

STRATEGIC HIGHWAY SAFETY PLAN 2015 - 2019

TOWARD ZERO DEATHS





COMMONWEALTH OF KENTUCKY
OFFICE OF THE GOVERNOR

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Millions of people travel Kentucky's roadways each year, and their safety is a top priority. Our highway safety mission is an ongoing process of collaboration, coordination, and evaluation by a broad and dedicated group of professionals representing all of the Commonwealth of Kentucky. I am proud of the effort that has produced the 2015 Kentucky Strategic Highway Safety Plan.

This plan outlines clear actions, proposed strategies, and ongoing evaluation to be taken over the next five years to reduce motor vehicle crashes and non-motorized crashes in order to save lives on our roadways. This plan is the culmination of a collaboration of 25 agencies and offices, over 80 stakeholder groups, and over 2,000 hours of project development. It focuses highway safety's "Four E's" - Engineering, Enforcement, Education, and Emergency Response - into feasible safety solutions for all who travel in Kentucky by car, truck, motorcycle, bicycle, foot, commercial vehicle, or other form of transit.

The shared vision of "Toward Zero Deaths" can become our reality through continued collaboration, cooperation, shared knowledge and resources, and the continued implementation of the Strategic Highway Safety Plan. It also requires a commitment by each stakeholder, agency, and member to make highway safety our #1 priority every time we travel.

I extend my sincere thanks and appreciation to the Kentucky Transportation Cabinet, the Governor's Executive Committee on Highway Safety, the Kentucky Office of Highway Safety, the University of Kentucky Transportation Center, our partners in the Federal Highway Administration, National Highway Transportation Safety Administration, and numerous local and community stakeholders across the Commonwealth in their effort to develop the 2015-2019 Kentucky Strategic Highway Safety Plan.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven L. Beshear".

Steven L. Beshear



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Governor's Executive Committee on Highway Safety



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Executive Summary

Kentucky lost 3,537 people in motor vehicle crashes in the five-year period from 2010-2014. The deaths and serious injuries from motor vehicle crashes constitute serious public health and safety concerns that require continuous and focused actions. This document will serve as the blueprint for Kentucky's highway safety efforts from 2015 -2019

Kentucky is participating in a national effort to reduce preventable motor vehicle crashes. Toward Zero Deaths (TZD) is a safety strategy that has been adopted by the Kentucky Transportation Cabinet (KYTC) as a central theme to guide the development of this Strategic Highway Safety Plan (SHSP). As a consensus-based effort, this plan represents a sustainable movement to eliminate highway fatalities, and it requires contributions, collaboration and commitment. The Kentucky Strategic Highway Safety Plan outlines measurable strategic opportunities to reduce fatalities and serious injuries on our roadways. A data-driven approach has been used to identify critical highway safety challenges on Kentucky's highways. This resulted in the identification of 11 emphasis areas to be addressed. These emphasis areas are organized thematically into four categories, as shown below.

1. Behavior Modification

- Aggressive Driving
- Distracted Driving
- Impaired Driving
- Occupant Protection

2. Design and Operations

- Intersections
- Roadway Departure

3. System Management

- Commercial Vehicle Safety
- Incident Management

4. Vulnerable Roadway Users

- High Risk Drivers
- Motorcycles
- Non-Motorized Users

The Governor's Executive Committee on Highway Safety has been established to oversee efforts to improve highway safety. This Committee is an executive-level, multi-agency group of highway safety advocates from varying backgrounds who serve with "one voice" on Kentucky highway safety issues. Responsibility for highway safety deployment strategies in Kentucky resides in the Office of Highway Safety in the Kentucky Transportation Cabinet. This office, in cooperation with agencies across the state, has spearheaded numerous projects in engineering, education, enforcement, and emergency services, in order to reduce the state's collisions, serious injuries, and fatalities.

Traffic records serve as the data window through which progress can be measured and tracked. In addition, traffic records are the source and basis for the data-driven approach taken to identify emphasis area topics and to support evaluation initiatives.

From 2010 to 2014, the period covered by the most recent Strategic Highway Safety Plan, the state made progress in reducing fatalities on its roadways. The fatality rate in Kentucky decreased over this period, with a rate of 1.58 deaths per 100 million vehicle miles (VMT) in 2010, followed by rates of 1.50, 1.58, 1.36 and 1.40 for the years 2011–2014, respectively. The corresponding number of deaths were 760 in 2010, 721 in 2011, 746 in 2012, 638 in 2013, and 672 in 2014. The decline in fatalities between 2010 and 2014 represents an overall decrease of 11.58 percent, or 2.9 percent annually. Serious injuries on public roads in Kentucky also fell, from 4,053 in 2010 to 3,154 in 2014. This was an overall decrease of 22.2 percent, which equates to a 5.6 percent drop annually. Some significant factors that contributed to the reduction in Kentucky's fatalities and serious injuries included: the passage of the primary enforcement seat belt law in 2006, implementation of safety countermeasures, and targeted enforcement activities. However, year-to-year statistics involving crashes and injuries or both can be misleading due to the sporadic nature of crashes.

The primary goal of this updated edition of the Kentucky Strategic Highway Safety Plan is to build on previous successes by establishing measurable goals that can be evaluated consistently and comprehensively. This strategic plan will serve as an umbrella guide to increase coordination, communication, and cooperation among federal, state, and local agencies, along with non-profit organizations and other highway safety advocates. The Governor's Executive Committee on Highway Safety is charged with leading the statewide implementation effort and effectively deploying strategies outlined in this 2015-2019 Plan.



Strategic Highway Safety Plan

PREFACE

This document, submitted on behalf of the Governor's Executive Committee on Highway Safety, serves as a plan to increase coordination, communication, and cooperation among state, federal, and local agencies, and other highway safety advocates.

MISSION

To reduce Kentucky's highway fatalities and serious injuries.

VISION

Through public and private partnerships, achieve the most improved and sustainable downward trend in highway fatalities and serious injuries in the nation.

GOAL

Reduce the 5 year rolling average number of annual highway fatalities to 597 by December 31, 2019, in line with the broader goal of achieving a 50 percent reduction in average annual fatalities between 2014 and 2030 and moving Kentucky roadways Toward Zero Deaths.

TOWARD ZERO DEATHS KENTUCKY

Toward Zero Deaths (TZD) is a national safety strategy that has been adopted by the Kentucky Transportation Cabinet (KYTC), the Federal Highway Administration (FHWA), the National Highway Traffic Safety Administration (NHTSA), and the American Association of State Highway and Transportation Officials (AASHTO) to improve highway safety and ultimately eliminate all deaths on the transportation system. TZD supports a data-driven approach that targets specific areas for improvements and employs proven countermeasures. TZD leverages an interdisciplinary approach by integrating engineering, enforcement, education, and emergency services strategies.

Using the TZD approach, the Commonwealth of Kentucky has developed this Strategic Highway Safety Plan (SHSP), and including input and support from numerous stakeholders and agencies. As a consensus-based effort, this plan represents a concerted movement to eliminate highway fatalities, and it requires contributions, collaboration and commitment. While each organization individually is not involved in the development or implementation of every countermeasure and program discussed in this document, the hope and expectation is that each will find a place and role in this effort.

In accordance with TZD, Kentucky's goal is to reduce the 5 year rolling average number of highway crash fatalities by 50% between 2014 and 2030. This document lays out strategies and performance measures to achieve this goal between the plan's adoption and 2019.

States are required to develop, implement, and evaluate a SHSP as part of the Moving Ahead for Progress in the 21st Century Act (MAP-21). States are expected to develop a plan that focuses the efforts of all state safety partners on the highest priority traffic safety needs. TZD serves as a unifying vision that brings together all stakeholders throughout the U.S. with a role in highway safety. The TZD National Strategy on Highway Safety (the National Strategy) will bring these stakeholders together, and it defines the common vision that will drive their individual and collaborative efforts.

The National Strategy envisions a highway system free of fatalities through a sustained and even accelerated decline in transportation-related deaths and serious injuries. Safety organizations and professionals embracing this vision have agreed to aggressively work toward an intermediate goal specific to their jurisdiction or toward the safety issue on which they focus. Kentucky first adopted the Toward Zero Deaths vision in 2010.

It is anticipated that a major factor in Kentucky's and other states' movement toward zero deaths will be the advancement of automated and connected vehicles. Connected vehicles use various communication technologies to communicate with the driver, other cars on the road, roadside infrastructure, and the "cloud." This technology can be used to not only improve vehicle safety, but also to bolster vehicle efficiency and to reduce commute times. Fully automated, or self-driving, vehicles are defined by the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) as "those in which operation of the vehicle occurs without direct driver input to control the steering, acceleration, and braking and are designed so that the driver is not expected to constantly monitor the roadway while operating in self-driving mode." Incorporating a combination of these technologies will provide another level of safety unlike any achieved in the past and will likely move Kentucky and other states toward the ultimate goal of zero driving-related deaths.



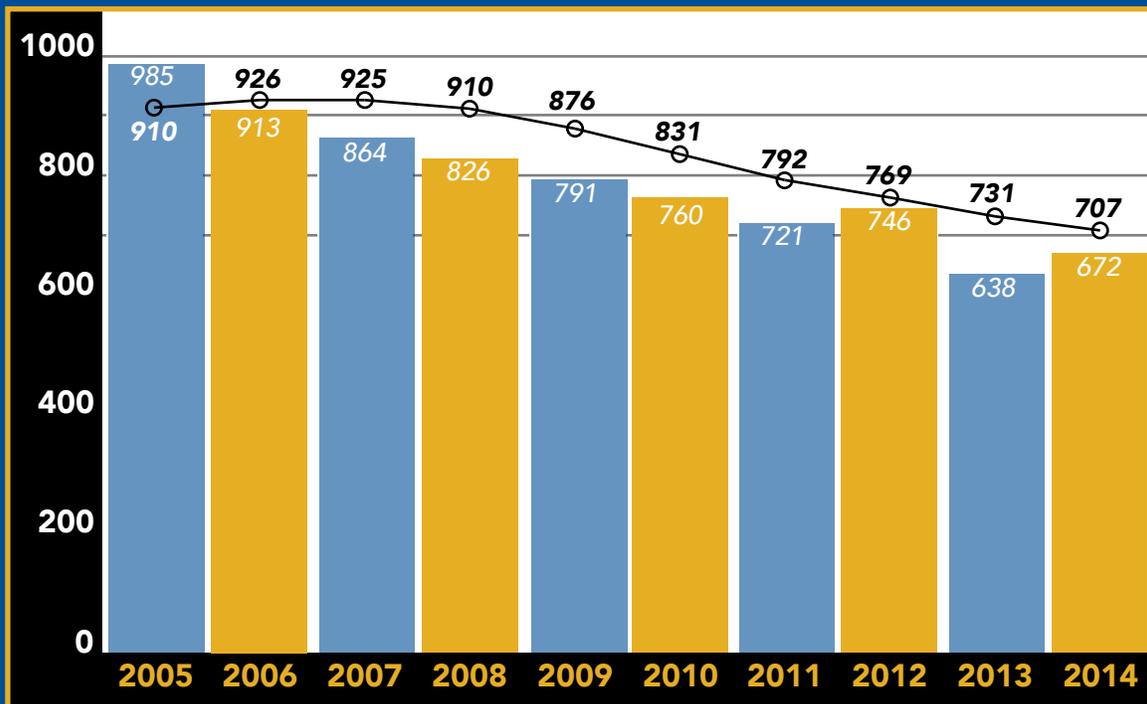
Background & Collision Data Overview

All stakeholders agree that clearly defined emphasis areas, adoption of well-defined objectives, identification and implementation of selected strategies, and evaluation plans are needed to significantly reduce the number of deaths and serious injuries resulting from motor vehicle crashes. The safety partners must embrace the guidance provided by the Kentucky Strategic Highway Safety Plan and commit to coordinating and integrating their planning programs and resources to achieve notable safety advances.

Collision Data Trends

In 2014, Kentucky reported a total of 127,326 collisions, 612 fatal collisions, and 2,313 serious injury collisions. Compared to 2013, there was an increase of 4,068 collisions (123,258 in 2013), an increase of 22 fatal collisions (590 in 2013), and an increase of 19 serious injury collisions (2,294 in 2013). As a result of these collisions, fatalities also increased from 2013 to 2014, though serious injuries decreased. In 2013, 638 people were killed and 3,175 people were seriously injured; however, in 2014, 672 people were killed (an increase of 34) and 3,154 people were seriously injured (a decrease of 21). Based on National Safety Council estimates, the annual economic loss due to 2014 traffic crashes in Kentucky was \$2.1 billion with a total comprehensive cost of \$5.4 billion. Deaths and serious injuries from traffic crashes constitute a significant public health concern.

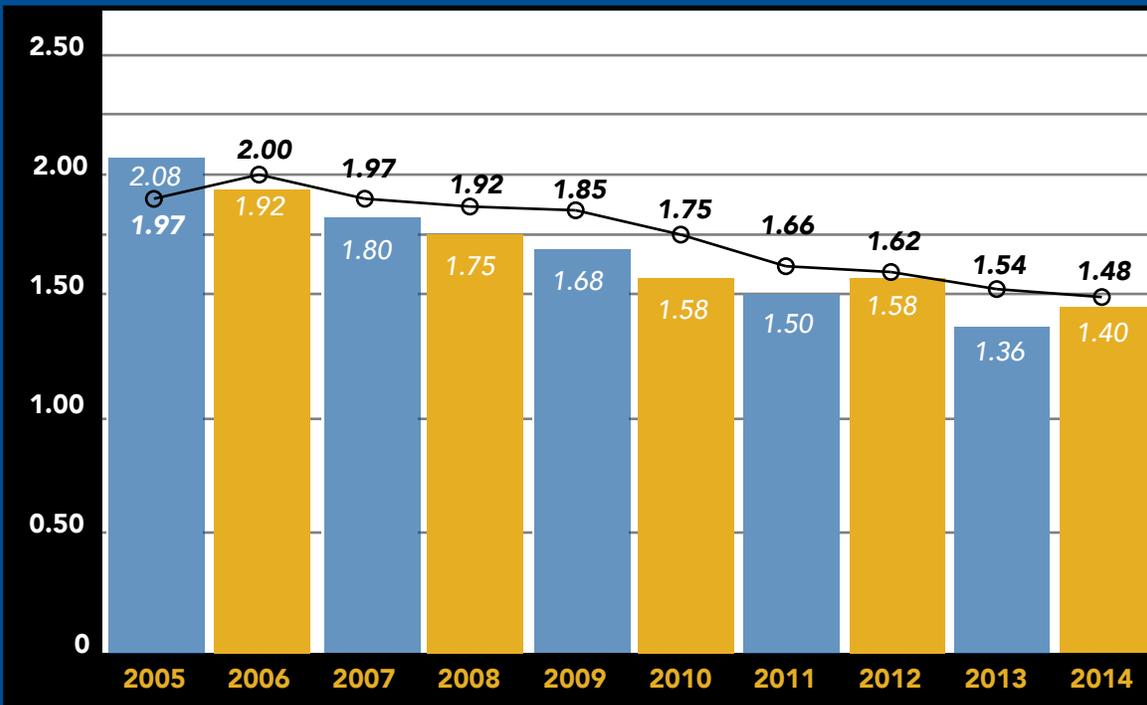
Kentucky Fatality Numbers 2005-2014 (5 year running average in black)



Fatality Rates

From 2005 to 2011, Kentucky's fatality rate steadily declined, followed by a slight increase in 2012 and then again dropping to a rate of 1.36 fatalities per 100 million vehicle miles (MVM) in 2013. Fatalities remained near that level in 2014 (1.40 fatalities per 100 MVM). From 2009 to 2014 there was a steady downward trend in Kentucky's fatality rate. From 2009 to 2013, there were 1.51 fatalities per 100 MVM. But this fell 7.3 percent in 2014 to 1.40 fatalities per 100 MVM. This fatality rate of 1.40 per 100 MVM was still 18.6% higher than the U.S. average rate of 1.18 fatalities per 100 MVM.

