. This report also includes identifying priority locations by intersection and segment for safety improvement.

## Section 4: Emphasis Areas, Performance Measures, and Strategies

The long-term goal of this plan is to strive to eliminate fatalities and serious injuries in all modes of transportation in the NOACA region. To that end, the NOACA Safety and Operations Unit, with interdepartmental team assistance and input from the Safety and Operations Council (SOC), developed the 2019-2023 SAVE Plan as a blueprint for promoting and enhancing transportation safety across all jurisdictions, agencies, and organizations that serve the public throughout the NOACA region.

The SAVE Plan also serves as a document to attract funding to the NOACA region that will address all facets of transportation safety. The “Six E’s” approach provides the framework to plan and to implement, not just highway and roadway improvements, but also to acknowledge and address traveler behavior and mode choice by supporting education and enforcement programs, data collection, and evaluation. Developing partnerships and participating in coalitions that share common interests in safety - public health, community development, education, and non-profit organizations; for example - will expand investments from non-transportation funding sources and will assist in meeting transportation safety goals.

### Selection of Emphasis Areas

To ensure that this plan has direct influence and assists the state in accomplishing its long-term goals, the SAVE Plan includes performance measures and strategies that align with the state’s safety planning document, the Ohio Strategic Highway Safety Plan (SHSP). Both the SHSP and the SAVE Plan focus solely on crashes resulting in fatalities or serious injuries, as these have the most devastating and long-lasting impacts on people’s lives and on the quality of life for Ohioans.

In order to assess transportation safety in the NOACA region, the Safety and Operations Unit analyzed fatal and serious injury crash data in the region from 2007 to 2017, following an approach similar to the methodology used in the Ohio SHSP. Trackable emphasis areas at the statewide level were reviewed for their influence on fatalities and serious injuries in the NOACA region. In considering potential emphasis areas for inclusion in the SAVE Plan, weight was given to areas with higher frequencies, areas with high relative severities for

vulnerable users, and areas that appear to be emerging threats of increasing concern in the future.

In addition, the SHSP indicates a large portion of fatal and serious injury (FSI) crashes occur on local roads that are maintained by cities, villages, counties, and townships. For this reason, NOACA’s analysis also considers the percentage of crashes that occur on local roads, with more weight given to emphasis areas where a higher percentage of crashes that occur on roads are under local jurisdiction.

Identifying and documenting trends in the NOACA region is needed to form strategies that have the greatest potential to reduce fatal and serious injury crashes. By identifying and quantifying the magnitude of the problem in each emphasis area, NOACA, its member communities, and its partner agencies are better able to work together to focus the collective resources of the region on the things that are most critical to improving safety for all road users.



A total of 10 emphasis areas are recommended for specific action in this Plan. The following emphasis areas carry equal weight and are based on the combined number of fatalities and serious injuries with the most frequent emphasis area presented first:

- Intersection
- Roadway Departure
- Young Driver
- Speed
- Impaired Driving
- Older Driver
- Motorcycle
- Pedestrian
- Distracted Driving
- Bicycle

The following table summarizes total fatalities and serious injuries in each emphasis area, including a breakdown of the percentage occurring on locally-maintained roads versus state-maintained roads. For those fatalities and serious injuries that occurred on local roads, crashes were analyzed to determine what percentage occurred on roads under municipal, county, or township jurisdictions. The highest percentages of crashes are shown in warm colors, while lower percentages are shown in cooler colors. The results suggest that most fatalities and serious injuries in these emphasis areas occur on locally-maintained roads, and, of those, most occur within municipalities.

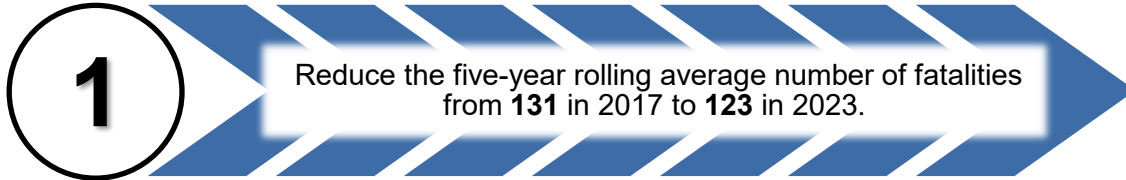
Fatalities and Serious Injuries by Maintenance Responsibility, Local vs. State						
Emphasis Area	Total of Fatalities and Serious Injuries	Local vs. State Roads		Types of Local Roads		
		Local	State	Municipal	County	Township
Intersection	2,337	83%	17%	78%	5%	1%
Roadway Departure	2,026	63%	37%	48%	11%	4%
Younger Driver	1,993	71%	29%	62%	7%	2%
Speed	1,470	71%	29%	62%	7%	3%
Impaired Driving	1,185	71%	29%	59%	8%	4%
Older Driver	1,102	72%	28%	63%	7%	2%
Motorcycle	761	71%	29%	58%	9%	4%
Pedestrian	553	92%	8%	89%	2%	1%
Distracted Driving	452	74%	26%	65%	7%	2%
Bicycle	207	97%	3%	88%	7%	1%

Note: Table reflects crash data in NOACA region for calendar years 2013 through 2017.

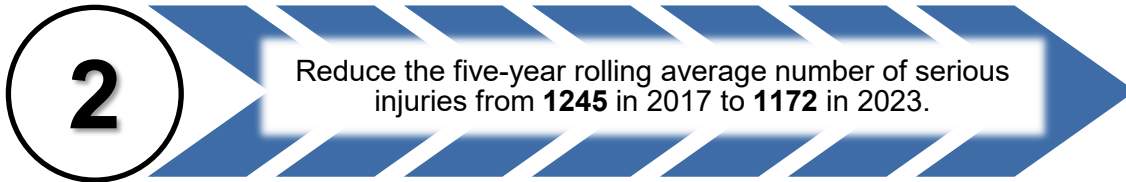
## Overall Plan Performance Measures and Goals

Overall performance measures align with the Ohio SHSP goals by striving to achieve a 1% reduction in the five-year rolling averages for five federally-mandated performance measures established by the FAST Act. The goals for performance measures are based on five-year rolling averages to lessen the variability of annual fluctuations and to provide a better indicator of trends over a longer period of time.

