

FFY 2022 Massachusetts Highway Safety Plan Office of Grants and Research



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Introduction to the FFY 2022 Highway Safety Plan

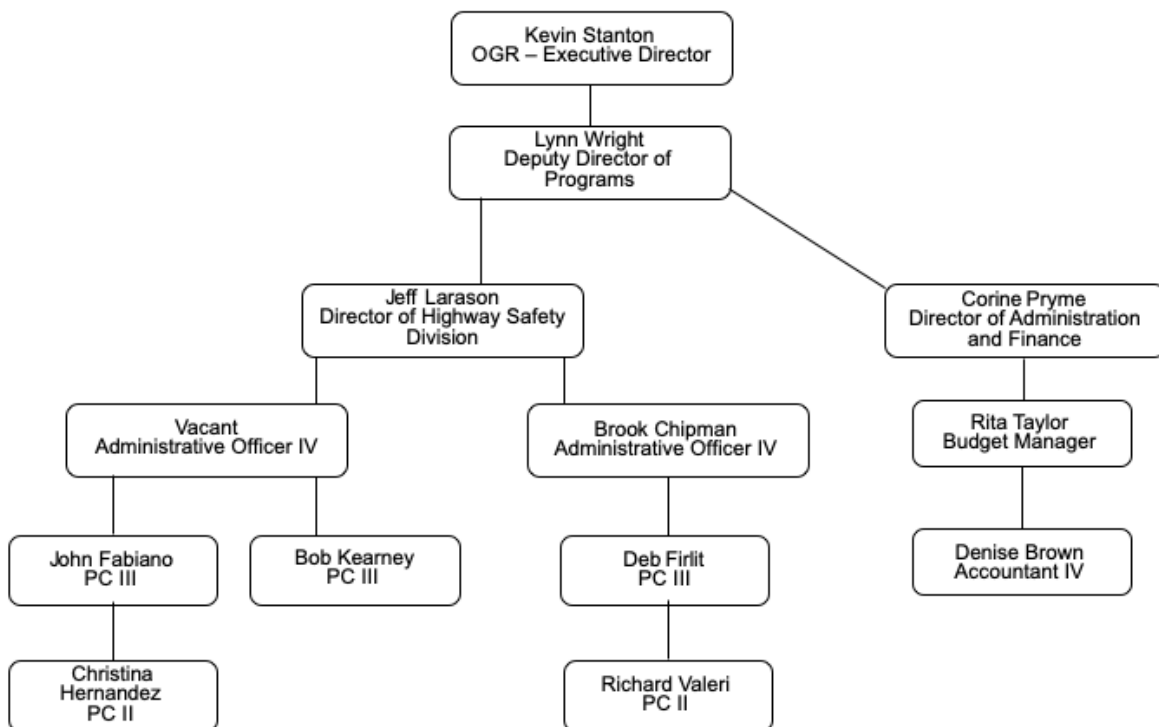
On behalf of the Commonwealth of Massachusetts, the Executive Office of Public Safety and Security's (EOPSS) Office of Grants and Research (OGR) is pleased to present our Federal Fiscal Year (FFY) 2022 Highway Safety Plan (HSP) for consideration of funding. This document outlines our program priority areas, identifies performance targets, and discusses proposed initiatives. This HSP serves as the framework for the implementation of countermeasures with highway safety partners across the Commonwealth.

Under the supervision of the Executive Director, OGR's Highway Safety Division (HSD) is responsible for the development, implementation, coordination, and ongoing management of the Massachusetts highway safety program. This responsibility includes identifying traffic safety priorities and working with partners to develop programs and initiatives to address continuing and shifting highway safety needs.

Current OGR Organization

On behalf of EOPSS, OGR serves as the state administering agency for the National Highway Traffic Safety Administration, Department of Justice, and Federal Emergency Management Agency funds awarded to the Commonwealth. OGR is divided into five divisions: Highway Safety, Justice and Prevention, Research Policy and Analysis, Homeland Security, and Fiscal. The structure below is current as of June 30, 2021, reflects OGR leadership and highlights the Highway Safety unit within this agency.