Kentucky Fatality Rate Per Million Vehicle-Miles (2005-2014)



Demographics

In 2014 male drivers were involved in 55.8 percent of all collisions and 74.0 percent of all fatal collisions. Female drivers were involved in 44.2 percent of all collisions and 26.0 percent of fatal collisions. By age, 25–34 year-old drivers were involved in the highest percentage of collisions: 21 percent of all collisions and 19 percent of all fatal collisions. Drivers 35–44 were involved in 18 percent of all collisions, while drivers 45–54 were involved in 15 percent of all fatal collisions. Nine percent of teenage drivers (age 16–19) were involved in all collisions and 6 percent in fatal collisions. It is important to note that teenage drivers account for only 7.2 percent of the total population of licensed drivers in Kentucky, including those with a learner permit. There were 61 fatalities in collisions involving a teenage driver; 26 of these fatalities were the teen drivers themselves.

TRENDS IN CRASH STATISTICS

Crash statistics from 2014 and 2010–2013 reveal that the total number of crashes increased by 1.2 percent in 2014 compared to the average number of annual crashes from 2010 to 2013. The number of fatal crashes in 2014 decreased by 7.6 percent compared to the average number of annual fatal crashes from 2010 to 2013. Serious injury crashes declined over 14.2 percent in 2014 from the average number of annual serious injury crashes from 2010 to 2013.

COMPARISON OF CRASH STATISTICS 2010-2014

	2010	2011	2012	2013	2014	Avg. 2010-14
Total Crashes	127,456	127,524	124,844	123,258	127,326	126,082
Fatal Crashes	694	670	694	590	612	652
Fatalities	760	721	746	638	672	707
Serious Injury Crashes	2,926	2,796	2,765	2,294	2,313	2,619
Serious Injuries	4,053	3,873	3,825	3,175	3,154	3,616
Fatal & Serious Injury Crashes	3,620	3,466	3,459	2,884	2,925	3,271
Licensed Drivers (millions)	3.10	3.12	3.17	3.16	3.19	3.15
Registered Vehicles (millions)	3.78	3.76	3.78	3.40	3.83	3.71
Total Vehicle Miles (Billions)	48.1	48.2	47.2	47.1	48.0	47.7
Total Crashes/100 MVM	265	265	264	262	265	264
Fatal Crashes/100 MVM	1.44	1.39	1.47	1.25	1.28	1.37
Fatalities/100 MVM	1.58	1.50	1.58	1.36	1.40	1.48
Serious Injuries/100 MVM	8.43	8.04	8.10	7.74	6.57	7.78

FATAL CRASHES BY TYPE AND AREA OF ROADWAY

In Kentucky, 50 percent of fatal crashes from 2010 to 2014 occurred on state routes, 25 percent on U.S. routes, and 9 percent on interstate highways. In addition, the number of fatalities in rural areas was consistently higher than in the urban areas during that period. From 2010 to 2014, 57 percent of total fatalities occurred on rural roads and 43 percent occurred on urban roads.

KENTUCKY FATAL CRASHES BY TYPE OF ROADWAY 2010-2014

Type of Roadway	2010	2011	2012	2013	2014	% of Total Crashes 2010-14
Interstate	70	57	60	59	45	9%
U.S. Route	168	178	160	146	154	25%
State Route	344	332	352	285	308	50%
Parkway	17	7	23	13	13	2%
County Road	60	59	58	40	55	8%
City Street	29	36	36	41	32	5%
Other	6	1	2	6	5	1%
Total	694	670	691	590	612	100%

*Does not include crashes occurring on parking lots or private property

FATALITIES BY RURAL/URBAN ENVIRONMENT 2010-2014

Environment	2010	2011	2012	2013	2014	% of Total Crashes 2010-14
Rural	429	403	447	352	373	57%
Urban	331	318	299	286	299	43%
Total	760	721	746	638	672	100%



Update Process

The Kentucky Strategic Highway Safety Plan is a plan intended to outline measurable strategic opportunities to reduce fatalities and serious injuries on our roadways.

Updating Kentucky's Strategic Highway Safety Plan is a continuous process that evolves as strategies are implemented and evaluated. A data-driven approach has been used to identify critical highway safety problems on all highways in Kentucky. This approach will continue to identify emphasis areas that need to be addressed. Kentucky's first Strategic Highway Safety Plan was published in 2006 and described methods for accomplishing highway safety goals in 10 strategic areas: Aggressive Driving, Commercial Vehicle Safety, Drive Smart Safety Corridors, Impaired Driving, Incident Management, Roadway Departure, Occupant Protection, Young Drivers, Traffic Records, and Legislative Issues. Three emphasis areas were added in 2010: Distracted Driving, Motorcycles, and Intersections. The 2015-2019 plan includes 11 emphasis areas that have been organized into four categories. Young drivers have been grouped with mature drivers to compose the High Risk Drivers emphasis area, and bicyclists have been grouped with pedestrians to compose the Non-Motorized Users emphasis area.

- **Behavior Modification**

includes Aggressive Driving, Distracted Driving, Impaired Driving, and Occupant Protection.

- **Design and Operations**

includes Intersections and Roadway Departure.

- **System Management**

includes Commercial Vehicle Safety and Incident Management.

- **Vulnerable Roadway Users**

has been updated to include High Risk Drivers, Motorcycles, and Non-Motorized Users.

Emphasis areas include many of the factors that contribute to fatalities in Kentucky. For example, in 2014 nearly two-thirds of the all fatalities were associated with Roadway Departure crashes, while less than 10 percent were associated with Non-Motorized Users crashes. Many of the emphasis areas have overlapping contributing factors or crash types. For instance, a motorcycle crash may also involve an impaired driver who was also operating aggressively in the opinion of an investigating officer responsible for compiling the collision report. The critical factor is that all of those types of crashes with a high representation of fatalities have been included as emphasis areas.

The Kentucky Traffic Records Advisory Committee (KTRAC) monitors the accessibility and accuracy of critical information that improves safety. In addition, analysis of traffic safety information establishes the foundation for the data-driven approach used to identify emphasis area topics and to support evaluation initiatives. Fatalities and serious injury statistics have been compiled for the emphasis areas from 2008 through 2014. In addition to the raw crash numbers, a five-year rolling average has been calculated to show a smoothed pattern over the years, which is likely to be more representative of the observed trends.

Governor's Executive Committee on Highway Safety

The Governor's Executive Committee on Highway Safety was established to combat the ongoing issue of highway fatalities and serious injuries occurring on Kentucky's highways. This Executive Committee is composed of a wide range of multidisciplinary stakeholders with representation from engineering, education, enforcement, and emergency services. The Executive Committee has the responsibility to create a comprehensive and strategic highway safety management program that is data-driven and performance-based. The Executive Committee also coordinates the development and

Consistent with guidance for implementing HSIP, high-risk rural roads (HRRR) are defined as those included in the following functional classes: rural major collector, rural minor collector, and rural local access.

implementation of goals and supporting actions, facilitates the acquisition of needed resources, and provides additional support as needed.

Kentucky Office of Highway Safety

The Kentucky Office of Highway Safety is responsible for the day-to-day operations of Kentucky's highway safety programs. The Office serves as the technical support/resource staff to the Executive Committee. The Office of Highway Safety houses two divisions: Highway Safety Programs and Incident Management. The Division of Highway Safety Programs is responsible for the development, implementation, and evaluation of the Kentucky Strategic Highway Safety Plan. This Division also manages the Safety Education Branch and the Grants Management Branch. The Office provides requested information to the Executive Committee and the Emphasis Area Task Teams and manages and coordinates the Task Teams in the development of various strategies. The Division of Highway Safety Programs focuses on education, outreach, and marketing activities, and coordinates a Crash Corridors approach for applicable emphasis areas. The Division of Incident Management includes the Transportation Operations Center Branch and the Roadway Assistance Branch.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program whose primary purpose (through engineering initiatives) is to significantly reduce the number of fatalities and serious injuries on all public roads. Located within the Transportation Cabinet's Division of Traffic Operations, the Highway Safety Improvement Program's focus is on implementing projects with engineering countermeasures that target the most prevalent crash types in Kentucky. There are two emphasis areas (Intersections and Roadway Departure), which reflect the efforts to address primarily engineering safety issues. A data-driven approach incorporating Highway Safety Manual methodologies is used to identify and prioritize improvement types as well as highway sections with the greatest likelihood of affecting crash frequency and severity.

As part of the Highway Safety Improvement Program's (HSIP) prioritization of safety improvement

projects, high-risk rural roads (HRRR) are included in the problem identification process. Consistent with guidance for implementing HSIP, high-risk rural roads are defined as those included in the following functional classes: rural major collector, rural minor collector, and rural local access. Based on the most recent comparison periods of 5-year rolling averages, fatality rates for crashes on Kentucky's HRRR in Kentucky have not increased; therefore, the special funding rule for those classes of roads is not applicable. However, there is a proactive effort in place to include local roads in the prioritization of HSIP projects. As a requirement of HSIP, funded projects are required to be consistent and aligned with the emphasis areas and strategies identified in the Kentucky Strategic Highway Safety Plan. Another special rule associated with selection and funding of HSIP projects is related to older drivers and pedestrians. This rule does not apply because Kentucky did not experience an increase in per capita fatality and serious injury rates for the most recent comparison periods of 5-year rolling averages. However, as noted in this report, emphasis areas have now been included for older drivers (along with young drivers as part of the High-Risk Drivers area) and pedestrians (along with bicyclists as part of the Non-Motorized Users area). As outlined later in this report, there are specific objectives and strategies to address both older drivers and pedestrians.

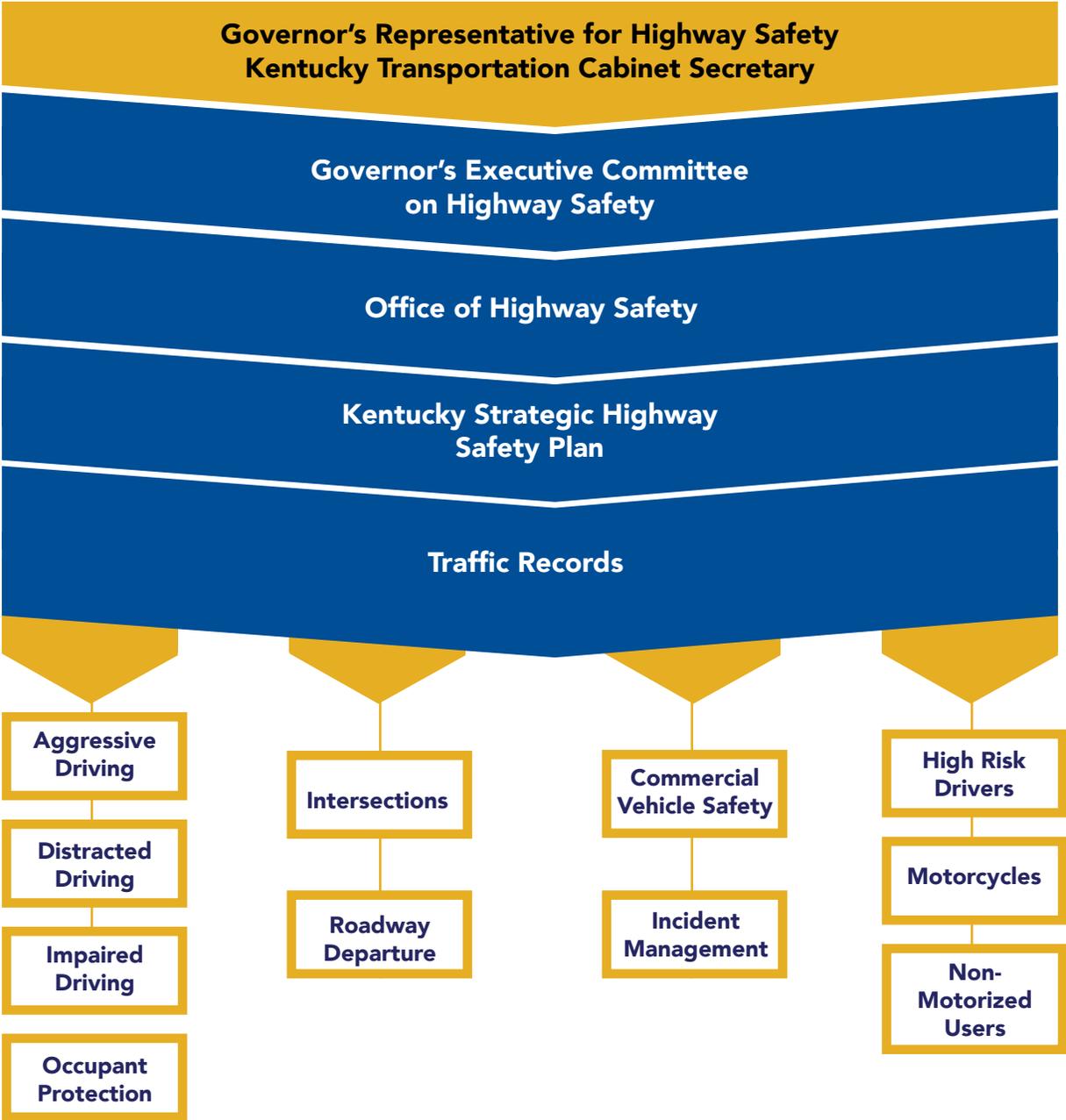
Emphasis Area Task Teams

Emphasis Area Teams are formed by the Executive Committee to address specific concerns for reducing fatalities and serious injuries on Kentucky's highways. As part of initial development of an emphasis area, these teams met to identify or develop innovative strategies through a data-driven process and recommend performance-based action plans. They worked in concert with the Office of Highway Safety to prioritize strategies which were submitted to the Executive Committee for approval. Emphasis teams continue to review strategies relative to documented accomplishments and they either document those strategies as having been completed or retain as part of the update process. In addition, the Office of Highway Safety provides support and data analysis expertise to the Emphasis Area Teams for identification and prioritization of new strategies.

Update Process

Relationship Structure

Kentucky follows the Integrated Safety Management Process, and has the following relationship structure.





Implementation and Evaluation

Successfully implementing this Strategic Highway Safety Plan will result in transportation safety improvements that save lives and reduce serious injuries. As part of the Toward Zero Deaths strategy, Kentucky established the objective to reduce the 5 year rolling average of highway fatalities by 50 percent between 2014 and 2030. Achieving this goal will require leadership, collaboration, communication, data collection, and analysis in order to implement safety improvements and evaluate effectiveness.

Leadership

Sustained, visible, and committed leadership is essential to achieving the goals set forth in this plan. Leaders are responsible for influencing policy direction, setting priorities, and defining performance expectations for those responsible for its implementation. In Kentucky, leadership will be provided by the Governor's Executive Committee on Highway Safety, the Kentucky Office of Highway Safety, and Emphasis Area Task Teams. This plan identifies a lead agency for each emphasis area. Individual champions for the emphasis areas will directly represent or coordinate with these lead agencies in identifying, implementing, and monitoring highway safety strategies.