### Number of fatal crashes



### Number of serious injury crashes



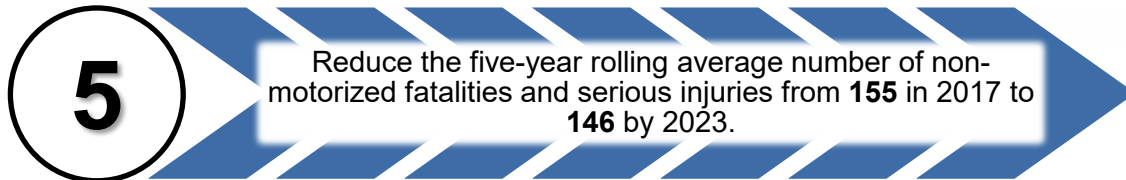
### Rate of fatalities per 100 million vehicle miles traveled



### Rate of serious injuries per 100 million vehicle miles traveled



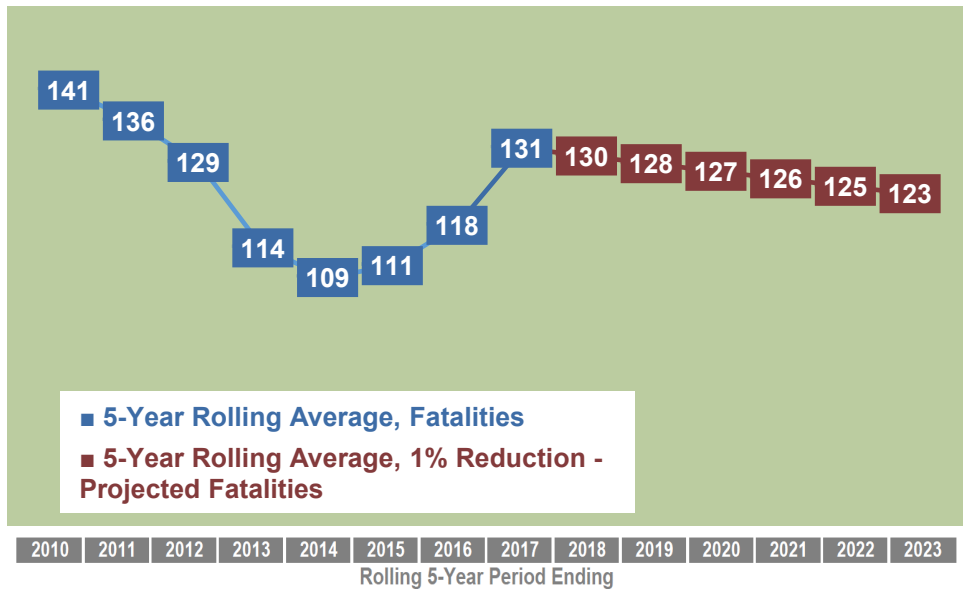
### Number of non-motorized fatalities and serious injury crashes.



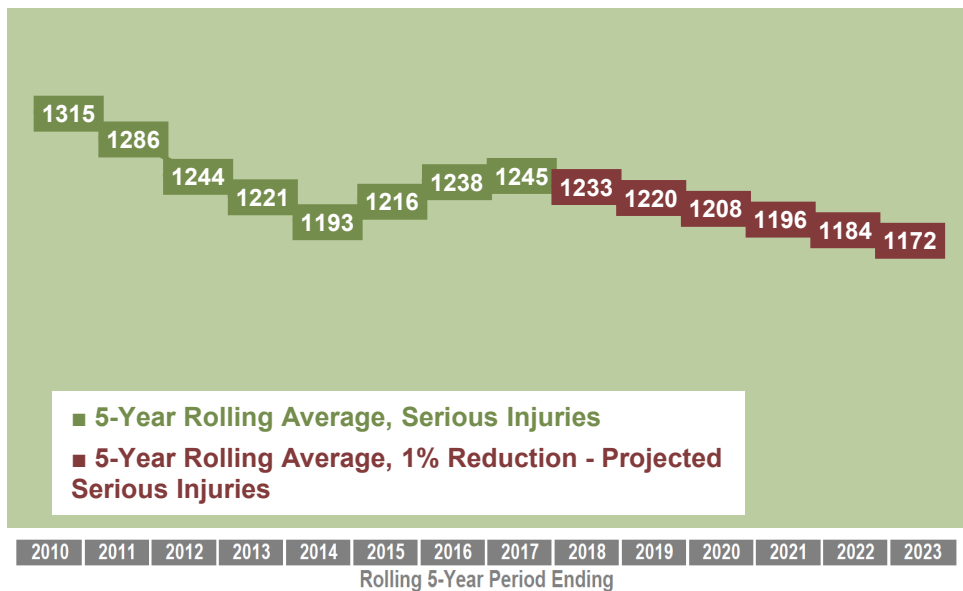
The overall plan target reduction rate of 1% matches the rate that both ODOT and NOACA have committed to in CY2018 and CY2019 for the formal reporting required under the FAST Act, though a more aggressive 2% rate is proposed for emphasis areas to ensure that a substantial multi-agency commitment is made to reducing crashes in the NOACA region under this Plan.

The following figures show performance measure goals for the number of fatalities and serious injuries, based on five-year rolling averages:

### NOACA FATALITY REDUCTION GOALS



### NOACA SERIOUS INJURY REDUCTION GOALS



## Emphasis Area Trends, Targets, and Strategies

In order to meet the goals for the overall plan performance measures in the SAVE Plan, strategies were developed for each of the 10 emphasis areas forming the backbone of this action plan. The strategies consider actions for making roadway improvements as well as for making positive changes to traveler behavior by supporting education and enforcement programs. These strategies form a framework for implementation to be supported with resources allocated in the NOACA Overall Work Program (OWP) and through the collective efforts of state and local partners with common interests in influencing transportation safety.

For each emphasis area, the NOACA Safety and Operations Unit summarized data trends to support plan inclusion and identified performance measures with

targets to assess the progress in individual emphasis areas, acknowledging that achieving progress on Overall Plan Performance Measures can only be achieved by breaking broad goals into smaller, more manageable components.

With input from the SOC, the targets for each emphasis area were selected to achieve a 2% reduction in the five-year rolling averages for each of the 10 emphasis areas

Each of the following pages is devoted to one of the 10 emphasis areas identified by this plan as being important to achieving transportation safety goals in the NOACA region. Action plans for each emphasis area includes performance measures, targets and strategies.



### DID YOU KNOW?

**The 10 emphasis areas are presented in this plan in order based on the total number of fatalities and serious injuries in the NOACA region attributed to them. They are:**

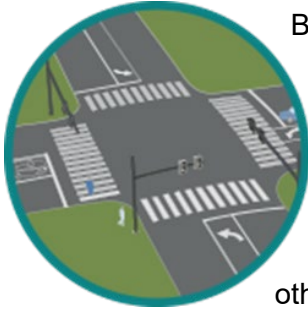
- Intersection
- Roadway Departure
- Young Driver
- Speed
- Impaired Driving
- Older Driver
- Motorcycle
- Pedestrian
- Distracted Driving
- Bicycle

Total numbers are important, but the severity of crashes are also revealed in the percentage of death and injury resulting from the crash. As noted in the table on page 10, **Intersection, Pedestrian and Bicycle** emphasis areas have the highest percent of fatal and serious injury rates on local roads overall, and specifically in municipalities.