OGR Highway Safety Division Organizational Chart



Mission Statement

OGR's mission for highway safety is to secure and disseminate grant funding and facilitate the development and implementation of policies, programs, and partnerships designed to reduce fatalities, injuries, and economic losses resulting from motor vehicle crashes on the roadways of the Commonwealth of Massachusetts.

Highway Safety Program Overview

Within the Commonwealth of Massachusetts, OGR is responsible for planning, implementing, and evaluating highway safety projects with federal and non-federal funds. This agency also coordinates federal, state, and local organizations involved with highway safety in Massachusetts.

Highway safety planning process

The team began the planning process for developing the FFY 2022 HSP by gathering all relevant data related to performance targets and doing an in-depth analysis of the data to find trends within one year, five-year, and (if feasible) ten-year periods. The data was analyzed across different fields, including county, municipality, month, day of the week, time of day, gender, and age. Furthermore, mapping software was used to provide a visual tool to help analyze trends and hot spots throughout Massachusetts. This information helped identify high-risk locations as well as behavioral patterns among roadway users that require attention.

The data sources utilized in this analysis process are listed below:

- Fatality Analysis Reporting System (FARS) – fatalities and fatal crashes
- Massachusetts Crash Data System (CDS) – fatalities and injuries
- Massachusetts Injury Surveillance Program – injuries and hospitalizations
- Massachusetts Citation Data – roadway violations
- Massachusetts Safety Belt Usage Observation Survey – safety belt usage, occupant protection
- FHWA Highway Statistics – Vehicle Miles Traveled (VMT), licensed drivers, and road miles
- U.S. Census Bureau statistics – population, income levels
- FBI Crime Statistics – arrests for driving intoxicated and other vehicle-related crimes

The results of the data were coordinated and shared with the Massachusetts Department of Transportation. This coordination occurred to ensure that performance targets related to fatalities, serious injuries, and fatalities per 100 million VMT are identical to the Massachusetts Highway Safety Improvement Program (HSIP) and the Strategic Highway Safety Plan (SHSP). Other performance targets were determined through trend analysis and ongoing exchanges with critical federal, state, and local partners such as state and local police departments, Massachusetts Department of Public Health, the Governors Highway Safety Association, and the Traffic Records Coordinating Committee.

OGR also relied on input provided by a wide range of statewide and community partners, including state and local police and non-profit organizations focused on road safety. These stakeholders provided valuable information about traffic safety issues facing their respective communities and constituencies, along with suggestions about potential solutions to address those issues. Specifically, staff members are in frequent contact with current and potential grant subrecipients to identify trends and possible adjustments to programs to better address anticipated future needs.

Through the combination of data analysis and input from traffic safety stakeholders, OGR determined where to focus funding for FFY 2022 to procure the most significant impact in reducing crashes, injuries, fatalities, and associated economic losses.

Partners in the Planning Process

To help determine problem areas to focus on, the HSD team engaged with many participants during the planning process, including but not limited to:

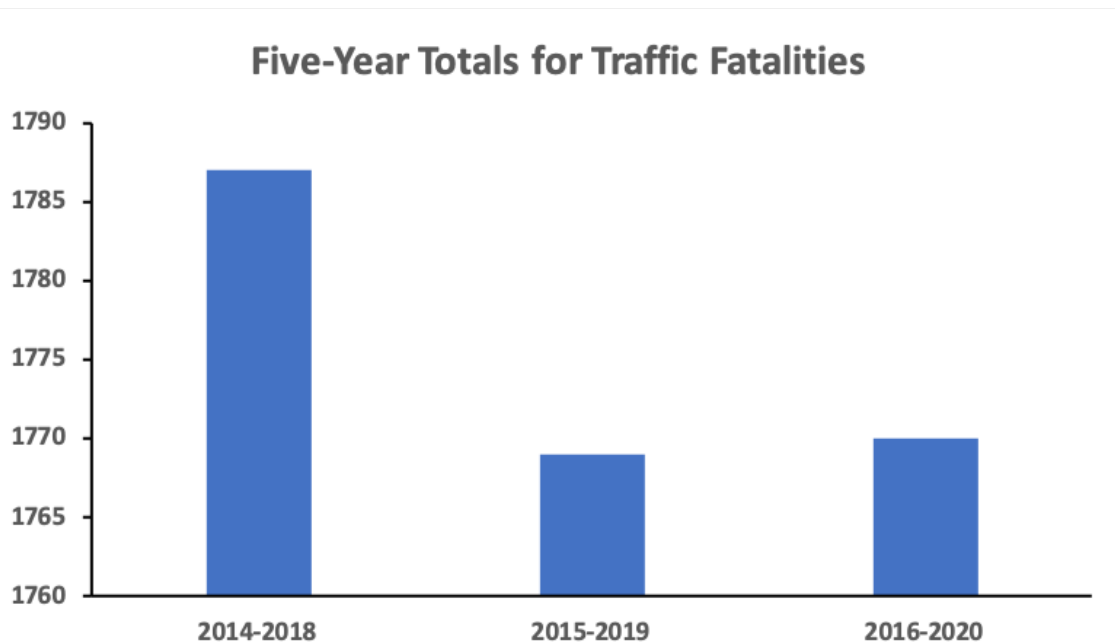
- Massachusetts Department of Transportation (MassDOT)
- Massachusetts Registry of Motor Vehicles (RMV)
- Massachusetts Department of Public Health
- Massachusetts Department of State Police (MSP)
- Governors Highway Safety Association
- Massachusetts District Attorneys Association (MDAA)
- Massachusetts Executive-Level Traffic Records Coordinating Committee (ETRCC)
- Massachusetts Working-Level Traffic Records Coordinating Committee (WTRCC)
- Municipal Police Training Committee (MPTC)
- Merit Rating Board
- University of Massachusetts Traffic Safety Research Program (UMassSafe)
- Local police departments
- Massachusetts Chiefs of Police Association
- SHSP Executive Leadership Committee
- Boston Emergency Medical Services (EMS)
- Massachusetts Alcoholic Beverages Control Commission (ABCC)
- Massachusetts Executive Office of Health and Human Services (EOHHS)
- Safe Roads Alliance
- Colleges and Universities
- In Control Family Foundation

Overview of Traffic Safety Trends in Massachusetts

Identifying current traffic safety issues for the FFY 2022 HSP was possible through the use of data analysis related to fatalities and fatal crashes over seven years (2014 - 2020). The data was gathered from numerous factors, including, but not limited to, counties, cities, time-of-day, month, day-of-week, road type, gender, and age. Data from available monthly and year-end reports from FFY 2021 grant-funded programs provided further insight into traffic safety trends. Lastly, input from traffic safety stakeholders added a third layer of analysis to determine traffic safety issues in Massachusetts.

All fatality data provided comes from the **FARS Query** system ([Fatality Analysis Reporting System](#)) and MassDOT's **IMPACT** data portal (<https://apps.impact.dot.state.ma.us/cdp/home>). The primary focus of data analysis will be 2016 - 2020 with reference to 2014, 2015 to provide five-year period comparisons. All data for 2019 and 2020 is considered preliminary and could change when Massachusetts submits the final data file each year to FARS. Trendlines are represented by dotted light brown lines on the graphs.

From 2016 to 2020, 1,770 fatalities resulted from 1,682 crashes along the roadways of Massachusetts. This is a 1% decline from 1,787 reported from 2014 to 2018, but one fatality higher than what was reported from 2015 to 2019.



The Massachusetts population (est. 6,949,503) ranks 15th among the 50 states in the Union. The population per square mile is 890.95, an increase of 10% since 2010, when the last Census took place. In 2019, Massachusetts drivers tallied 64,889 million Vehicle Miles Traveled (VMT) - a 3% decline from the 66,772 million reported in 2018. For 2020, VMT dropped substantially to 53,694 million - a direct result of COVID-19 travel restrictions put in place during 2020, including the lockdown of the state in late March and April.