Collaboration

The Governor's Executive Committee on Highway Safety is composed of a wide range of multidisciplinary stakeholders with representation from engineering, education, enforcement, and emergency services. Additionally, leadership and participation in each of the emphasis areas comes from numerous and varying agencies and individuals who are involved in highway safety. Each Emphasis Area Task Team submits strategies and implementation plans to the Executive Committee for approval. The Office of Highway Safety provides support and data analysis expertise to the Executive Committee to identify and prioritize emphasis areas.

Communication

Emphasis Area Task Teams will meet at least twice a year to review status of strategies being implemented and provide an update on applicable performance measures related to each strategy. Team leaders will formally report each year to the Governor's Executive Committee for Highway Safety on each emphasis area and the status of strategy implementation.

Data Collection and Analysis

Traffic records are data in various forms and formats that are used in safety programs to identify problem areas, support initiation of countermeasures, and verify the effectiveness of programs or specific countermeasures. KTRAC was formed to enhance the effectiveness and application of traffic records. KTRAC pursues this goal by improving access to and accuracy of this information, which in turn can increase road safety. As part of the strategic planning approach, traffic records are critical to the development and advancement of emphasis areas, which have been identified to address and improve highway safety in Kentucky. KTRAC provides support to the Emphasis Area Task Teams in the form of traffic data interpretation or application.

KTRAC conducts traffic records assessment in cooperation with FHWA and the Kentucky Transportation Center (KTC). KTC works with liaison officials from the six core agencies responsible for the collection and maintenance of traffic records databases:

Implementation and Evaluation

1. Collision reporting and analysis (CRASH)—the repository for law enforcement crash reports
2. Vehicle—the vehicle registration system
3. Driver—the repository for information on licensed drivers and their histories
4. Roadway—a database that stores information on the roads in the state highway system
5. Citation/adjudication—a repository containing the records of traffic citations, arrests, and final disposition charges
6. Emergency Medical Services (EMS) Injury Surveillance—the component repositories for data on motor-vehicle related serious injuries and deaths. These can have multiple databases: for example, pre-hospital EMS data, hospital emergency department data, hospital discharge data, trauma registries, and death records.

The liaisons have developed a list of metrics to measure FHWA's performance attributes for each database: timeliness; accuracy, consistency/uniformity, completeness, integration and accessibility. The liaisons, through consultation with KTC, have concluded that many of these are measurable, but collecting some data is either not possible or impractical.

On a continuing basis, officials who oversee five databases provide quantitative data each year on one or more metrics. To date, this includes two years of data along with reports of improvements in some of the traffic records data systems. Taken together the findings and changes below indicate progress toward the goal of a more complete and informative traffic records data system.

1. With completion of the software update, the collision reporting and analysis system database (CRASH) is now significantly more compliant with the Model Minimum Uniform Crash

Criteria (MMUCC)—compliance rising from 68.9 percent to 89.0 percent. A full 95.4 percent of crashes are locatable with the roadway location method. E-reports are entered in 4.8 days and paper reports in 6.2 days and there is no backlog of reports.

2. Citation/adjudication receives 80 percent of its citations on E-Citation and 20 percent on manual citation.

3. The vehicle registration database will be upgraded with the installation of the Kentucky Automated Vehicle Identification System (KAVIS). It will allow checking against Vehicle Identification Number Assist (VINA) and National Motor Vehicle Information Title Information System (NMVTIS) and will permit reporting on the number of times the database is used.

4. The roadway/traffic database is updated within 1 to 2 weeks of a state road highway project being completed. However, updates for local roads takes much longer. Roadway officials established a new process for local road projects that is accelerating reporting of roadchanges. The increase in more timely updates should be quantitatively measureable in the future. Currently, the percent of crashes locatable on state roads is 100 percent. Only 5 percent of the Fundamental Data Elements (FDE) of the Model Inventory Roadway Elements (MIRE) is missing.

5. Emergency Medical Services reports that the between 2014 and 2015, the percentage of services reporting to Kentucky Emergency Medical Services Information System (KEMSIS) rose from 15 to 72.5 percent.

6. The percentage of traffic deaths registered within 90 days has increased from 75 percent in 2010 to 99 percent in 2014. Since the state adopted the Electronic Death Registration (EDR)

reporting system in 2010, the proportion of motor vehicle death reports with missing values has declined substantially, with the exception of the county of incident. Seven of eight incident reports have fewer missing values or no missing values. For example, omission of the injury description in a report has declined from 43.9 percent to 0.9 percent. Hospital Inpatient Metrics are also more complete with the percent of injury records with missing E-codes dropping from 15.7 percent in 2010 to 9.0 percent in 2014.

KTRAC and KTC will continue to work with officials from the traffic record databases to collect data and assist in efforts to improve its timeliness, accuracy, completeness, uniformity, accessibility, and integration, as well as usefulness for safety upgrades.

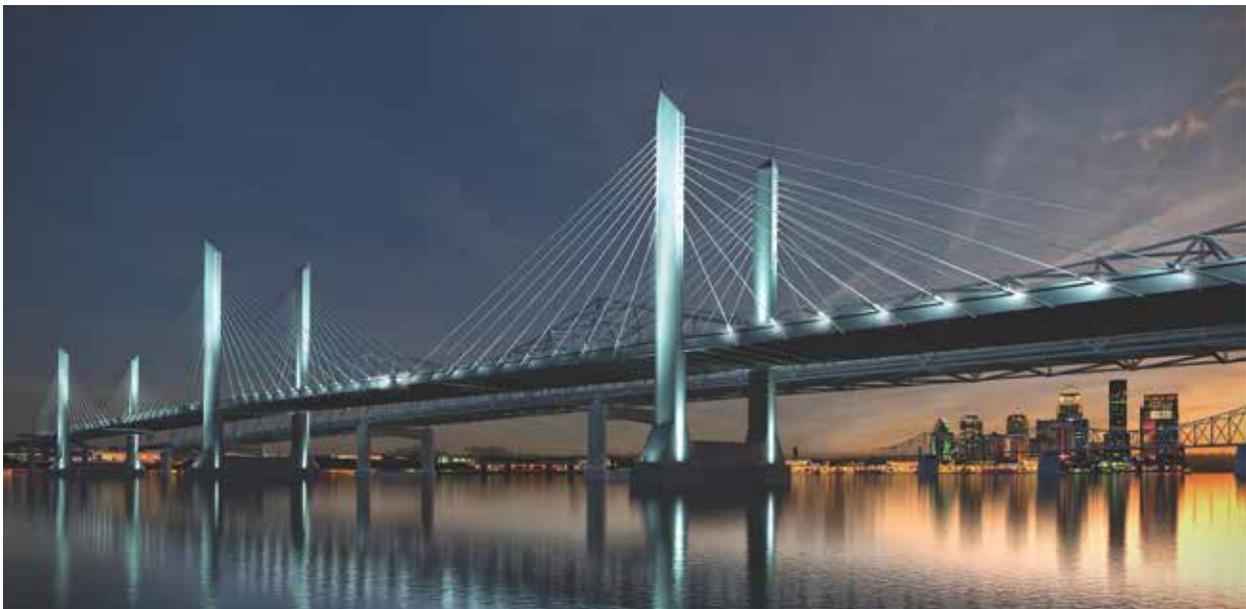
Integration with Other State Plans, Programs and Funding

Guidance intended to supplement Moving Ahead for Progress in the 21st Century Act (MAP-21) requirements was prepared by the Federal Highway Administration (FHWA) in cooperation with the National Highway Traffic Safety Administration (NHTSA), the Federal Motor Carrier Safety Administration (FMCSA), the Federal Transit Administration (FTA), and the Federal Railroad

Administration (FRA). As specified in this guidance, the Kentucky Strategic Highway Safety Plan was developed by the state transportation agency in coordination with other existing state plans, including the following:

- FHWA - Highway Safety Improvement Program (HSIP)
- NHTSA - Highway Safety Plan (HSP)
- FMCSA - Motor Carrier Safety Assistance Program (MCSAP)
- FMCSA - Commercial Vehicle Safety Plan (CVSP)
- Kentucky Traffic Records Assessment Committee (KTRAC) - Strategic Plan for Data Improvement
- Kentucky Transportation Cabinet (KYTC) Statewide and Metropolitan Planning Organizations (MPO) Long Range Transportation Plans

Funding from the above sources will be used to implement both the infrastructure and behavioral strategies and programs contained in this plan. In addition, recommendations from the Kentucky Strategic Highway Safety Plan are expected to influence the priorities set in the aforementioned plans.



Implementation and Evaluation

Action Plans

For each emphasis area, action plans will be developed that describe in detail how each of the strategies will be accomplished through a series of action steps. The plans will identify the responsible persons and agencies and will include performance measures, deadlines, evaluation criteria, and resource requirements. The Governor's Executive Committee on Highway Safety and the Kentucky Office of Highway Safety will monitor the development and implementation of each emphasis area action plan.

Monitoring

Specific targets will be set within each emphasis area and an annual update will be prepared and presented to the Governor's Executive Committee on Highway Safety to track performance. Monitoring and tracking will be used to determine whether strategies should be redirected or selected for increased attention. Crash data will be updated each year to assess the performance of crash-linked emphasis areas relative to TZD's overall objective. Data on fatalities

and serious injuries will be compiled and evaluated in light of the stated performance measures.

Specific attention will be focused on the Impaired Driving emphasis area performance measures through the Kentucky Impaired Driving Task Force (KIDTF). This task force will work with the Kentucky Office of Highway Safety (KOHS) and Kentucky State Police (KSP) to monitor progress toward performance targets outlined in this plan. Crash data will be monitored to determine if the mission of reducing impaired driving fatalities and serious injuries is being executed well. Strategies will be assessed to evaluate whether maximum impact is being achieved. KIDTF will also work with KOHS and KTC to conduct behavioral and attitudinal surveys relating to impaired driving (both drug and alcohol). In addition, the planning committee will work with the Kentucky Administrative Office of the Courts, which maintains DUI case records. Evaluation and monitoring will be ongoing, with the objective of updating or revising strategies as needed to maximize outcomes.



Emphasis Areas





Kentucky's Emphasis Areas

When first published in September 2006, Kentucky's Roadmap to Safer Highways focused on targeted emphasis areas and on the creation of teams to address strategies and initiatives within each area. This update to the strategic plan, titled Toward ZERO Deaths, includes 11 emphasis areas divided into four categories:

Behavior Modifications

- *Aggressive Driving*
- *Distracted Driving*
- *Impaired Driving*
- *Occupant Protection*

Design and Operations

- *Intersections*
- *Roadway Departure*

System Management

- *Commercial Vehicle Safety*
- *Incident Management*

Vulnerable Roadway Users

- *High Risk Drivers*
- *Motorcycles*
- *Non-Motorized Users*



THE FOUR 'E's

Strategies for addressing the Emphasis Areas are categorized as they pertain to the Four 'E's of Road Safety:



Education



Emergency Services



Enforcement



Engineering

The following pages include a qualitative and/or quantitative description of the current status and the progress made in each of these emphasis areas through 2014.

KENTUCKY EMPHASIS AREA STATISTICS 2014

	Collisions		Serious Injury Collisions		Fatal Collisions	
	Number	% of Total	Number	% of Total	Number	% of Total
State Total	127,326		2,313		612	
Aggressive Driving	32,374	25.4%	769	33.2%	194	31.7%
Commercial Motor Vehicles	5,892	4.6%	135	5.8%	62	10.1%
Distracted Driving	53,547	42.1%	834	36.1%	155	25.3%
Impaired Driving	5,359	4.2%	335	14.5%	128	20.9%
Intersections	32,278	25.4%	602	26%	110	18.0%
Motorcycles	1,658	1.3%	253	10.9%	74	12.1%
Non-Motorized Users	1,512	1.2%	193	8.3%	61	10.0%
Roadway Departures	39,305	30.9%	1,348	58.3%	408	66.7%
High-Risk Drivers	43,055	33.8%	779	33.7%	199	32.5%



AGGRESSIVE DRIVING

Behavior Modifications



Emphasis Area Lead Agency:

Kentucky State Police

KENTUCKY AGGRESSIVE DRIVING STATISTICS 2008 -2014

YEAR	All Collisions	SERIOUS INJURIES		FATALITIES	
		Total	5 Year Average	Total	5 Year Average
2008	31,395	1,582	1,896	282	337
2009	31,649	1,504	1,768	260	312
2010	32,029	1,342	1,616	245	286
2011	32,688	1,351	1,491	242	266
2012	31,532	1,268	1,409	219	250
2013	31,641	1,143	1,322	225	238
2014	32,374	1,063	1,233	218	230

Overview

Aggressive driving is generally defined as actions by drivers that result in adverse safety effects on other drivers and contribute to crashes, which are coded as follows: failure to yield right of way, following too close, too fast for conditions, disregarding traffic control, exceeding stated speed limit, improper passing, and weaving in traffic.

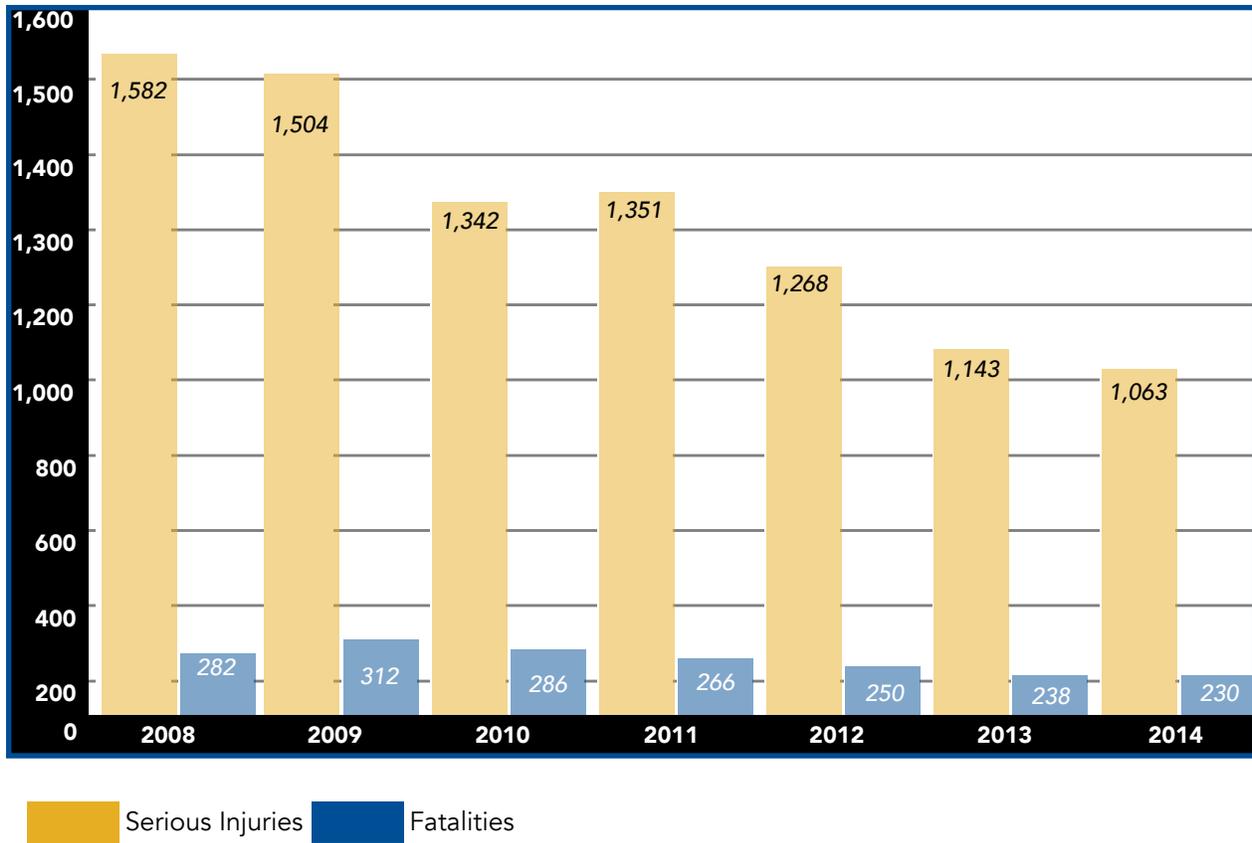
Aggressive driving is one of the leading contributors to fatal traffic incidents on Kentucky's roadway system. There were 3,537 roadway fatalities from 2010 through 2014, with 1,149 (32.5%) fatalities resulting from an aggressive driver involvement.