# Emphasis Areas



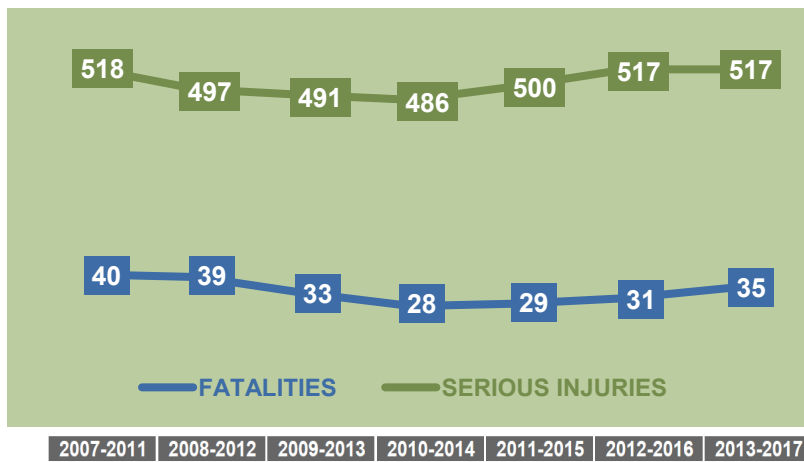
## Emphasis Area: Intersection



Because intersections are roadway areas where traffic movements and mode type converge and conflict, they pose a significant risk to all roadway users, such as motorists, cyclists, pedestrians and motorcycle riders. Intersections require users to process large amounts of information in short periods of time, increasing the risk of users making errors and decisions which may lead to harmful crashes.

More fatalities and serious injuries occur at intersections than at any other emphasis area. Within the NOACA region, 40.0% of all fatalities or serious injuries occurred at intersections between the years 2013 to 2017. Despite a positive trend of less intersection-related crashes, this emphasis area remains important because a high number of crashes are expected to occur at intersections. Intersection crash severity is also a factor in emphasis areas involving Young Drivers and Older Drivers.

### INTERSECTION 5-YR AVERAGE TRENDS



#### Crash Trend for Intersection Fatalities

▼ 13%

5-Year Rolling Average from 2011 to 2017

#### Performance Measures:

Number of fatal crashes at intersections

Number of serious injury crashes at intersections

#### Targets:

2% reduction in the number of fatal crashes at intersections each year between 2017 and 2023, from 35 to 31

2% reduction in the number of serious injury crashes at intersections each year between 2017 and 2023, from 517 to 458

#### Strategies:

Identify high crash intersections and other trends through data collection and analysis

Promote the implementation of proven and low-cost safety countermeasures

Enhance education and enforcement through partnerships with coalitions

## Emphasis Area: Intersection

### Performance Measure #1: Number of fatal crashes at intersections

**TARGET:** 2% reduction in the number of fatal crashes at intersections each year between 2017 and 2023, from 35 to 31

### Performance Measure #2: Number of serious injury crashes at intersections

**TARGET:** 2% reduction in the number of serious injury crashes at intersections each year between 2017 and 2023, from 517 to 458

#### Strategy #1: Identify high crash intersections and other trends through data collection and analysis

Action	Measure
Assist local jurisdictions with identifying high intersection crash locations.	# communities assisted # intersections identified
Work with local jurisdictions to conduct road safety audits at priority intersections	# audits conducted at priority intersections

#### Strategy #2: Promote the implementation of proven and low-cost safety countermeasures

Action	Measure
Support projects included in the TIP that include proven and low-cost safety countermeasures that reduce the number and severity of intersection crashes	# projects included in TIP
Improve signal coordination to reduce stops at intersections through NOACA Signal Timing Optimization (STOP) program	# signals with improved coordination
Identify and prioritize intersections for systemic improvements within region for implementation	# intersections

#### Strategy #3: Enhance education and enforcement through partnerships with coalitions

Action	Measure
Participate in regional and local safety meetings, coalitions and committees	# meetings attended
Promote partner messaging and education related to intersection safety	# messages promoted
Provide and/or promote workshops, training and webinars to improve education, enforcement and planning related to intersection safety	# workshops, training, and webinars promoted or provided

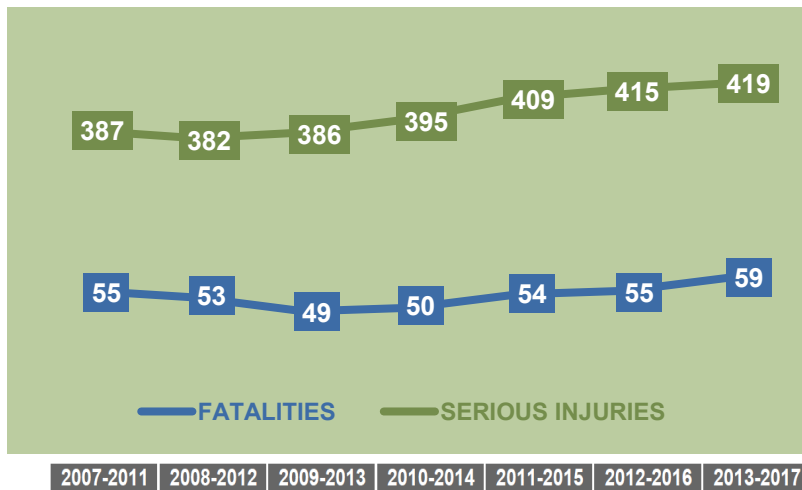
## Emphasis Area: Roadway Departure



The Roadway Departure emphasis area includes types of crashes that occur when a vehicle leaves the travel lane and hits another vehicle head-on or strikes an object. This emphasis area was chosen because roadway departures tend to result in high fatalities and serious injuries. Roadway Departure crashes are the leading cause of traffic deaths in the NOACA region. Of all fatalities between 2013 and 2017, nearly half (299 of 614 fatalities) were the result of roadway departures.

Many of these crashes involve Young Drivers, Impaired Drivers, Speed, and unbelted drivers and passengers.