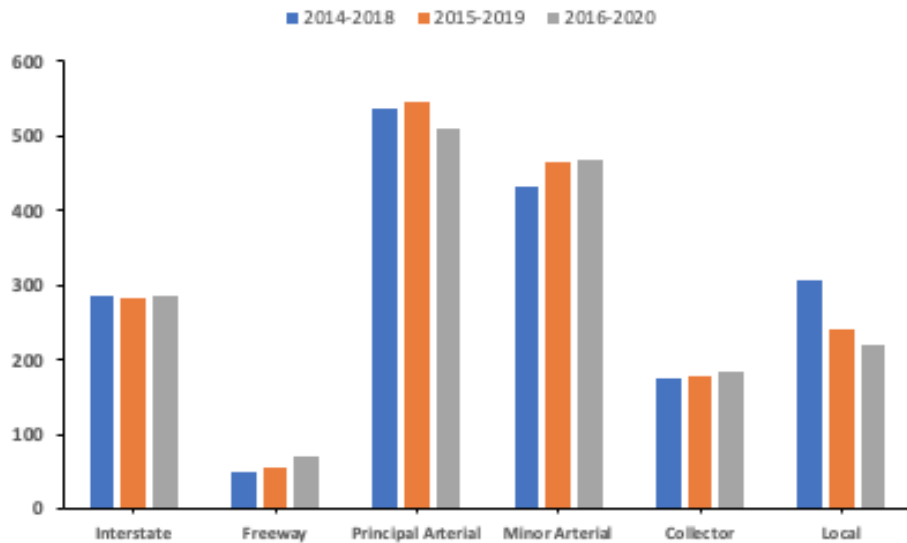
In 2020, as it was in 2019, urban roadways accounted for over 95% of the vehicle miles traveled reported in Massachusetts. Unsurprisingly, more than 90% of traffic fatalities have taken place along roadways classified as ‘urban’ in Massachusetts since 2016.

There are six Functional Roadway Classifications that Massachusetts uses to categorize crashes:

- 1.) **Interstate** – the highest level of mobility for drivers, the lowest level of access to land (i.e., requires exits to reach towns and city areas, and highest posted speed limits (typically 55 to 75 mph). Roadway crosses multiple state lines usually. Mass Pike (I-90), I-91, and I-95 are examples.
- 2.) **Freeway/Highway** – typically state roads that operate similarly to the interstate. Route 24 runs from Canton to Fall River, and Route 128 ‘inner beltway’ runs from Norwood to Gloucester.
- 3.) **Principal Arterial** – these are the main roads that run through major cities and towns; the speed limit can range between 30 to 50 mph and may have a barrier separating the traffic, allows for better access to major commercial regions or thoroughfares. Route 60 runs through Arlington or Route 9 that runs from Boston to the Berkshire Region.
- 4.) **Minor Arterial** – Speeds are slightly lower (25 – 45 mph), connect high volume principal arterials, and have higher access to towns and cities. Route 202 segment that connects Route 9 in Belchertown to downtown Holyoke is an example of a minor arterial.
- 5.) **Collector** – these roadways connect principal and minor arterials to local roads. Speeds are typically in the 20 – 40 mph range. Littleton Road in Harvard, which runs from the town center and intersects Route 2 (a principal arterial), is an example of a collector.
- 6.) **Local** – these roads have the lowest posted speed limits, limited mobility (no passing or two-lane roads in the same direction), and are the primary way to access residential areas, businesses, and farms.

Since 2014, more than 50% of fatalities along Massachusetts roadways took place on either Principal or Minor Arterials. Interestingly, fatalities along local roads have declined substantially during this time. From 2016 - 2020, local roads accounted for 12.7% of all fatalities, down from 17.2% reported for 2014 - 2018. Interstate fatalities remained relatively constant from 2014 - 2020, accounting for 16% of all fatalities during each five-year period (2018, 2019, 2020).