The 5-year rolling average of aggressive driving fatalities declined from 286 in 2010 to 230 in 2014. The 5-year rolling average of aggressive driving serious injuries also fell, from 1,616 in 2010 to 1,233 in 2014.



AGGRESSIVE DRIVING

KENTUCKY AGGRESSIVE DRIVING STATISTICS 2008 -2014



GOAL AND OBJECTIVE:

The goal of this emphasis area is to determine the level of aggressive driving within Kentucky and to implement strategies towards reducing aggressive driving.

To measure progress toward this goal, an objective has been set to reduce the 5 year rolling average number of aggressive driving-related fatalities to 194 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall Toward Zero Deaths initiative.

EMPHASIS AREA STRATEGIES:



Education Strategies

- Continue to address the issues and promote the dangers of aggressive driving behavior through educational programs and through the purchase of media.



Enforcement Strategies

- Continue to enhance and promote highly publicized and high-visibility enforcement programs.
- Conduct directed patrols in areas based on citizen complaints of aggressive driving.
- Conduct directed patrols in areas based on law enforcement knowledge of aggressive driving behaviors.
- Conduct directed patrols in areas based on collision data related to aggressive driving.
- Facilitate information sharing between state and local law enforcement agencies to address aggressive driving.

Emphasis Area Performance Measures:

- Number of aggressive driving-related fatalities.
- Number of aggressive driving-related serious injuries.



DISTRACTED DRIVING

Behavior Modifications



Emphasis Area Lead Agency:*Kentucky Office of Highway Safety, KYTC***KENTUCKY DISTRACTED DRIVING STATISTICS 2008 -2014**

YEAR	All Collisions	SERIOUS INJURIES		FATALITIES	
		Total	5 Year Average	Total	5 Year Average
2008	50,749	1,583	1,828	185	210
2009	54,435	1,584	1,761	203	211
2010	54,450	1,458	1,657	179	200
2011	53,725	1,343	1,551	177	187
2012	53,509	1,367	1,467	174	184
2013	52,687	1,117	1,374	164	179
2014	53,547	1,090	1,275	169	173

Overview

Distracted driving is any activity by the operator of a motor vehicle that has the potential to distract the operator from the primary task of driving, this increasing the risk of crashing. In Kentucky and across the U.S., the usage of mobile phones has become a significant contributor to distracted driving. Text messaging, in particular, is a cause for concern because it affects drivers in three ways: it takes eyes off the road, hands off the wheel, and mind off the task of driving.

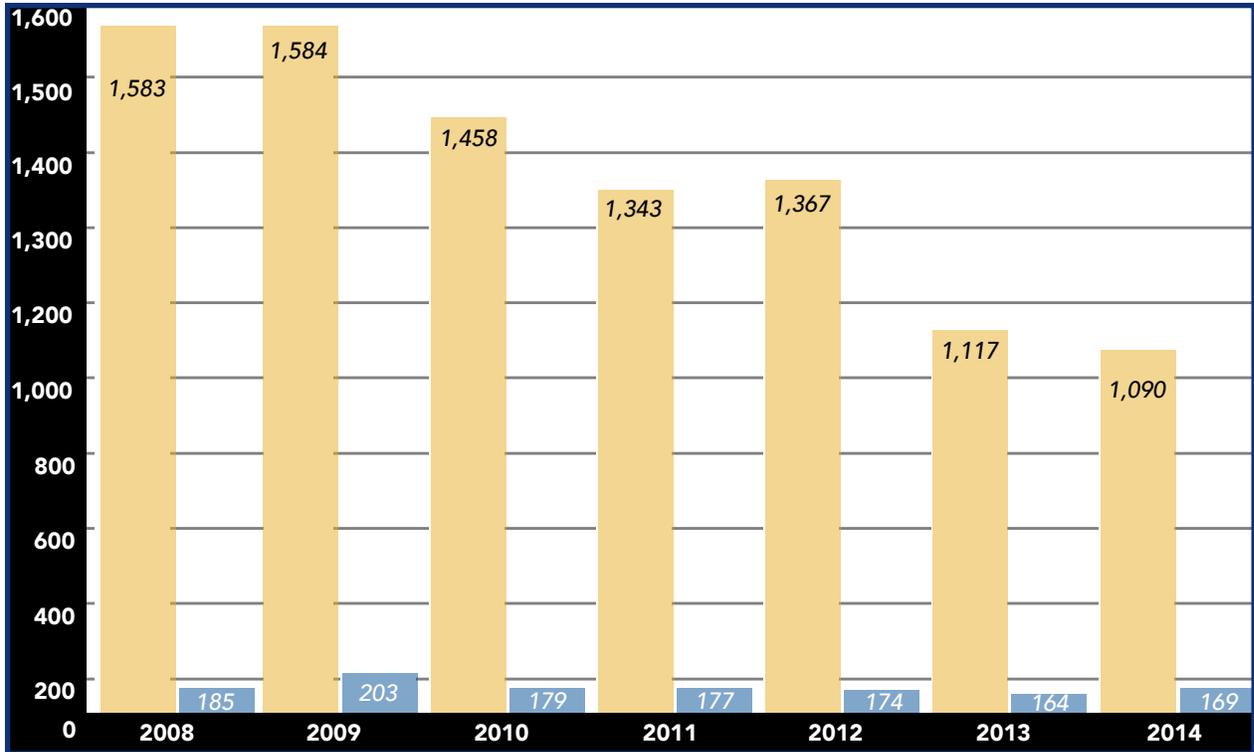
Distracted driving is one of the leading contributors to fatal traffic incidents on Kentucky's roadway system. There were 3,537 roadway fatalities from 2010 through 2014, with 863 (24.4%) fatalities resulting from a distracted driver involvement.

The 5-year rolling average of distracted driving fatalities dropped from 200 in 2010 to 173 in 2014. The 5-year rolling average of distracted driving serious injuries also declined, from 1,657 in 2010 to 1,275 in 2014.



DISTRACTED DRIVING

KENTUCKY DISTRACTED DRIVING STATISTICS 2008 -2014



■ Serious Injuries ■ Fatalities

GOAL AND OBJECTIVE:

The goal of this emphasis area is to reduce the number of crashes, serious injuries, and fatalities related to driver distractions.

To measure progress toward this goal, an objective has been set to reduce the 5 year rolling average number of distracted driving-related fatalities to 146 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall Toward Zero Deaths initiative.

The following strategies have been identified to support this effort.

EMPHASIS AREA STRATEGIES:



Education Strategies

- Deliver educational programs in schools and community venues to demonstrate and reinforce the dangers of distracted driving.
- Use public figures in public service announcements on distracted driving.
- Advocate to improve distracted driving law to become a hands free state regarding cell phone usage while driving.



Enforcement Strategies

- Encourage and support (through yearly initiatives) increased law enforcement activities that reduce distracted driving.



Engineering Strategies

- Increase the total miles of shoulder and center line rumble strips and cable barriers.

Emphasis Area Performance Measures:

- Number of distracted driving-related fatalities.
- Number of distracted driving-related serious injuries.



IMPAIRED DRIVING

Behavior Modifications



Emphasis Area Lead Agency:

Office of Attorney General

KENTUCKY IMPAIRED DRIVING STATISTICS 2008 -2014

YEAR	All Collisions	SERIOUS INJURIES		FATALITIES	
		Total	5 Year Average	Total	5 Year Average
2008	5,897	635	782	166	206
2009	5,992	671	732	162	190
2010	5,858	533	669	154	173
2011	5,607	521	605	147	164
2012	5,748	558	584	145	155
2013	5,501	450	547	130	148
2014	5,359	449	502	138	143

Overview

Impaired Driving is recognized as driving a motor vehicle under the influence of alcohol or narcotics. Driving deaths caused by alcohol impairment account for about a third of all motor vehicle traffic deaths in the U.S. As the blood alcohol concentration (BAC) level goes up in the human body, it produces effects such as loss of judgment, altered mood, reduced muscle control and deteriorating reaction times. These result in a decline in visual functions and multitasking, reduced concentration, impaired perception, and an inability to respond quickly to emergencies.

Impaired driving is one of the leading causes of fatal traffic incidents on Kentucky's roadway system. There were 3,537 roadway fatalities from 2010 through 2014, with 714 (20.2%) fatalities resulting from an impaired driver involvement.

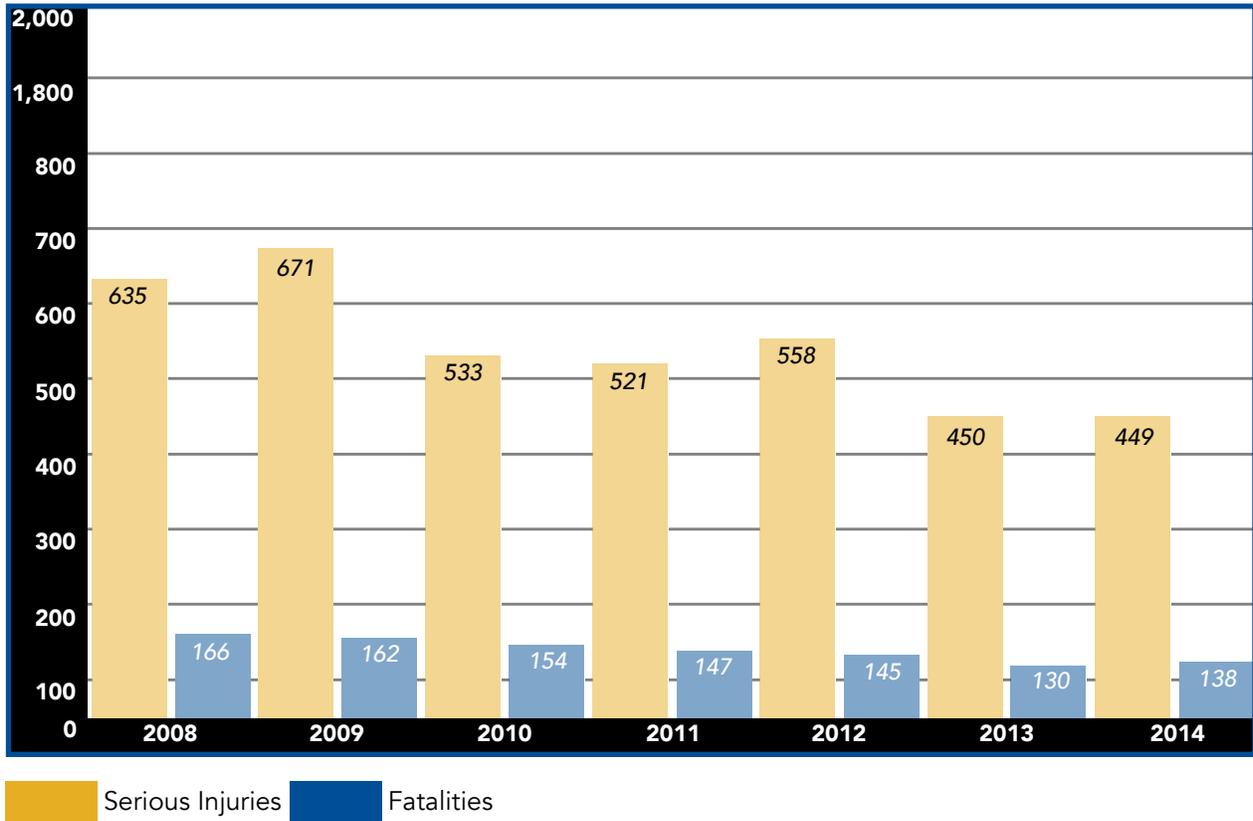
The 5-year rolling average of impaired driving fatalities fell from 173 in 2010 to 143 in 2014. The 5-year rolling average of impaired driving serious injuries also declined, from 669 in 2010 to 502 in 2014.

The majority (67.9%) of impaired driving fatalities occurred on rural roads. Kentucky's focus on impaired driving will target the top 40 weighted counties. This encompasses one-third of the state's counties and more than half of its population.



IMPAIRED DRIVING

KENTUCKY IMPAIRED DRIVING STATISTICS 2008 -2014



GOAL AND OBJECTIVE:

The goal of this emphasis area is to implement counter measures to reduce the frequency and severity of impaired driving related collisions.

To measure progress toward this goal, an objective has been set to reduce the 5 year rolling average number of impaired driving-related fatalities to 120 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall Toward Zero Deaths initiative.

The following strategies have been identified to support this effort.

EMPHASIS AREA STRATEGIES:



Education Strategies

Maintain and/or improve the following programs:

- **Communication Program:** Kentucky is committed to providing high levels of media and public information that documents impaired driver enforcement operations. High visibility media messages are developed to reach targeted audiences and to generate widespread message exposure. Public information and education campaigns will occur in conjunction with law enforcement or public event activities to maximize their impact on the public, whether to change behavior or increase awareness of efforts.
- **Alcoholic Beverage Control (ABC) Server Training in Alcohol Regulations (STAR):** Offers a responsible beverage server training course, which is mandated in 65 county and municipal areas that have alcohol service. The program trains attendees on the responsibilities of the licensee, who can be held both criminally and civilly liable if they violate state law.
- **Drive Sober Kentucky Smartphone App:** Includes a BAC estimator based on gender, weight, and alcohol consumption over a specified time period; a link to current DUI laws; a ride finder to keep impaired drivers off the road; and a "Report a DUI" button to call Kentucky State Police when a user spots an impaired driver.



Enforcement Strategies

Maintain and/or improve the following programs:

- **Operation Zero Tolerance:** Enforcement directed toward the owners and employees of businesses licensed to sell alcoholic beverages in the Commonwealth that may be carelessly or intentionally selling alcohol to minors.
- **Drug Recognition Expert:** All DREs, regardless of agency, follow a 12-step systematic and standardized process that incorporates a drug classification system based on the premise that that each substance in a drug category produces similar signs and symptoms.
- **Advanced Roadside Impaired Driving Enforcement:** Created to address the gap in training between the Standardized Field Sobriety Testing (SFST) and the Drug Evaluation and Classification (DEC) Program. It provides officers with general knowledge related to drug impairment and promotes the use of DREs in states that have the DEC Program.
- **Alcohol Interlocks:** Recidivism rates among offenders with alcohol interlocks installed is 75 percent lower than drivers who did not have devices installed. In Kentucky, ignition interlocks are ordered at the discretion of the courts, and only after a one-year suspension.