### ROADWAY DEPARTURE 5-YR AVERAGE TRENDS



Crash Trend for Roadway Departure Fatalities

**▲ 7%**

5-Year Rolling Average from 2011 to 2017

#### Performance Measures:

Number of roadway departure fatalities

Number of roadway departure serious injuries

#### Targets:

2% reduction in roadway departure fatalities each year between 2017 and 2023, from 59 to 52

2% reduction in roadway departure serious injuries each year between 2017 and 2023, from 419 to 371

#### Strategies:

Collect and analyze data to identify high crash locations

Support the implementation of proven and low-cost infrastructure safety countermeasures

Promote safe behaviors that contribute to the reduction of roadway departure fatalities and injuries



## Emphasis Area: Roadway Departure

### Performance Measure #1: Number of roadway departure fatalities

**TARGET:** 2% reduction in roadway departure fatalities each year between 2017 and 2023, from 59 to 52

### Performance Measure #2: Number of roadway departure serious injuries

**TARGET:** 2% reduction in roadway departure serious injuries each year between 2017 and 2023, from 419 to 371

#### Strategy #1: Collect and analyze data to identify high crash locations

Action	Measure
Assist local agencies by indentifying high roadway departure crash locations through network screening	# communities assisted # locations identified

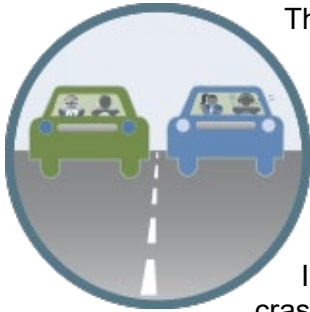
#### Strategy #2: Support the implementation of proven and low-cost infrastructure safety countermeasures

Action	Measure
Support projects in the TIP that include proven and low-cost safety countermeasures that reduce the number and severity of roadway departure crashes	# projects included in TIP
Identify and prioritize locations for systemic improvements within the region for implementation	# locations identified

#### Strategy #3: Promote safe behaviors that contribute to the reduction of roadway departure fatalities and injuries

Action	Measure
Participate in regional and local safety meetings, coalitions and committees	# meetings attended
Promote partner messaging	# messages promoted

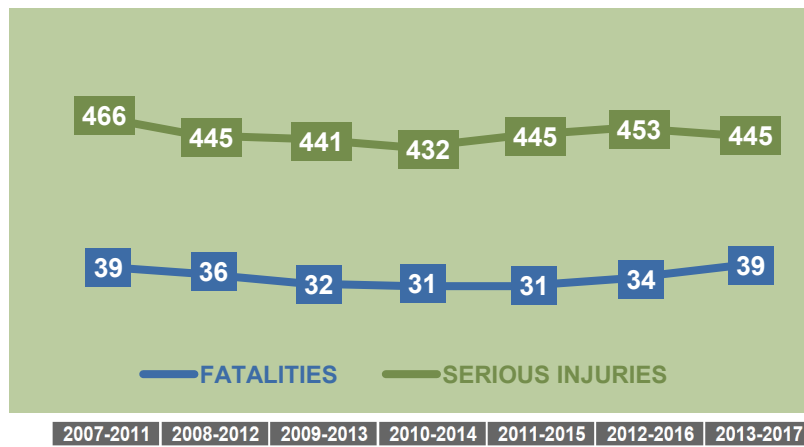
## Emphasis Area: Young Driver



The Young Drivers emphasis area refers to drivers 25 years of age or younger. Research shows young drivers are more likely to drive faster than the speed limit, underestimate dangerous situations, allow shorter distance between their vehicle and another vehicle, and not use a seat belt. The leading causes of young driver crashes include driver inexperience, driving with teen passengers, nighttime driving, not using seat belts, or driving distracted, drowsy, reckless, or impaired.

In the NOACA region, over one third (34.1%) of serious injury and fatal crashes involve drivers 25 years old or younger. The trend of a large number of crashes involving younger drivers is expected to continue in the future.

### YOUNG DRIVER 5-YR AVERAGE TRENDS



### Crash Trend for Young Driver Fatalities

0%

5-Year Rolling Average from 2011 to 2017

#### Performance Measures:

Number of fatal crashes involving a driver 25 years old or younger

Number of serious injury crashes involving a driver 25 years old or younger

#### Targets:

2% reduction in the number of fatal crashes involving a driver 25 years old or younger each year between 2017 and 2023, from 39 to 35

2% reduction in the number of serious injury crashes involving driver 25 years old or younger each year between 2017 and 2023, from 445 to 394

#### Strategies:

Collect and analyze data to understand the locations and types of crashes involving younger drivers

Promote safe behaviors that contribute to the reduction of fatalities and injuries among young drivers

Support efforts to improve the education and skills of younger drivers

## Emphasis Area: Young Driver

### Performance Measure #1: Number of fatal crashes involving a driver 25 years old or younger

**TARGET:** 2% reduction in the number of fatal crashes involving a younger driver each year between 2017 and 2023, from 39 to 35

### Performance Measure #2: Number of serious injury crashes involving a driver 25 years old or younger

**TARGET:** 2% reduction in the number of serious injury crashes involving a younger driver each year between 2017 and 2023, from 445 to 394

#### Strategy #1: Collect and analyze data to understand the locations and types of crashes involving younger drivers

Action	Measure
Identify high youth-related crash locations	# crash locations identified
Identify youth-related crash types or trends	# crash types identified

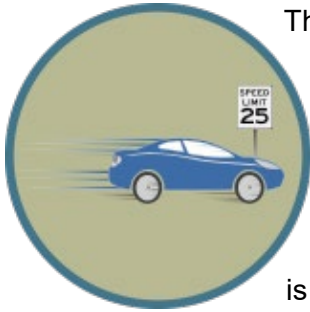
#### Strategy #2: Promote safe behaviors that contribute to the reduction in fatalities and injuries among young drivers

Action	Measure
Participate in regional and local safety meetings, coalitions and committees	# meetings attended
Promote partner messaging	# messages promoted

#### Strategy #3: Support efforts to improve the education and skills of younger drivers

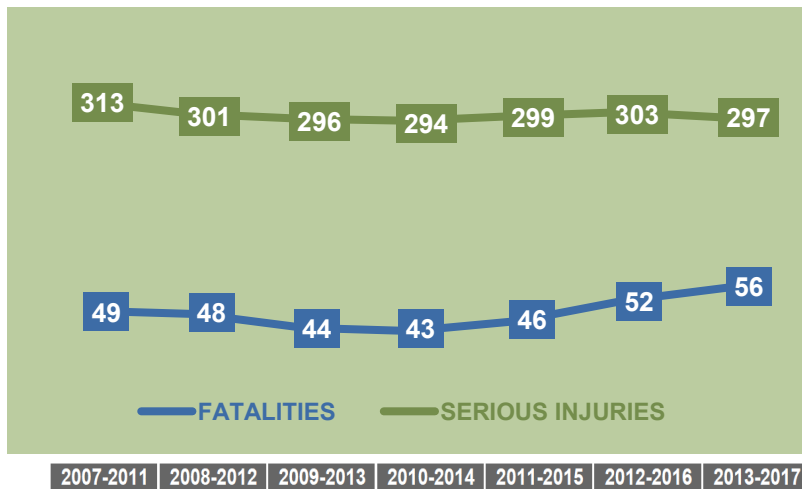
Action	Measure
Support the assessment of school district policies on compliance with Ohio's Graduated Driver's License (GDL) Law	# school policies assessed
Advise local high schools on policy development regarding Ohio Department of Health's GDL education module as a requirement to receive school parking passes	# schools approached, # policies developed
Promote partner education and programming	# education programs promoted

## Emphasis Area: Speed



The Speed emphasis area refers to crashes where drivers are known to operate their vehicles at speeds that are unsafe for the conditions. Speed was identified as a contributing factor in slightly over a quarter (25.1%) of all the region's fatal and serious injury crashes between 2013 and 2017. Crashes involving higher rates of speed are known to be more severe because the energy of vehicles increases exponentially as speed increases, subjecting the people involved in crashes to more harmful forces on impact. Speed is an emphasis area because speeding is a widespread driving behavior that is largely condoned by the public.