Fatalities by Roadway Type

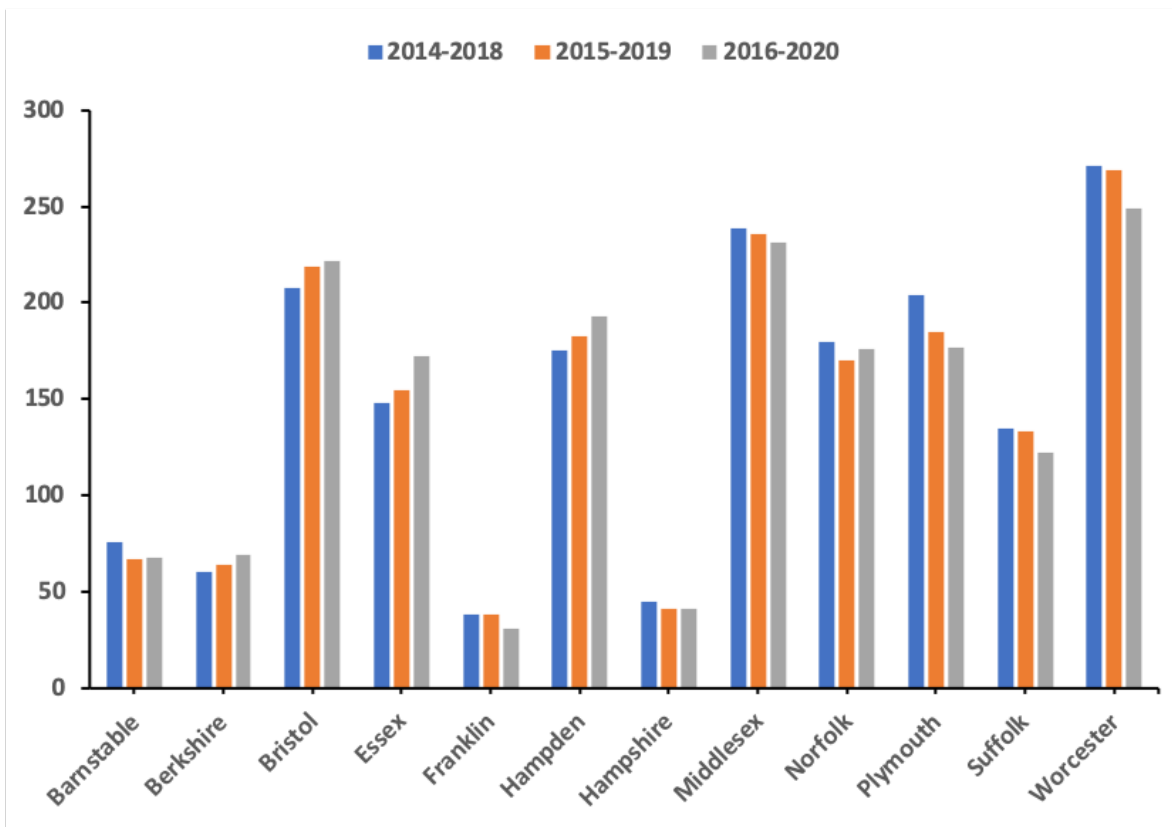


There are fourteen counties across Massachusetts: Barnstable, Berkshire, Bristol, Dukes, Essex, Franklin, Hampden, Hampshire, Middlesex, Nantucket, Norfolk, Plymouth, Suffolk, and Worcester. Over 70% of the population lives in the eastern part of the state in Essex, Middlesex, Suffolk, Norfolk, Bristol, and Plymouth counties. The east region of Massachusetts also encompasses most of the major roadways such as I-495, I-95, I-93, I-195, Rt. 128, Rt. 24, Rt. 9, Rt. 3, and Rt. 2. Boston, the capital, is in Suffolk County and is the largest city in the Commonwealth.