IMPAIRED DRIVING

EMPHASIS AREA STRATEGIES:



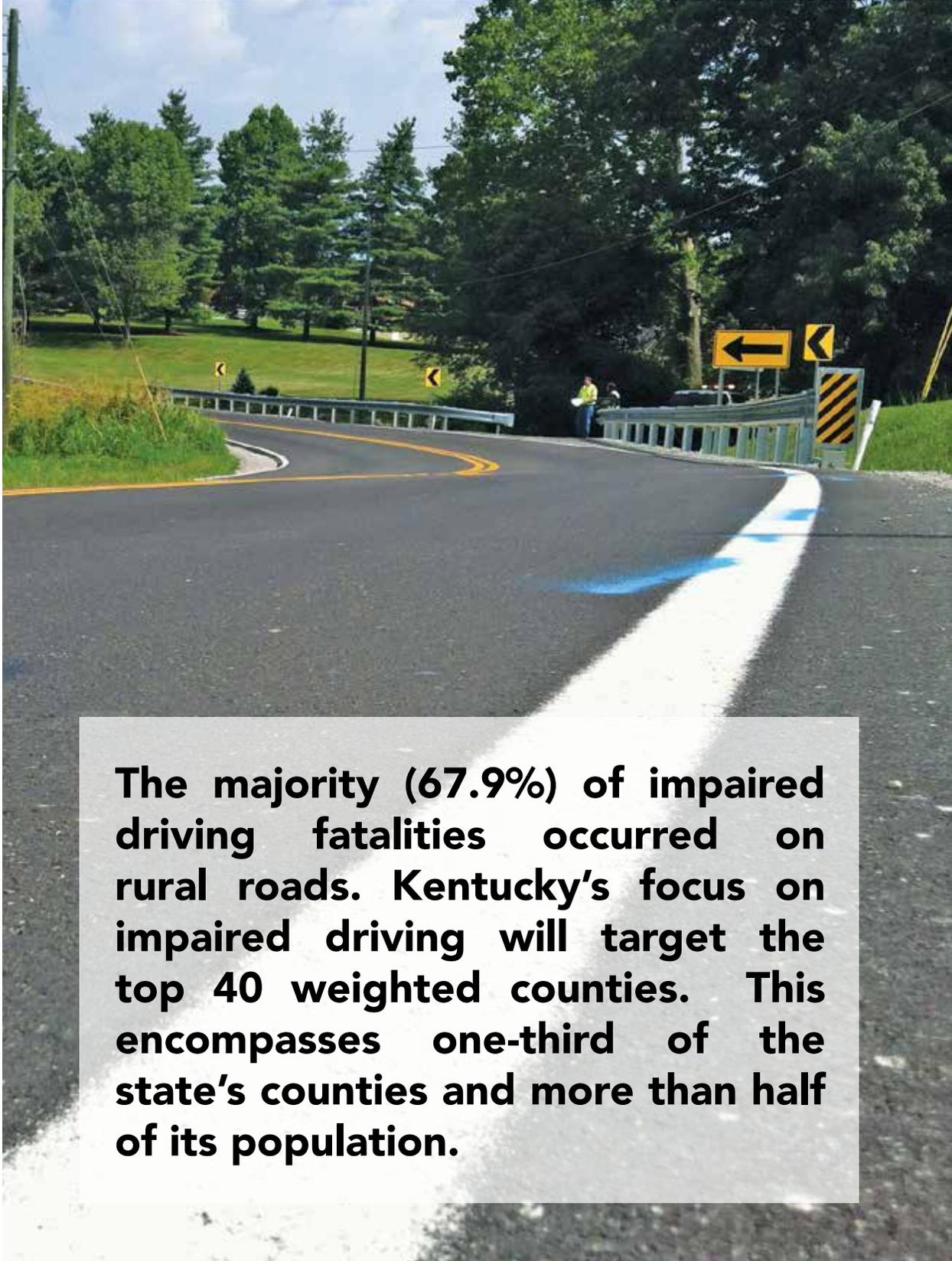
Enforcement Strategies (cont.)

- **Traffic Safety Resource Prosecutor:** The TSRP provides critical support to Kentucky's prosecutors, law enforcement officers, judges and other traffic safety professionals by offering expert knowledge on impaired driving. The continued support for the TSRP is an essential element of this plan, and training courses include:
 - "Prosecuting the Drugged Driver"
 - "DUI Trial Skills Training"
 - "Prosecuting the Impaired Driver"
 - "Lethal Weapon; DWI Homicide"

Emphasis Area Performance Measures:

- Number of impaired driving-related fatalities.
- Number of impaired driving-related serious injuries.

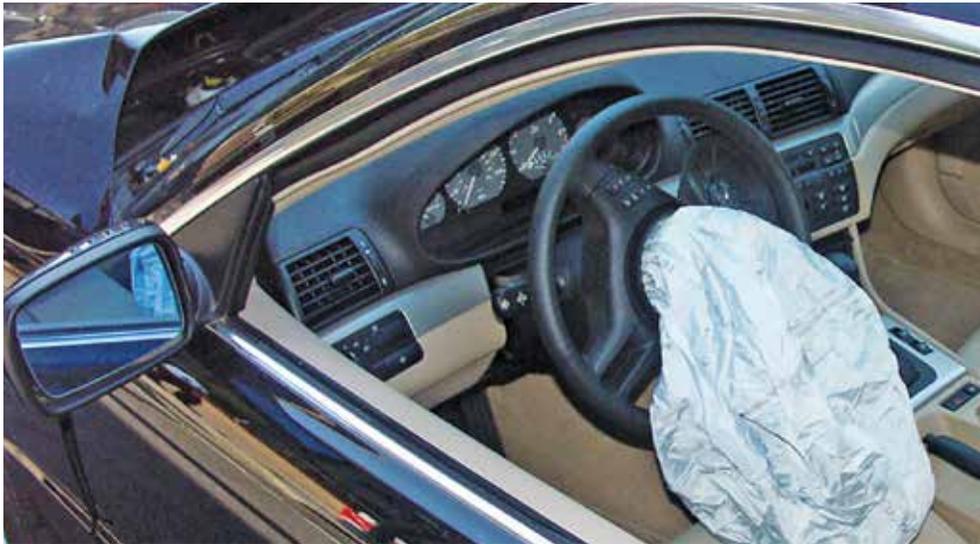




The majority (67.9%) of impaired driving fatalities occurred on rural roads. Kentucky's focus on impaired driving will target the top 40 weighted counties. This encompasses one-third of the state's counties and more than half of its population.

OCCUPANT PROTECTION

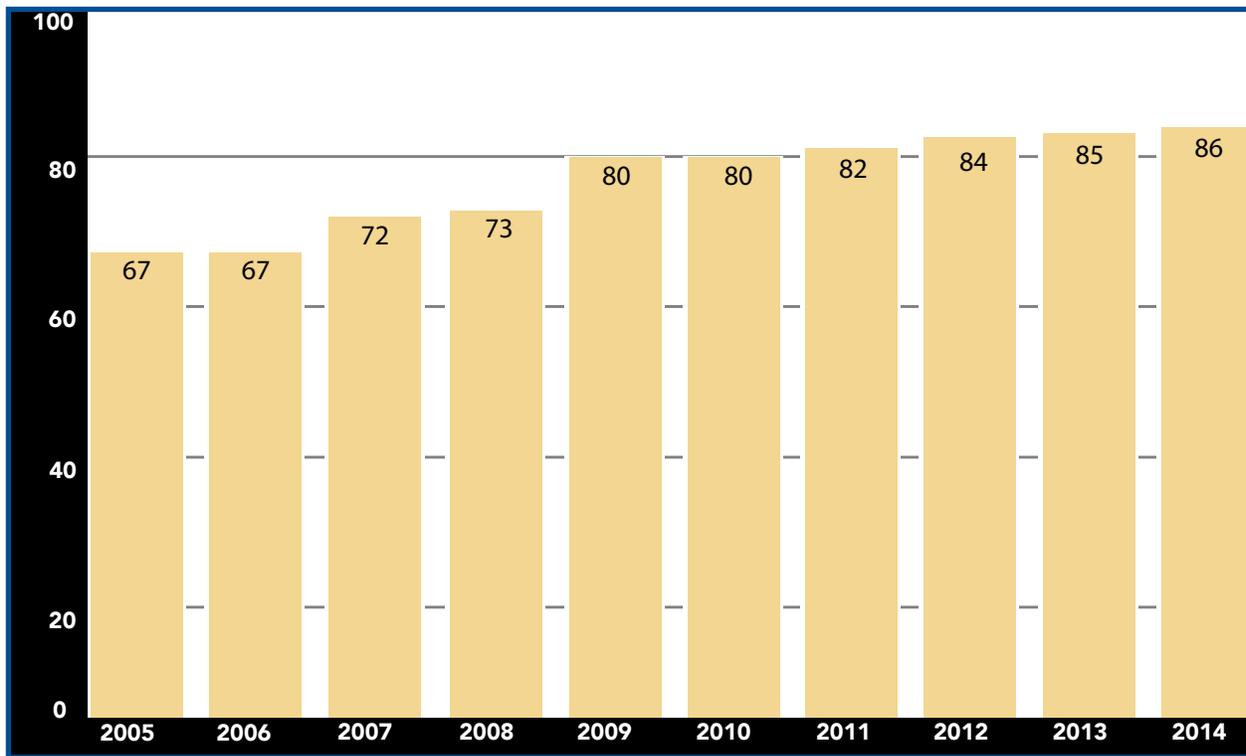
Behavior Modifications



Emphasis Area Lead Agency:

Kentucky Office of Highway Safety, KYTC

SEAT BELT USE 2005-2014



Overview

Occupant protection includes any protective device, such as a seat belt, airbag, child safety seat, or booster seat, which prevents death and/or injury in motor vehicle crashes. Within Kentucky there has been a gradual increase in seat belt use over the last ten years. Following the passage of the primary seat belt law in 2006 and the beginning of ticketed enforcement in 2007, the seat belt usage rate increased from 67 percent in 2005 to 86 percent in 2014.

Recent data also suggest that occupants wearing a seat belt are increasingly unlikely to be seriously injured or killed in a collision. Of people killed in collisions in 2014, 36 percent were wearing a restraint while 43 percent were not (a safety restraint was not available to pedestrians, motorcyclists, and bicyclists). The graph above shows a steady climb in seat belt usage rates and the table on the following page demonstrates that users wearing restraints are less likely to have injuries than users who do not.



OCCUPANT PROTECTION

KENTUCKY OCCUPANT RESTRAINT USE BY INJURY STATUS 2014

Injury Status	All Occupants (Applicable)	Restraint Used	Percentage	Restraint Not Used	Percentage
Killed	672	244	36%	286	43%
Incapacitating Injury	3,154	2,078	66%	594	19%
Non-Incapacitating Injury	11,115	9,008	81%	1,145	10%
Possible Injury	19,952	17,424	87%	1,529	8%
Not Injured	345,877	258,442	75%	11,583	3%

Numbers do not include injuries for Pedestrian, Bicyclists, or Motorcyclists

GOAL AND OBJECTIVE:

The goal of this emphasis area is to reduce the number of serious injuries and fatalities resulting from inadequate or improper use of occupant protective measures.

To measure progress toward this goal, an objective has been set to reduce the 5 year rolling average number of occupant protection-related fatalities to 258 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall Toward Zero Deaths initiative.

The following strategies have been identified to support this effort.



Education Strategies

- Community outreach — continue to expand public information availability and education campaigns to educate the general public about the importance of occupant protection.
- Initiate local seat belt coalitions.
- Educate law enforcement personnel and other relevant agencies about occupant protection and train to check for proper child restraint use.
- Continue to support the Lifesavers Traffic Safety Conference with an emphasis on occupant protection.
- Increase education on correct seat belt usage with teens and pre-teens.
- Increase permanent road signs in areas of low usage rates.
- Increase education on young seat belt usage, with a focus on teens and **“Always Buckle Up Children in the Backseat”** campaign.



Emergency Response Strategies

- Promote and distribute Children Have an Identity (CHAD) Stickers for car seats.



Enforcement Strategies

- Encourage increased statewide high-visibility enforcement to maximize restraint use.
- Conduct intense, highly publicized periods of increased seat belt enforcement, with traffic safety checkpoints, saturation patrols, and enforcement zones, utilizing the **“Click It or Ticket”** safety belt campaign message.
- Continue to promote nighttime seat belt enforcement program.
- Use seat belt survey to target problem areas in rural parts of the state.
- Utilize corridor enforcements to sustain occupant protection use.
- Encourage prioritization of child passenger safety enforcement statewide.
- Compliment annual **“Click It or Ticket”** campaign with law enforcement awards program.

OCCUPANT PROTECTION

Emphasis Area Performance Measures:

- Number of occupant protection-related fatalities.
- Number of occupant protection-related serious injuries.
- Observed seat belt usage rate.



INTERSECTIONS

Design and Operations





INTERSECTIONS

Emphasis Area Lead Agency:

Division of Traffic Operations, KYTC

KENTUCKY INTERSECTION COLLISION STATISTICS 2008 -2014

YEAR	All Collisions	SERIOUS INJURIES		FATALITIES	
		Total	5 Year Average	Total	5 Year Average
2008	32,479	1,088	1,431	87	135
2009	32,199	1,043	1,295	88	122
2010	32,546	1,001	1,177	99	111
2011	32,186	926	1,064	94	101
2012	32,665	1,008	1,013	73	88
2013	32,153	836	963	84	88
2014	32,278	807	916	100	90

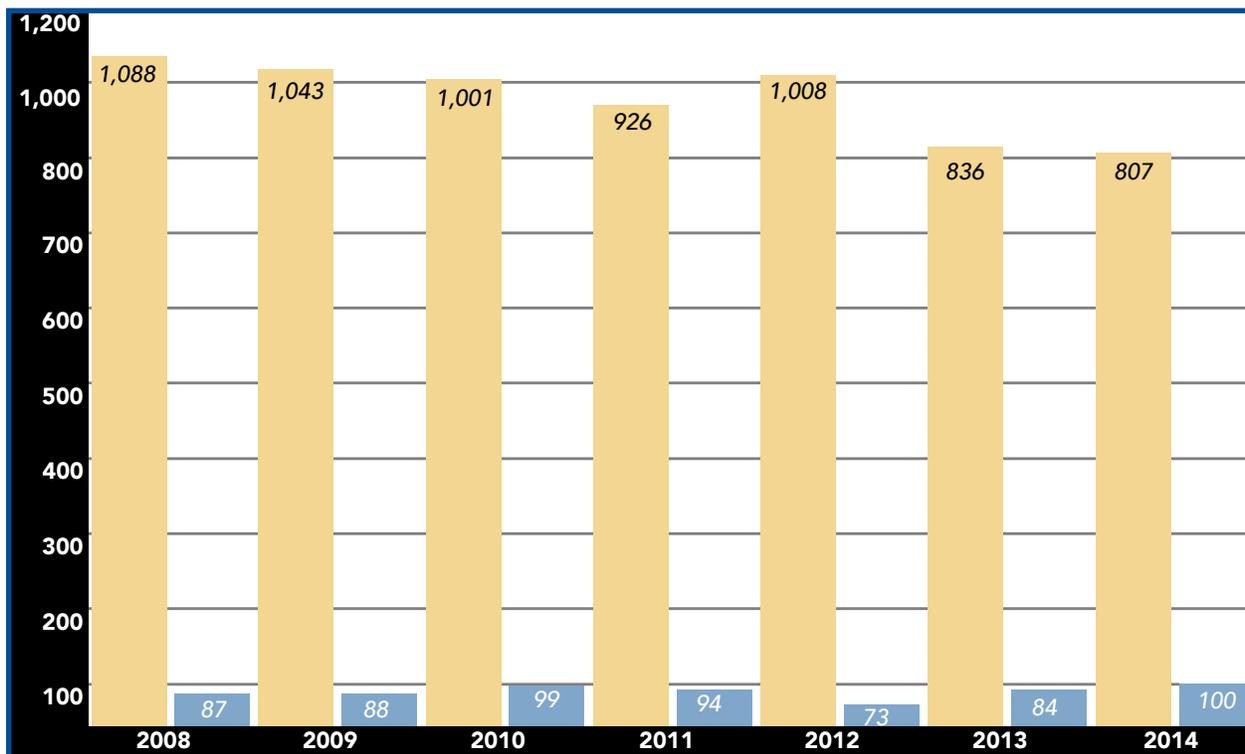
Overview

An intersection crash is defined as a crash that occurs just before, just after, or inside the limits of a crossing or connection of two or more highways.