### SPEED-RELATED 5-YR AVERAGE TRENDS



Crash Trend for Speed-Related Fatalities

**▲ 14%**

5-Year Rolling Average from 2011 to 2017

#### Performance Measures:

Number of fatal crashes due to speed

Number of serious injury crashes due to speed

#### Targets:

2% reduction in speed-related fatalities each year between 2017 and 2023, from 56 to 50

2% reduction in speed-related serious injuries each year between 2017 and 2023, from 297 to 263

#### Strategies:

Assist communities with implementing countermeasures that promote speed zone compliance

Support jurisdictions with implementing enforcement programs targeting speeding

## Emphasis Area: Speed

### Performance Measure #1: Number of fatal crashes due to speed

**TARGET:** 2% reduction in speed-related fatalities each year between 2017 and 2023, from 56 to 50

### Performance Measure #2: Number of serious injury crashes due to speed

**TARGET:** 2% reduction in speed-related serious injuries each year between 2017 and 2023, from 297 to 263

#### Strategy #1: Assist communities with implementing countermeasures that promote speed zone compliance

Action	Measure
Assist local agencies by identifying speed crash locations through network screening	# communities assisted # locations identified
Encourage local jurisdictions to conduct speed-zone studies, to determine if posted speed limits are appropriate for current conditions	# speed zone studies conducted
Promote Street Supplies to evaluate speed reduction treatments	# program uses
Assist communities with identifying countermeasures that influence speed in school zones	# communities assisted

#### Strategy #2: Support jurisdictions with implementing enforcement programs targeting speeding

Action	Measure
Participate in regional and local safety meetings, coalitions and committees	# meetings attended
Promote partner messaging	# messages promoted

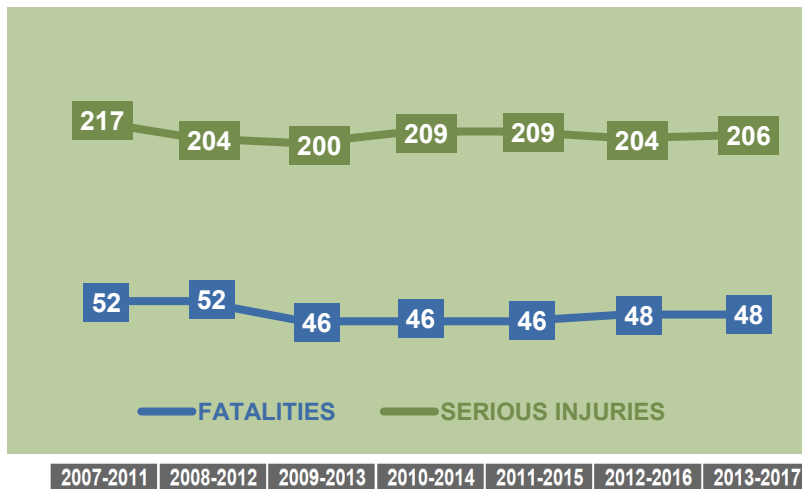
## Emphasis Area: Impaired Driving



Impaired Driving crashes occur when people in a vehicular crash are driving while under the influence of alcohol and/or prescription or illegal drugs. Since 2013, the state of Ohio has been collecting additional drug data on crash reports; the increasing prevalence of drugged driving is why this area is now referred to as Impaired Driving in the Ohio Strategic Highway Safety Plan (SHSP).

As noted in the Ohio SHSP, Roadway Departure Crashes, Young Drivers, and Speed emphasis areas are highly represented in alcohol and/or drug-related crashes. ODOT annual safety performance reporting for the state and MPOs currently summarizes only alcohol-related crashes. For this reason, the graph below only includes an analysis of trends involving alcohol-related crashes.

### ALCOHOL-RELATED 5-YR AVERAGE TRENDS



#### Crash Trend for Alcohol-Related Fatalities

▼ 8%

5-Year Rolling Average from 2011 to 2017

#### Performance Measures:

Number of alcohol and/or drug-related fatalities

Number of alcohol and/or drug-related serious injuries

#### Targets:

2% reduction in alcohol-related fatalities each year between 2017 and 2023, from 48 to 43

2% reduction in alcohol-related serious injuries each year between 2017 and 2023, from 206 to 182

#### Strategies:

Support jurisdictions with implementing enforcement programs that target impaired driving

Promote the use of infrastructure treatments that reduce the frequency and severity of crashes involving impaired drivers

## Emphasis Area: Impaired Driving

### Performance Measure #1: Number of alcohol and/or drug-related fatalities

**TARGET:** 2% reduction in alcohol-related fatalities each year between 2017 and 2023, from 48 to 43

### Performance Measure #2: Number of alcohol and/or drug related serious injuries

**TARGET:** 2% reduction in alcohol-related serious injuries each year between 2017 and 2023, from 206 to 182

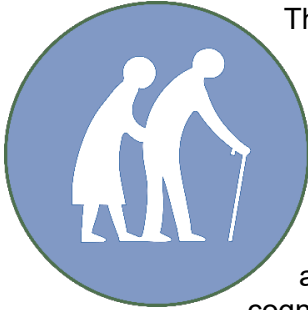
#### Strategy #1: Support jurisdictions with implementing enforcement programs targeting impaired driving

Action	Measure
Assist local jurisdictions with identifying potential corridors for targeted enforcement	# corridors identified
Participate in regional and local safety meetings, coalitions and committees	# meetings attended
Promote partner messaging	# messages promoted

#### Strategy #2: Promote the use of infrastructure treatments that reduce the frequency and severity of crashes involving impaired drivers

Action	Measure
Support projects in the TIP that include countermeasures that reduce the number and severity of impaired driver crashes	# projects included in TIP
Support the implementation of countermeasures to reduce wrong-way crashes	# implementations supported

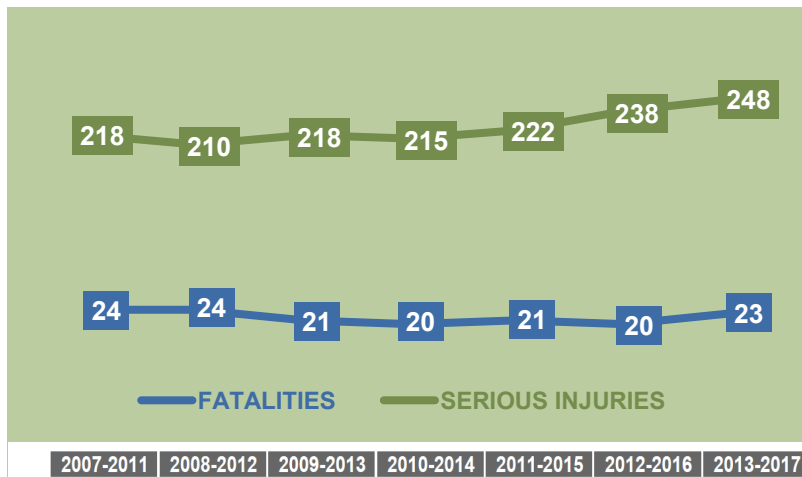
## Emphasis Area: Older Driver



The number of Older Drivers (65 and over) are expected to increase dramatically over the next decade. By 2030, more than 20% of U.S. residents are projected to be 65 years of age or older, compared with 13% in 2010 and 9.8% in 1970. ([U.S. Census Bureau](#)). In 2015, there were 40 million licensed older drivers, a 50% increase from 1999 ([CDC Motor Vehicle Safety, Older Adult Drivers](#)).