Of the 3,537 roadway fatalities in Kentucky from 2010 through 2014, 450 (12.7%) resulted from collisions at roadway intersections.

The 5-year rolling average of intersection fatalities dropped from 111 in 2010 to 90 in 2014. The 5-year rolling average of intersection serious injuries also decreased, from 1,177 in 2010 to 916 in 2014.

KENTUCKY INTERSECTION COLLISION STATISTICS 2008 -2014



■ Serious Injuries ■ Fatalities

GOAL AND OBJECTIVE:

The goal of this emphasis area is to implement cost-effective countermeasures at acceptable deployment levels to reduce intersection fatalities and serious injury collisions.

To measure progress toward this goal, an objective has been set to reduce the 5 year rolling average number of intersection-related fatalities to 76 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall **Toward Zero Deaths** initiative.

The following strategies have been identified to support this effort.

INTERSECTIONS

EMPHASIS AREA STRATEGIES:



Education Strategies

- Continue support for driver education programs.
- Increase communication with media, citizens, and partners about running red lights, flashing yellow arrow indications, and alternative intersection designs.
- Have the Safety Circuit Rider program include educational material about intersection safety issues for local officials.



Enforcement Strategies

- Support increased enforcement on roadways with high numbers of collisions resulting from drivers running red lights.
- Encourage law enforcement participation in road safety audit activities.



Engineering Strategies

- Expand use of Flashing Yellow Arrow (FYA) traffic signal display.
- Improve visibility of signal heads (retroreflective back plates, supplemental heads, etc.)
- Develop a policy to require annual inspections and preventative maintenance of traffic signal installations.
- Implement high-friction surface treatments at intersection approaches.
- Optimize traffic signal clearance intervals and phasing.
- Develop a GIS-based intersection location database to maximize the quality of crash data used in the development of Intersection Emphasis Area Lists.



Engineering Strategies (cont.)

- Improve access management near intersections.
- Improve sight distance at intersections.
- Provide additional guidance features through complex intersections.
- Consider systematic implementation of low-cost countermeasures for pedestrian crashes.
- Promote the use of innovative intersection designs (roundabouts, J-turns, continuous flow intersections, positive offset left-turn lanes).
- Pursue the development and installation of Intersection Conflict Warning Systems.
- Pursue systematic projects that include signs and markings for the highest risk intersection types.

Emphasis Area Performance Measures:

- Number of intersection-related fatalities.
- Number of intersection-related serious injuries.





ROADWAY DEPARTURE

Design and Operations

Emphasis Area Lead Agency:

Division of Traffic Operations, KYTC

KENTUCKY ROADWAY DEPARTURE STATISTICS 2008 -2014

YEAR	All Collisions	SERIOUS INJURIES		FATALITIES	
		Total	5 Year Average	Total	5 Year Average
2008	40,345	2,541	2,889	603	647
2009	40,751	2,449	2,781	575	628
2010	40,854	2,098	2,574	530	594
2011	40,313	2,054	2,390	514	568
2012	38,108	2,034	2,235	556	556
2013	37,671	1,576	2,042	432	521
2014	39,305	1,669	1,886	454	497

Overview

A roadway departure is defined as a non-intersection crash that occurs after a vehicle crosses an edge line, a centerline, or otherwise leaves the traveled way.

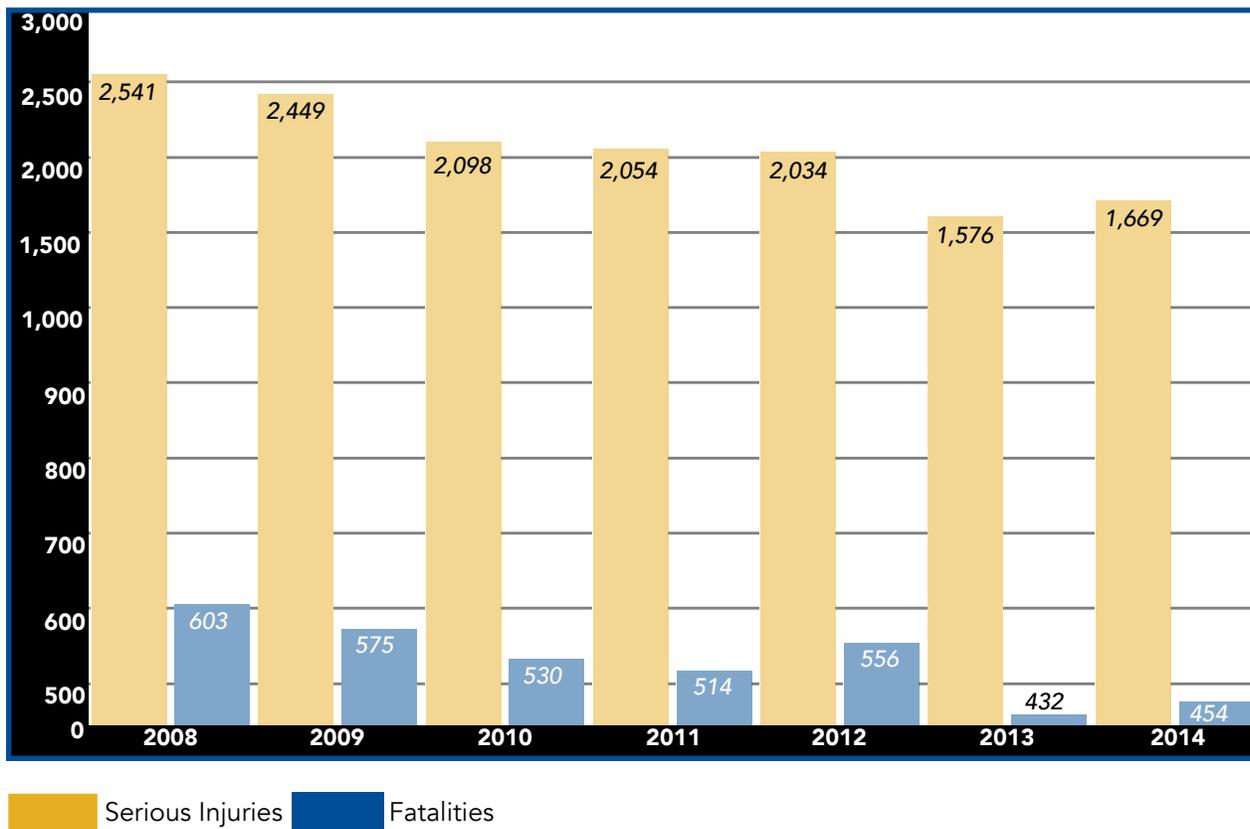
Of the 3,537 roadway fatalities in Kentucky from 2010 through 2014, 2,486 (70.3%) resulted from collisions that involved a roadway departure.

The 5-year rolling average of roadway departure fatalities dropped from 594 in 2010 to 497 in 2014. The 5-year rolling average of roadway departure serious injuries also fell, from 2,574 in 2010 to 1,886 in 2014.



ROADWAY DEPARTURE

KENTUCKY ROADWAY DEPARTURE STATISTICS 2008 -2014



GOAL AND OBJECTIVES:

The goal of this emphasis area is to implement cost-effective countermeasures at acceptable deployment levels and advance new strategies and concepts that reduce roadway departure fatalities and serious injuries.

To measure progress toward this goal, an objective has been set to reduce the the 5 year rolling average number of roadway departure-related fatalities to 420 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall Toward Zero Deaths initiative.

In addition to the TZD-specific objective, several additional ones have been identified:

- Have installed centerline rumble strips on 2,400 miles of roadway by December 31, 2019.
- Have installed edge line rumble strips on 2,300 miles of roadway by December 31, 2019.
- Have installed 340 miles of cable rail by December 31, 2019.

EMPHASIS AREA STRATEGIES:



Education Strategies

- Continue support for driver education programs.
- Increase communication with media, citizens, and partners issues related to roadway departures and efforts to reduce them.
- Have the Safety Circuit Rider program include educational material for local officials about roadway departure issues.



Enforcement Strategies

- Support increased enforcement on roadways with high frequencies of roadway departure collisions.
- Encourage law enforcement participation in road safety audit activities.



Engineering Strategies

- Develop projects to enhance the signs and markings along curves identified by the Roadway Departure Implementation Plan, with a focus on implementing the current Manual on Uniform Traffic Control Devices (MUTCD) and KYTC standards.
- Develop projects to install centerline rumble strips.
- Develop projects to install edge line rumble strips and shoulder rumble strips.
- Develop projects to improve roadway delineation.
- Develop projects to install high friction surface treatments.
- Develop projects to improve the superelevation of curves.
- Develop projects to remove fixed objects (trees, utility poles, etc.) along roadways.
- Develop projects for guardrail upgrades.



ROADWAY DEPARTURE



Engineering Strategies

- Develop median barrier projects.
- Develop projects to improve recovery areas.
- Continue use of Type IX, fluorescent yellow sheeting for horizontal alignment warning signs.
- Develop a policy for the use of the safety edge concept along the state's roadways.
- Develop a policy for the use and placement of centerline rumble strips, edge line rumble strips, and shoulder rumble strips with appropriate accommodations for bicyclists.
- Devote approximately 50% of annual HSIP funding to roadway departure initiatives.
- Incorporate proven countermeasures into policies and procedures.
- Continue the Safety Circuit Rider Program to address safety issues (including roadway departure) on locally maintained highways.

Emphasis Area Performance Measures:

- Number of roadway departure-related fatalities.
- Number of roadway departure-related serious injuries.



COMMERCIAL VEHICLE SAFETY

System Management





COMMERCIAL VEHICLE SAFETY

Emphasis Area Lead Agency:

Kentucky State Police

KENTUCKY COMMERCIAL VEHICLE SAFETY STATISTICS 2008 -2014

YEAR	All Collisions	SERIOUS INJURIES		FATALITIES	
		Total	5 Year Average	Total	5 Year Average
2008	6,168	263	318	106	110
2009	4,915	192	287	101	106
2010	5,069	197	252	91	100
2011	5,301	209	230	77	95
2012	4,975	174	207	69	89
2013	5,183	197	194	70	82
2014	5,892	172	190	67	75

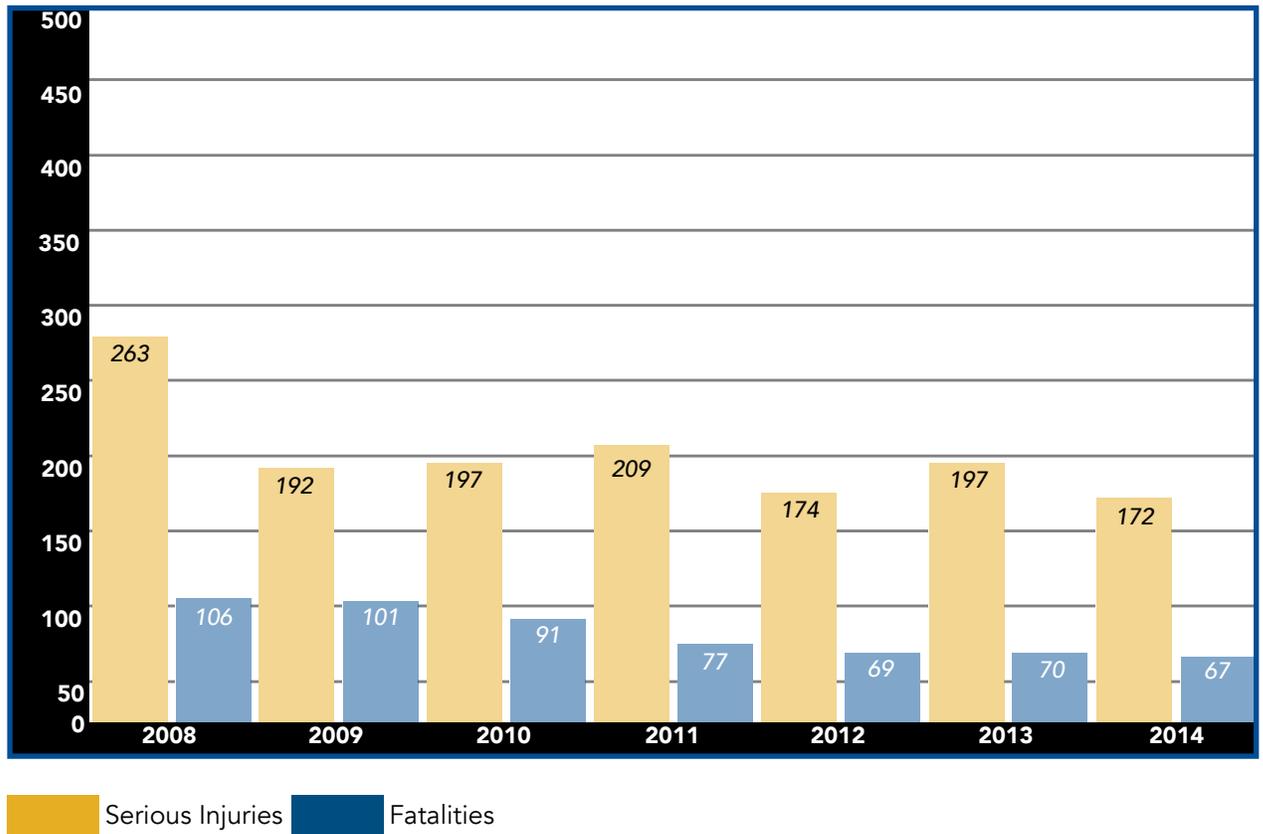
Overview

Kentucky contains several major highway freight corridors, including Interstates 65, 75, 64, 71, 69 and 24. As such, commercial motor vehicle (CMV) traffic is a significant and important component of the state's freight transportation network. A CMV is defined as a vehicle with a registered weight of 10,000 pounds or more.

Of the 3,537 roadway fatalities in Kentucky from 2010 through 2014, 374 (10.6%) resulted from collisions involving CMVs.

The 5-year rolling average of commercial vehicle fatalities declined from 100 in 2010 to 75 in 2014. The 5-year rolling average of commercial vehicle serious injuries also fell, from 252 in 2010 to 190 in 2014.

KENTUCKY COMMERCIAL VEHICLE SAFETY STATISTICS 2008 -2014



GOAL AND OBJECTIVE:

The goal of this emphasis area is to reduce the number and severity of crashes involving CMVs, including hazardous materials incidents.

To measure progress toward this goal, an objective has been set to reduce the the 5 year rolling average number of commercial vehicle-related fatalities to 63 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall Toward Zero Deaths initiative.

The following strategies have been identified to support this effort.