As the population ages, our transportation system must be prepared to address safety issues specific to older adults. As we age, our vision, cognitive abilities, reflexes and other physical health conditions can influence our ability to drive safely. In addition, people 65 years old and over and involved in crashes are more susceptible to serious injuries and medical complications that can have fatal results.

### OLDER DRIVER 5-YR AVERAGE TRENDS



Crash Trend for Older Driver Fatalities

▼ 4%

5-Year Rolling Average from 2011 to 2017

#### Performance Measures:

Number of fatal crashes involving drivers 65 years old or older

Number of serious injury crashes involving drivers 65 years old or older

#### Targets:

2% reduction in the number of fatal crashes involving older drivers each year between 2017 and 2023 from 23 to 20

2% reduction in the number of serious injury crashes involving older drivers each year between 2016 and 2023 from 248 to 220

#### Strategies:

Promote outreach efforts that educate older drivers and their caregivers on driving risks and mobility options

Support local senior mobility programs and planning processes



## Emphasis Area: Older Driver

### Performance Measure #1: Number of fatal crashes involving a driver 65 years old or older

**TARGET:** 2% reduction in the number of fatal crashes involving older drivers each year between 2017 and 2023, from 23 to 20

### Performance Measure #2: Number of severe injury crashes involving a driver 65 years old or older

**TARGET:** 2% reduction in the number of serious injury crashes involving older drivers each year between 2017 and 2023, from 248 to 220

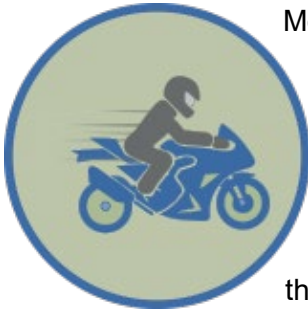
### Strategy #1: Promote outreach efforts that educate older drivers and their caregivers on driving risks and mobility options

Action	Measure
Support regional groups and organizations offering older driver education programs	# partner groups # education programs
Support messages to emphasize the importance of seat belt use targeting older drivers	# messages shared

### Strategy #2: Support local senior mobility programs and planning processes

Action	Measure
Support the development of the NOACA Public Transit-Human Services Coordinated Plan	participation in the plan development

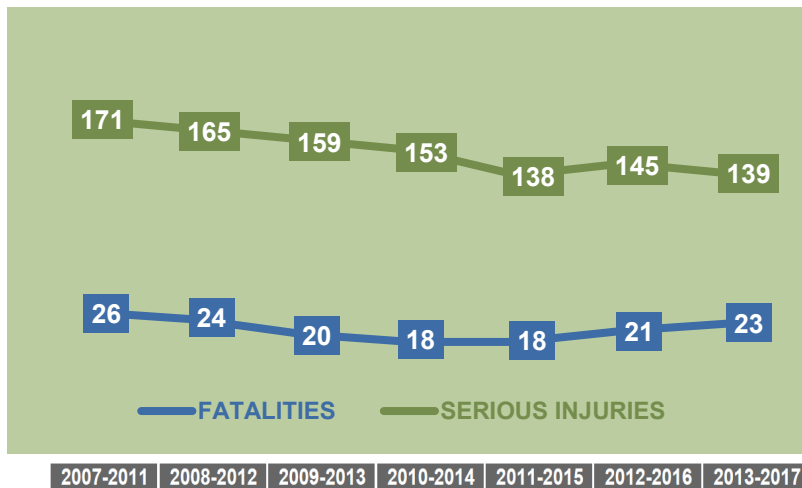
## Emphasis Area: Motorcycle



Motorcycle deaths and serious injuries account for 18.9% of the region's fatalities and 12.3% of serious injuries each year. Because more physical strength and skill are needed to operate a motorcycle than an automobile, inexperienced riders can find themselves unprepared for traffic situations. Further, the drivers and passengers of motorcycles are especially vulnerable to injury since the bike offers little safety protection itself, and because a large fraction of riders prefer not to wear helmets under the belief that it restricts their ability to see and hear their surroundings.

The trend of a large number of fatalities and serious injuries involving motorcycles is expected to continue in the future. The Motorcycle emphasis area is included in the SAVE Plan to promote education awareness efforts, and to improve safety for motorcycle riders because nearly one in five of the region's fatal crashes involve a person who was riding a motorcycle.

### MOTORCYCLE 5-YR AVERAGE TRENDS



#### Crash Trend for Motorcycle Fatalities

▼ 12%

5-Year Rolling Average from 2011 to 2017

#### Performance Measures:

Number of fatal crashes involving a motorcycle

Number of serious injury crashes involving a motorcycle

#### Targets:

2% reduction in motorcycle fatalities each year between 2017 and 2023, from 23 to 20

2% reduction in motorcycle serious injuries each year between 2017 and 2023, from 139 to 123

#### Strategy:

Support partners that provide education and encouragement about safe driving behavior on and around motorcycles

## Emphasis Area: Motorcycle

### Performance Measure #1: Number of fatal crashes involving a motorcycle

**TARGET:** 2% reduction in motorcycle fatalities each year between 2017 and 2023, from 23 to 20

### Performance Measure #2: Number of serious injury crashes involving a motorcycle

**TARGET:** 2% reduction in motorcycle serious injuries each year between 2017 and 2023, from 139 to 123

### Strategy #1: Support partners that provide education and encouragement about safe driving behavior on and around motorcycles

Action	Measure
Assist local agencies by identifying motorcycle crash locations through network screening	# communities assisted # locations identified
Participate in regional and local safety meetings, coalitions and committees	# meetings attended
Support state and national media campaigns that urge drivers to be aware of motorcycles	# media campaigns supported
Support partners that train motorcyclists on safe operation and the benefits of wearing protective equipment	# messages/programs supported
Share information on rider training course offerings and benefits	# training courses shared

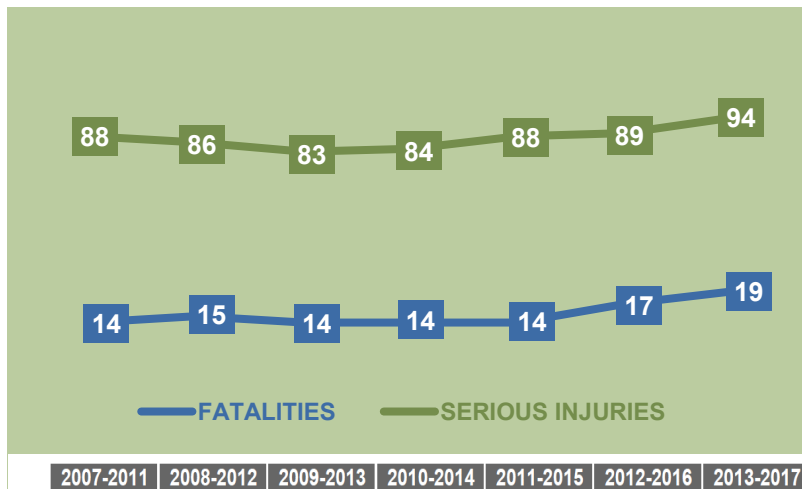
## Emphasis Area: Pedestrian



The Pedestrian emphasis area is included in the SAVE Plan to ensure progress toward non-motorized fatal and serious injury performance measures, and because improving pedestrian safety is closely linked with other NOACA programs that promote active transportation and enhance the livability of communities.

Analysis of the region's crash data showed that pedestrian crashes occur at a disproportionately high rate on local roads in comparison with roads maintained by the state, with almost 92% of all pedestrian fatal and serious injury crashes occurring on locally-maintained roads in the NOACA region. Based on historical trends since 2007, the Pedestrian emphasis area has shown a significant increase in fatalities.

### PEDESTRIAN 5-YR AVERAGE TRENDS



#### Crash Trend for Pedestrian Fatalities

**▲ 36%**

5-Year Rolling Average from 2011 to 2017

#### Performance Measures:

Number of pedestrian fatalities

Number of pedestrian-related serious injuries

#### Targets:

2% reduction in pedestrian fatalities each year between 2017 and 2023, from 19 to 17

2% reduction in pedestrian serious injuries each year between 2017 and 2023, from 94 to 83

#### Strategies:

Collect and analyze data to identify high crash locations

Support the implementation of proven and low-cost infrastructure safety countermeasures

Support education about pedestrian safety practices

Develop and support NOACA's planning programs and other efforts that assist with transportation safety

## Emphasis Area: Pedestrian

### Performance Measure #1: Number of pedestrian fatalities

**TARGET:** 2% reduction in pedestrian fatalities each year between 2017 and 2023, from 19 to 17

### Performance Measure #2: Number of pedestrian-related serious injuries

**TARGET:** 2% reduction in pedestrian serious injuries each year between 2017 and 2023, from 94 to 83

#### Strategy #1: Collect and analyze data to identify high crash locations

Action	Measure
Assist local agencies by identifying pedestrian crash locations through network screening	# communities assisted # locations identified
Collect data on pedestrian traffic to guide project planning decisions	# locations where data is collected

#### Strategy #2: Support the implementation of proven and low-cost infrastructure safety countermeasures

Action	Measure
Support projects in the TIP that include proven and low-cost safety countermeasures that reduce the number and severity of pedestrian crashes	# projects included in TIP
Identify and prioritize locations for systemic improvements within region for implementation	# locations identified
Promote the use of NOACA's Street Supplies program to evaluate pedestrian safety treatments	# messages promoted

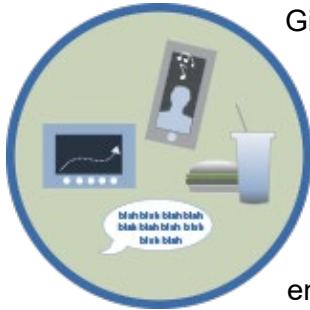
#### Strategy #3: Support education about pedestrian safety practices

Action	Measure
Support ODOT's Your Move campaign encouraging Share the Road principles and other pedestrian safety media campaigns	# messages promoted
Host and attend pedestrian safety training workshops	# workshops hosted, attended
Assist communities with performing walk audits	# walk audits

#### Strategy #4: Develop and support NOACA planning programs and other efforts that assist with transportation safety.

Action	Measure
Develop and implement a regional plan that supports Safe Routes to School (SRTS) programs	plan developed, implementation started
Support the NOACA Regional Bicycle and Pedestrian Master Plan	# meetings attended

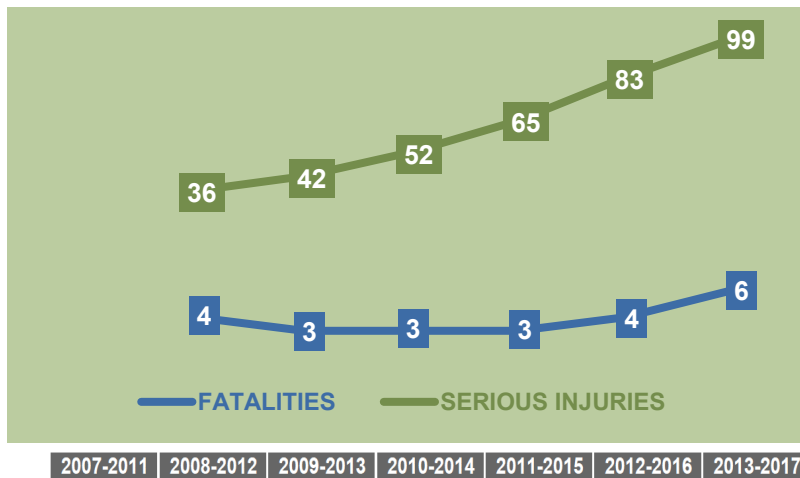
## Emphasis Area: Distracted Driving



Given emerging significance at the state and national level, Distracted Driving, including fatigued driving, is addressed by NOACA as an emerging safety issue in the region, and its effect on other emphasis areas. It is believed that distracted and fatigued driving has been historically under-reported; however, with heightened awareness by law enforcement and throughout society in general, reported incidents are expected to increase. In 2019, the Ohio Department of Public Safety will make additional changes to its crash reporting form (OH-1) to enable enforcement officers to better categorize the types of driver distraction.

NOACA examined crash data available as far back as 2008 to evaluate the five-year rolling averages since the annual ODOT safety performance measure worksheets do not summarize crashes for the Distracted Driving emphasis area.