COMMERCIAL VEHICLE SAFETY

EMPHASIS AREA STRATEGIES:



Education Strategies

- Coordinate with the appropriate state entities regarding the feasibility of using information boards and rest areas to post information on high crash corridors.
- Educate roadway users, motor carriers, and the agriculture community on commercial vehicle performance, visibility, and regulations, including the No-Zone Program, hazardous materials, and others.
- Deliver 200 programs annually in one or more of the following formats:
 - Outreach/education at events, including and not limited to Farm Machinery Show (February); Mid-America Trucking Show (March); Kentucky State Fair (August); County Fairs, (various dates); and recruiting.
- Increase educational opportunities from FMCSA through FOOS reporting to develop officers.
- Conduct quarterly outreach presentations to commercial carriers.
- Conduct annual driver appreciation programs.
- Utilize Public Information Officers to report all enforcement campaigns and all traffic safety messages regarding commercial vehicle safety.
- Increase the number of signs that post advisory exit speeds on interstates and parkway interchanges; include rollover warning signage if applicable at the same locations to reduce the number of CMV crashes.



Emergency Response

- Increase Traffic Incident Management (TIMS) certification for emergency responders.
- Redirect traffic to alternate routes and detours due to major closure.





Enforcement Strategies

- Maintain or increase the total number of sub-grantees for hazardous materials inspection by 3 percent.
- Implement other strategies identified in Kentucky's annual Commercial Vehicle Safety Plan, which is part of the Motor Carrier Safety Assistance Program (MCSAP).
- Implement national and state specific program elements:
 - Driver/Vehicle Inspections
 - Compliance Reviews
 - Traffic Enforcement
 - Public Education and Awareness
 - Data Collection and Reporting
- Require electronic CDL checks on each driver contact.
 - Increase Hazardous Material Vehicle inspections



Engineering Strategies

- Identify high-crash corridors involving CMVs and initiate appropriate engineering interventions where appropriate.
- Promote the increase of space/parking capacity for CMVs in interstate rest areas and rest havens.

COMMERCIAL VEHICLE SAFETY



Engineering Strategies (cont.)

- Increase total mileage of cable median barriers to reduce the number of cross-over median crashes.
- Increase total mileage of rumble strips on shoulders and centerlines; assist CMV operators with safe operation during hazardous road conditions (snow, ice, rain).
- Increase total mileage of high-friction surface treatments on interstate and parkway entrances, as well as on exit ramps.
- Increase signage that posts advisory exit speeds on interstates and parkway interchanges; include rollover warning signage, if applicable, at same location to reduce the number of CMV crashes.

Emphasis Area Performance Measures:

- Number of CMV-related fatalities.
- Number of CMV-related serious injuries.





INCIDENT MANAGEMENT

System Management



INCIDENT MANAGEMENT

Emphasis Area Lead Agency:

Kentucky Office of Highway Safety, KYTC

Overview

Incident management in highway transportation is the process of conducting emergency response operations after a highway incident. Non-recurring conditions, such as work zones, traffic incidents, special events, and inclement weather can all contribute to increased roadway congestion and to the need for incident management.

The number of work zone crashes are one indicator of the effectiveness of incident management. Delay associated with work zones is compounded with the occurrence and severity of a crash. Of the 3,533 roadway fatalities in Kentucky from 2010 through 2014, 18 (0.5%) resulted from collisions that were work-zone related.

The 5-year rolling average of work zone-related fatalities dropped from 5.8 in 2010 to 3.6 in 2014. The 5-year rolling average of work zone serious injuries also fell, from 23.6 in 2010 to 18.6 in 2014.

GOAL AND OBJECTIVE:

The goal of this emphasis area is to improve safety and reduce traveler delay by implementing an effective, multi-agency incident management program. Because the number of annual fatalities is so low for work zone crashes, it is not feasible to include this as part of a specific objective pursuant to the TZD concept.

The following strategies have been identified

EMPHASIS AREA STRATEGIES:



Education Strategies

- Promote the use of the national incident management system.
- Establish or enhance local incident management teams and nurture their development.
- Incorporate interagency incident management training and emergency traffic control training into ongoing training for all responders.



EMPHASIS AREA STRATEGIES:



Education Strategies (cont.)

- Share Kentucky's Highway Incident Management Strategic Plan with responders, and update the plan regularly.
- Provide timely incident management information to the public.
- Initiate a public information campaign for motorists on the proper response to an incident.
- Encourage the expanded use of interoperable communication capabilities.
- Provide training on Kentucky's "open roads" policy for interstates and parkways.
- Provide training to responders on the quick clearance law.
- Install push bumpers on responder vehicles.



Emergency Response

- Improve the warning system for the end-of-traffic queue at major incidents to reduce secondary crashes.
- Improve accuracy of data recorded as "secondary crashes" by investigating officers
- Sponsor post-incident debriefings for all major incidents.
- Increase Safety Patrol capacity to respond to all requests for assistance.
- Decrease response times for Safety Patrol on assistance calls.
- Increase Traffic Incident Management (TIMS) certification for emergency responders.



Enforcement Strategies

- Refine the quick clearance law to include clauses that limit liability of responders.
- Identify and direct traffic to alternate routes.

INCIDENT MANAGEMENT



Engineering Strategies

- Identify and address the delays and safety problems associated with work zones and maintenance activities.
- Enhance the capability of current traffic management centers and implement other centers as needed.
- Install reference and ramp markers in high incident areas or on critical routes.
- Evaluate and implement a policy regarding critical or “Decision Point” locations where ITS technology should be located to disseminate incident information.
- Evaluate and implement a policy for the 511 system to identify problems and strategies for improvement.

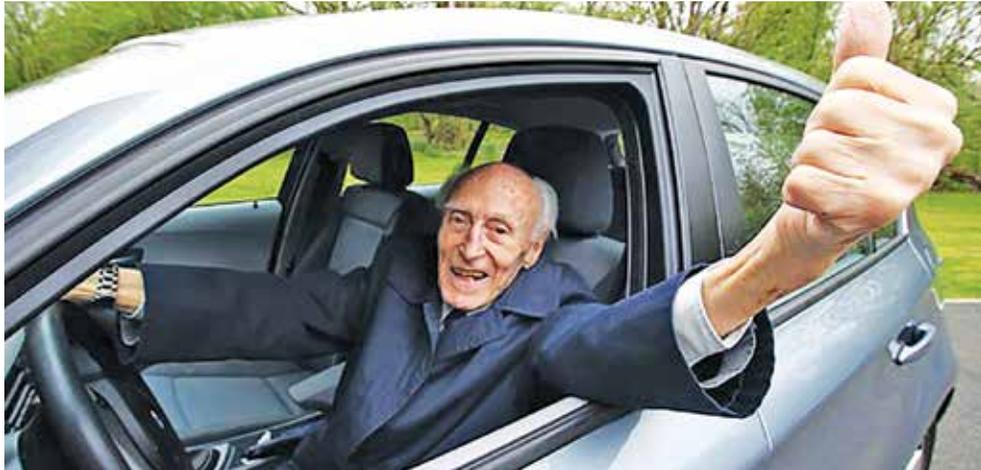
Emphasis Area Performance Measures:

- Number of fatalities resulting from secondary collisions
- Number of serious injuries resulting from secondary collisions
- Average incident response time
- Average incident clearance time



HIGH RISK DRIVERS

Vulnerable Roadway Users





HIGH RISK DRIVERS

Emphasis Area Lead Agency:

Kentucky Office of Highway Safety, KYTC

KENTUCKY HIGH RISK DRIVERS STATISTICS 2008 -2014

YEAR	All Collisions	SERIOUS INJURIES		FATALITIES	
		Total	5 Year Average	Total	5 Year Average
2008	43,193	993	1,245	264	310
2009	45,229	884	1,138	279	300
2010	43,997	785	1,019	244	282
2011	43,987	733	904	211	257
2012	43,599	713	822	229	245
2013	42,523	601	743	223	237
2014	43,055	550	676	218	225

Overview

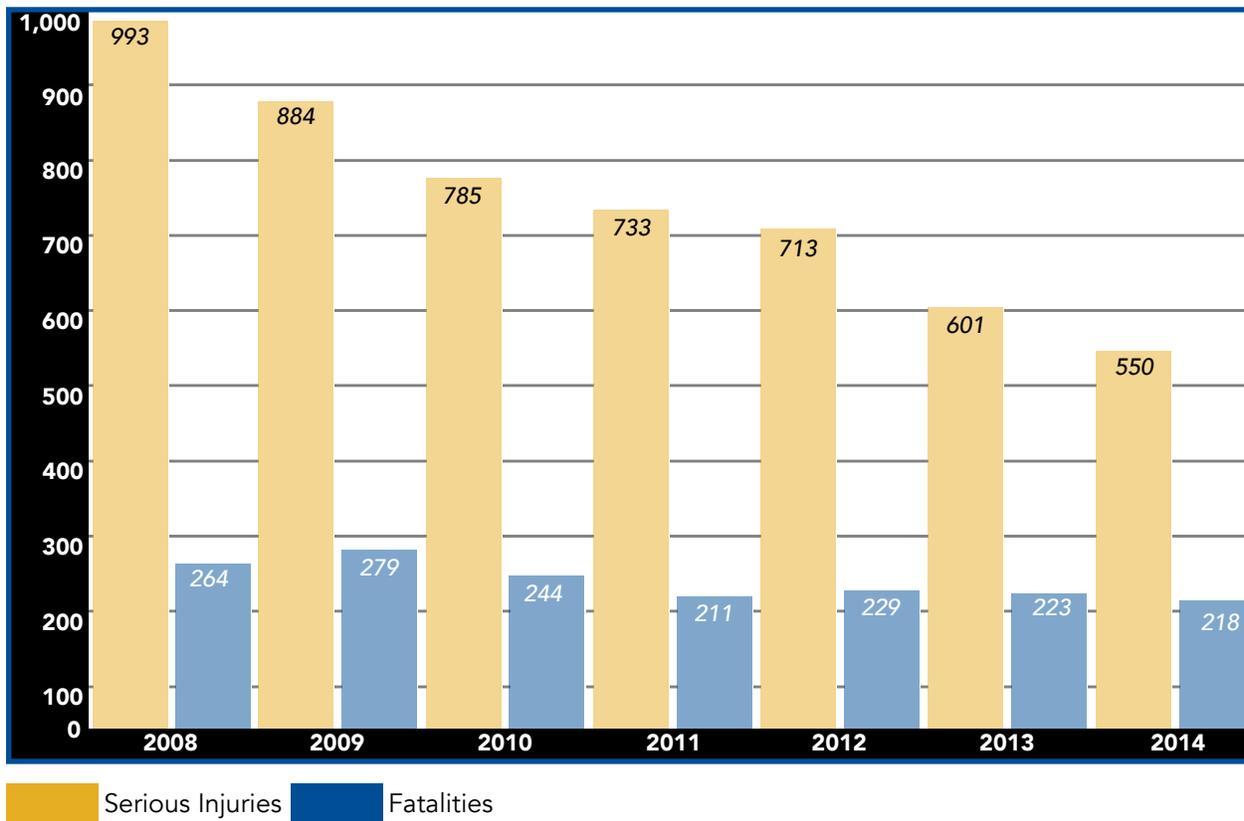
High-risk drivers include young drivers, defined as those between the ages 16 and 20, and mature drivers, defined as people 65 and older.

Of the 3,537 roadway fatalities in Kentucky from 2010 through 2014, 1,125 (31.8%) resulted from collisions that involved high-risk drivers.

In 2014, young drivers were involved in 77 fatal collisions, which represents 12.6 percent of all fatal collisions in Kentucky. The 5-year rolling average of young driver fatalities dropped from 137 in 2010 to 94 in 2014. The 5-year rolling average of young driver serious injuries also declined, from 1,019 in 2010 to 676 in 2014.

In 2014, mature drivers were involved in 122 fatal collisions, which represents 19.9 percent of all fatal collisions in Kentucky. The 5-year rolling average of mature driver fatalities fell from 145 in 2010 to 131 in 2014. The 5-year rolling average of mature driver serious injuries also went down, from 636 in 2010 to 547 in 2014.

KENTUCKY HIGH RISK DRIVERS STATISTICS 2008 -2014



GOAL AND OBJECTIVE:

The goal of this emphasis area is to identify safety issues related to high-risk drivers and to implement countermeasures to reduce the frequency and severity of these crash.

To measure progress toward this goal, an objective has been set to reduce the the 5 year rolling average number of high-risk driver-related fatalities to 190 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall Toward Zero Deaths initiative.

The following strategies have been identified to support this effort.

EMPHASIS AREA STRATEGIES:



Education Strategies

- Include traffic safety education in the Kentucky Core Content/Program Studies and make the teaching of highway safety mandatory in classrooms.
- Require a parent or guardian of new drivers in the GDL (Graduated Driver Licensing) program to accompany them to required GDL class before issuing new drivers a full, unrestricted license.

HIGH RISK DRIVERS



Education Strategies (cont.)

- Continue the partnership with KOHS Educational Programs in schools, which focus on seatbelt usage. Also include graphic, real-life videos and photos (i.e. Red Asphalt Series) for use in educational programs when targeting teen drivers, as this is one of the most effective methods of reaching this demographic.
- Conduct Mature Driving educational programs throughout the state.
- Display Mature Drivers posters wherever Mature Driving programs have been conducted.



Emergency Response Strategies

- Implement Yellow Dot Program.



Enforcement Strategies

- Amend existing statutes to eliminate the immediate purge from the records of young drivers, following reinstatement of license after being cited for driving under the influence with a 0.02 BAC or higher.
- Revise traffic school attendance requirements to once every two years from once annually, and require a parent or guardian of drivers under 18 to attend traffic school with their child as a deterrent to further violations.
- Implement Yellow Dot Program.
- Support the Kentucky Medical Review Board Program: driver license screening and testing.



Emphasis Area Performance Measures:

- Number of high risk driver-related fatalities.
- Number of high risk driver-related serious injuries.