### DISTRACTED DRIVING 5-YR AVERAGE TRENDS



Crash Trend for Distracted Driving Fatalities

**▲ 50%**

5-Year Rolling Average from 2012 to 2017

#### Performance Measures:

Number of distracted-driver-related fatalities

Number of distracted-driver-related serious injuries

#### Targets:

2% reduction in distracted driving fatalities each year between 2017 and 2023, from 6 to 5

2% reduction in distracted driving serious injuries each year between 2017 and 2023, from 99 to 88

#### Strategies:

Promote outreach strategies that convey a message against distracted driving

Support appropriate policy change that addresses distracted driving

## Emphasis Area: Distracted Driving

### Performance Measure #1: Number of distracted driver-related fatalities

**TARGET:** 2% reduction in distracted driving fatalities each year between 2017 and 2023, from 6 to 5

### Performance Measure #2: Number of distracted driver-related serious injuries

**TARGET:** 2% reduction in distracted driving serious injuries each year between 2017 and 2023, from 99 to 88

Strategy #1: Promote outreach strategies that convey a message against distracted driving	
Action	Measure
Participate in regional and local safety meetings, coalitions and committees	# meetings attended
Promote partner messaging	# messages promoted
Promote distracted driving awareness events conducted at high schools and public venues	# messages promoted

Strategy #2: Support appropriate policy change that addresses distracted driving	
Action	Measure
Support local and state actions that create or strengthen laws which address distracted driving	# actions supported

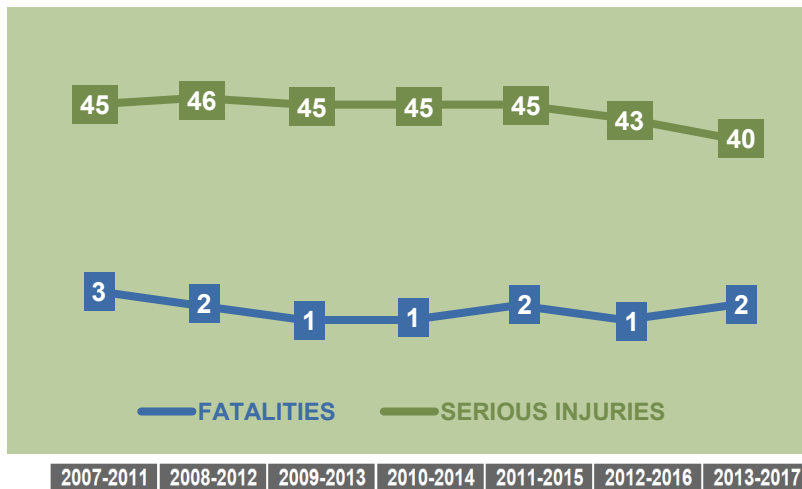
## Emphasis Area: Bicycle



Like the Pedestrian emphasis area, the Bicycle emphasis area is included in the SAVE Plan to ensure progress toward the non-motorized performance measure. Improving safety for bicyclists is closely linked to other NOACA programs that promote active transportation and enhance the livability of communities, which is especially important as more travelers choose cycling as a transportation mode and communities respond to the need for safer bicycling infrastructure.

While the number of fatalities and serious injuries is fewer in comparison with other emphasis areas, the severity of bicycle crashes on a per-crash basis is considerably higher. Sustained action is needed to ensure that the historical trend toward fewer bicycle crashes continues to move toward zero.

### BICYCLE 5-YR AVERAGE TRENDS



#### Crash Trend for Bicycle Fatalities

▼ 33%

5-Year Rolling Average from 2011 to 2017

#### Performance Measures:

Number of cycling fatalities

Number of cycling-related serious injuries

#### Targets:

Reduce the number of cycling fatalities to **zero** by 2023

2% reduction in cycling serious injuries each year between 2017 and 2023, from 40 to 35

#### Strategies:

Collect and analyze data to identify high crash locations

Support the planning and implementation of infrastructure that enhances safety of bicyclists

Support education about pedestrian safety practices

Develop and support NOACA's planning programs and other efforts that assist with transportation safety



## Emphasis Area: Bicycle

### Performance Measure #1: Number of cycling fatalities

**TARGET:** Reduce the number of cycling fatalities to **zero** by 2023

### Performance Measure #2: Number of cycling-related serious injuries

**TARGET:** 2% reduction in cycling serious injuries each year between 2017 and 2023, from 40 to 35

#### Strategy #1: Collect and analyze data to identify high crash locations

Action	Measure
Assist local agencies by identifying cycling crash locations through network screening	# communities assisted # locations identified
Collect data on bicycle traffic to guide project planning decisions	# locations where data is collected

#### Strategy #2: Support the planning and implementation of infrastructure that enhances safety of bicyclists

Action	Measure
Support the facilitation of Complete Street and Smart Growth policies within Cuyahoga County	# policies adopted
Support projects in the TIP that include infrastructure that enhances the safety of bicyclists	# projects included in the TIP
Promote the use of NOACA's Street Supplies program to evaluate bicycle safety treatments	# messages promoted
Support cycling safety as part of safe routes to school plan implementation	# plans implemented

#### Strategy #3: Support programs that provide education about cycling safety practices

Action	Measure
Support ODOT's Your Move campaign that encourages Share the Road principles, and other bicycle safety media campaigns	# messages promoted
Host and attend bicycle safety training workshops	# workshops hosted, attended
Update and distribute NOACA Basic Bicycle Safety education brochure	brochure updated and distributed
Support youth cycling education and encouragement programs	# programs supported
Assist with program to provide helmets, bicycle helmet fitting and HEADS UP concussion education to local schools in high-risk areas	# partnerships # materials distributed

#### Strategy #4: Develop and support NOACA planning programs and other efforts that assist with transportation safety

Action	Measure
Develop and implement a regional plan that supports Safe Routes to School (SRTS) programs	plan developed, implementation started
Support the NOACA Regional Bicycle and Pedestrian Master Plan	# meetings attended
Support NOACA Bicycle Map development, updates and distribution	# meetings attended

## **Section 5: Aiming Forward**

Transportation safety is vital to the economic, livability, and mobility needs of communities in our region. As the metropolitan planning organization (MPO) for the five-county region, NOACA is positioned to collect and analyze data; to apply its knowledge to programs and projects that support its mission, vision and goals; and to share its expertise with communities and partners to attract funding for the betterment of safety in all modes of travel for all users.

The SAVE Plan provides direction that will enable NOACA and others to work together to set goals and achieve the vision this Plan establishes for the region. Five broad measures of safety performance will be used to track the overall progress, with strategies targeted at 10 emphasis areas in most need of safety improvement. These strategies identify actions for building better infrastructure, influencing traveler behavior, and promoting safer policies.

By taking the lead to inform and coordinate the efforts of its safety partners in government and other agencies, NOACA intends to build a strong team committed to working hard to prevent fatalities and serious injuries. Reaching an ultimate goal of zero fatalities and serious injuries may seem like an impossible goal, but through the sustained effort and steady resolve of all, the lives of travelers on our region's highways will be saved.



*Maple Heights Walk to School Day, 2018*

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