MOTORCYCLES

Vulnerable Roadway Users





MOTORCYCLES

Emphasis Area Lead Agency:

Kentucky Office of Highway Safety, KYTC

KENTUCKY MOTORCYCLE DRIVERS STATISTICS 2008 -2014

YEAR	All Collisions	SERIOUS INJURIES		FATALITIES	
		Total	5 Year Average	Total	5 Year Average
2008	2,159	426	404	97	95
2009	1,915	377	402	88	98
2010	1,961	354	398	98	99
2011	1,839	331	385	72	94
2012	1,967	376	373	98	91
2013	1,689	296	347	84	88
2014	1,658	284	328	77	86

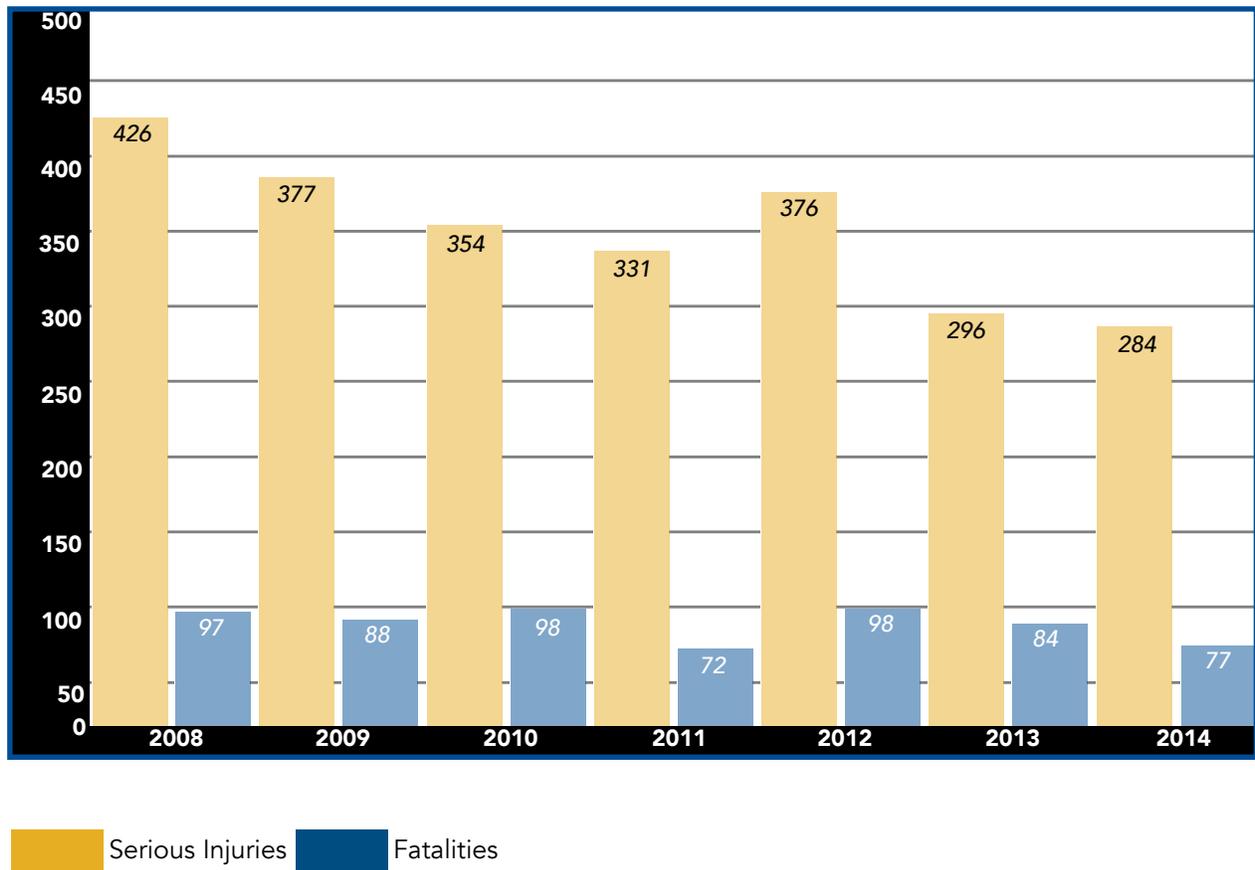
Overview

A “licensed motorcycle operator” refers to a licensed operator with either a standard Kentucky operator’s license containing a motorcycle endorsement, a standard Kentucky license containing commercial and motorcycle endorsements, or a motorcycle license only. Licensed operator refers to any issued Kentucky license excluding learner’s permits, intermediate, or moped-only licenses. In Kentucky, the number of motorcycle registrations and licenses continue to increase.

Of the 3,537 roadway fatalities in Kentucky from 2010 through 2014, 429 (12.1%) resulted from motorcycle-related collisions.

The 5-year rolling average of motorcycle fatalities fell from 99 in 2010 to 86 in 2014. The 5-year rolling average of motorcycle serious injuries also declined, from 398 in 2010 to 328 in 2014.

KENTUCKY MOTORCYCLE DRIVERS STATISTICS 2008 -2014



GOAL AND OBJECTIVE:

The goal of this emphasis area is to identify safety issues related to motorcycles and to implement programs to reduce the frequency and severity of crashes involving motorcycles.

To measure progress toward this goal, an objective has been set to reduce the the 5 year rolling average number of motorcycle-related fatalities to 72 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall Toward Zero Deaths initiative.

The following strategies have been identified to support this effort.

MOTORCYCLES



Education Strategies

Driver Education:

- Public service announcements focused on the safety benefits of helmets.
- Billboards targeting the motoring public to promote safely sharing the road with motorcycles.
- Gas topper ads promoting helmet use and safely sharing the road.
- Partner with motorcycle establishments to display educational items for sober rides.
- Attend rides and rallies to distribute educational tip sheets.
- Contact permit motorcycle operators to encourage proper licensing.
- Continue partnership with the Kentucky Motorcycle Program at Eastern Kentucky University.
- Through public service announcements and educational tip sheets encourage the use of reflective materials and headlamp modulation systems

Police Officer Education:

- Work with the Department of Criminal Justice Training and Kentucky State Police Academy to educate officers in detection of impaired motorcyclists.
- Provide high visibility patches, tape, stickers, and arm bands with safety messages to motorcycle riders.



Enforcement Strategies

- Continue partnerships with law enforcement agencies, the Kentucky Office of Highway Safety Program, and other highway safety partners.

Emphasis Area Performance Measures:

- Number of motorcycle-related fatalities.
- Number of motorcycle-related serious injuries.



NON-MOTORIZED USERS

Vulnerable Roadway Users





NON-MOTORIZED USERS

Emphasis Area Lead Agencies:

Kentucky Office of Highway Safety, KYTC
 Division of Planning, KYTC

KENTUCKY NON-MOTORIZED USERS STATISTICS 2008 -2014

YEAR	All Collisions	SERIOUS INJURIES		FATALITIES	
		Total	5 Year Average	Total	5 Year Average
2008	3,148	216	228	72	60
2009	2,850	223	223	44	58
2010	3,010	204	216	67	58
2011	2,890	202	209	54	57
2012	3,032	206	210	60	59
2013	2,755	189	205	58	57
2014	2,710	207	202	62	60

Overview

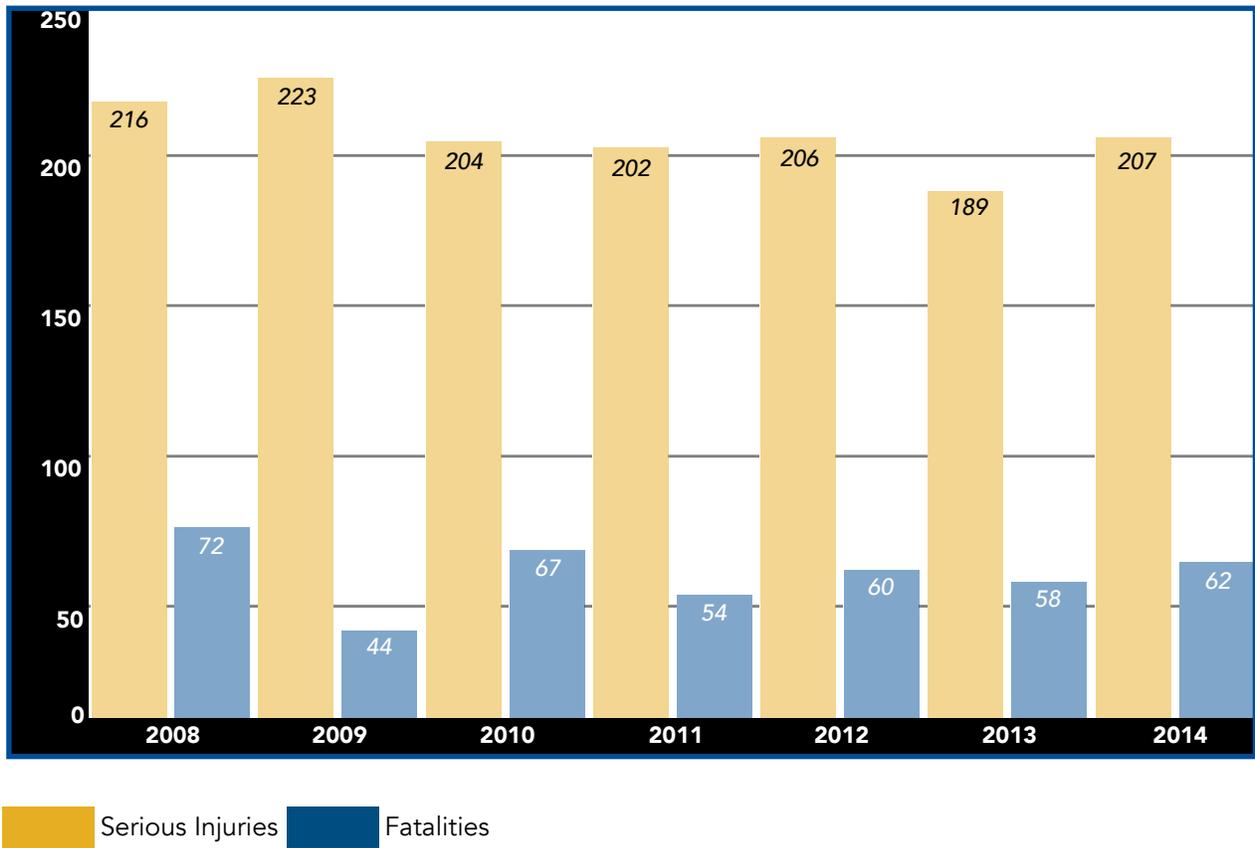
Non-motorized users are defined as pedestrians and bicyclists.

Of the 3,537 roadway fatalities in Kentucky from 2010 through 2014, 301 (8.5%) were from crashes involving non-motorized users.

Although the overall annual number of traffic fatalities decreased by 6.2 percent in 2014 compared to the average number of crashes from 2010 to 2013, this has not been the case with pedestrian fatalities. When comparing the 2010–2013 average of pedestrian fatalities with the 2014 total of 59, there has been a 6.8 percent increase. Pedestrian fatalities are most likely to occur in urban areas, with 74 percent of all fatalities happening in those areas. Pedestrian fatalities as a portion of total fatalities in Kentucky, being relatively rural compared to other states, ranks well below the national average at 8.8 percent. But in Kentucky’s more urbanized areas of northern Kentucky, Lexington, and Louisville, the rate for pedestrian fatalities remains significantly higher.

Kentucky experienced a moderate reduction in bicyclist fatalities and serious injuries between 2010 and 2014. The 5-year rolling average of bicyclist fatalities dropped from 5 in 2010 to 4.2 in 2014. The 5-year rolling average of bicyclist serious injuries also declined, from 42 in 2010 to 38 in 2014.

KENTUCKY NON-MOTORIZED USERS STATISTICS 2008 -2014



GOAL AND OBJECTIVE:

The goal of this emphasis area is to reduce the number and severity of crashes involving pedestrians and bicyclists.

To measure progress toward this goal, an objective has been set to reduce the the 5 year rolling average number of non-motorized user-related fatalities to 51 by December 31, 2019. This would follow along the goal of reducing annual fatalities by 50 percent between 2014 and 2030 as part of Kentucky's overall Toward Zero Deaths initiative.

The following strategies have been identified to support this effort.



NON-MOTORIZED USERS

EMPHASIS AREA STRATEGIES:



Education Strategies

- Implement a comprehensive, age-appropriate approach to school traffic safety, including school facilities planning, collaboration, and coordination among those responsible for education, transportation, and land use planning, to maximize safety for children walking or biking to and from schools.
- Utilize and share the Louisville bicycle and pedestrian safety program format with other local governments with a need or desire to reduce the number of bicycle and pedestrian crashes in those communities.
- Form a task force to assist in development of non-motorized user safety action plans, to facilitate training delivery, and to establish safety improvement programs in Louisville and other urbanized areas.
- Promote non-motorized user safety audits and implementation of recommendations.
- Assess both the Kentucky Drivers Manual and standard traffic school curriculum for information on pedestrian and bicycle-related laws, collision factors, and defensive walking, and then make additions/revisions as necessary. Develop and provide complementary ongoing non-motorized safety education materials reinforced with public information programs.
- Support the Safe Communities Program, which includes educational programs promoting bicycle and pedestrian safety.
- Coordinate a bicycle and pedestrian program designed to improve user safety with local governments and community stakeholders.
- Provide curriculum to county traffic schools that show pedestrian vs. car crashes in communities with crash rate 15 percent higher than the national average.



Enforcement Strategies

- Implement pedestrian and traffic enforcement operations during peak months: May, September and October. These operations will be carried out at locations with high crash risk.
- Continued support of the Metro Louisville enforcement program.
- Maintain or increase high visibility enforcement of distracted drivers and pedestrians in areas where the data show vulnerable users vs. car crashes is 15 percent higher than the national average (ie; failure to yield, mid block crossings, etc).

EMPHASIS AREA STRATEGIES: (CONT.)



Emergency Response Strategies

- Promote EMS/EMT training for brain, spinal and internal injuries for pedestrian and bicycle crashes.



Engineering Strategies

- Continuously improve pedestrian and bicycle striping, signage, and signalization, and include standard safety upgrades in routine maintenance and striping projects.
- Implement Complete Streets—providing safe access for all modes—and model pedestrian safety principles as fundamental in transportation and land use plans, with incentives available to cities, counties, and regions that integrate pedestrian safety in general and into specific land use plans, transportation plans, and other policy documents.
- Establish a Non-Motorized User Safety Focus Team to develop and implement a comprehensive Safety Data Plan.
- Develop pedestrian and bicycle safety improvement programs to identify and improve safety at high-crash concentration locations.
- Display Share the Road with Bicycles signage.
- Promote engineering changes or improvements on future or current projects that deter mid-block crossings in corridors with known pedestrian crashes.
- Refer to the “Pedestrian and Bicycle Travel Policy” when designing projects that will impact current or future bicycle and pedestrian facilities.
- Promote and increase use of appropriate signage and markings in high-use corridors with significant bicycle traffic.

Emphasis Area Performance Measures:

- Number of non-motorized user-related fatalities
- Number of non-motorized user-related serious injuries.

GLOSSARY

ABC: Alcoholic Beverage Control

BAC: Blood alcohol content

CDL: Commercial driver's license

CHAD: Children Have an Identity

CMV: Commercial motor vehicle

CRASH: Collision Report Analysis for Safer Highways

CVSP: Commercial Vehicle Safety Plan

DEC: Drug Evaluation and Classification

DRE: Drug recognition expert

DUI: Driving under the influence of intoxicants (alcohol) or of any substance or substances which impair driving ability

EDR: Electronic Death Registration

EMS: Emergency Medical Services

FDE: Fundamental Data Elements

FHWA: Federal Highway Administration

FMCSA: Federal Motor Carrier Safety Administration

FOOS: Federal Out of Service

FRA: Federal Railroad Administration

FTA: Federal Transit Administration

FYA: Flashing yellow arrow

GDL: Graduated driver licensing

GIS: Geographic information system

HRRR: High-risk rural road

HSIP: Highway Safety Improvement Program

HSP: Highway Safety Plan

ITS: Intelligent transportation system

KAVIS: Kentucky Automated Vehicle Identification System

KEMISIS: Kentucky Emergency Medical Services Information System

KIDTF: Kentucky Impaired Driving Task Force

KOHS: Kentucky Office of Highway Safety

KSP: Kentucky State Police

KTC: Kentucky Transportation Center

KTRAC: Kentucky Traffic Records Assessment Committee

KYTC: Kentucky Transportation Cabinet

MAP-21: Moving Ahead for Progress in the 21st Century Act

MCSAP: Motor Carrier Safety Assistance Program

MIRE: Model Inventory Roadway Elements

MMUCC: Model Minimum Uniform Crash Criteria

MPO: Metropolitan Planning Organization

MUTCD: Manual on Uniform Traffic Control Devices

MVM: Million vehicle miles

NHTSA: National Highway Traffic Safety Administration

NMVTIS: National Motor Vehicle Information Title Information System

- POPS:** Police Officer Professional Standards
- SFST:** Standardized Field Sobriety Testing
- STAR:** Server Training in Alcohol Regulations
- TIMS:** Traffic incident management
- TSRP:** Traffic safety resource prosecutor
- TZD:** Toward Zero Deaths
- VINA:** Vehicle Identification Number Assist
- VMT:** Vehicle miles traveled