Massachusetts Counties and Major Roadways



While the eastern part of the state has more roadways and people than central or western Massachusetts, it also has an extensive public transportation system that helps alleviate the traffic congestion that comes with daily commutes into the Metro Boston area. The Massachusetts Bay Transportation Authority (MBTA) provides subway, bus, and commuter rail options for commuters as well as boat transportation from several coastal communities in locations north and south of Boston. Having public transportation options available has resulted in Suffolk County accounting for only 6.9% of all traffic fatalities from 2016-2020 despite the heavy traffic volume into and out of Metro Boston every day. Worcester County, which has end terminals for the commuter rail and a robust local public bus transportation system, accounted for 14% of all traffic fatalities during the same time. Hampden County, which houses the Springfield metro area, has the interchange of the Mass Pike (I-90) and I-91 within it and I-291. From 2016-2020, 11% of traffic fatalities occurred in this county.

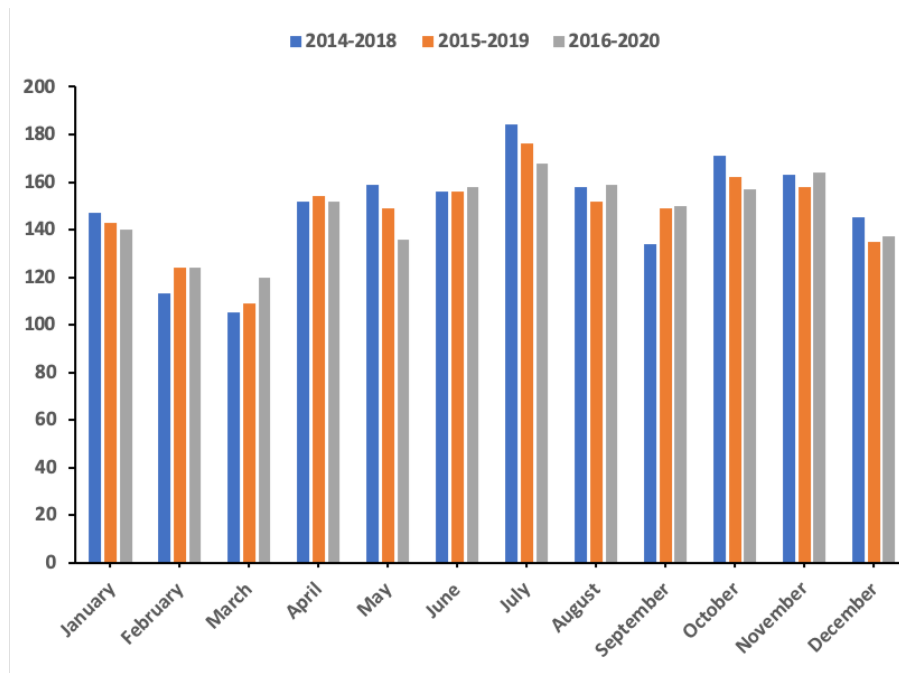


The COVID-19 pandemic and subsequent travel restrictions during 2020 impacted the fatalities reported for the five years 2016 - 2020 compared to previous five-year periods (2014-2018, 2015-2019). Of the 12 counties listed in Figure 5 above (Nantucket and Dukes were not included due to low or no fatalities reported), eight reported a decline in five-year total fatalities from 2018 to 2020. The four counties that did not show a drop - Berkshire, Bristol, Essex, and Hampden - all had increases in five-year totals for each year from 2018 to 2020. Essex County, located in northeastern Massachusetts, reported the most considerable rise from 2018 with a 16.2% increase in fatalities from 148 for 2014-2018 to 172 for 2016-2020.

To get a clearer picture of traffic fatalities in Massachusetts, OGR looked at six key fatality measures compared to 2014-2018 and 2015-2019 to provide further supporting data of where and when traffic fatalities occur. These measures are:

- Fatalities by Month
- Fatalities by Day-of-Week
- Fatalities by Person Type
- Fatalities by Time-of-Day
- Fatalities by Age Range

Fatalities by Month

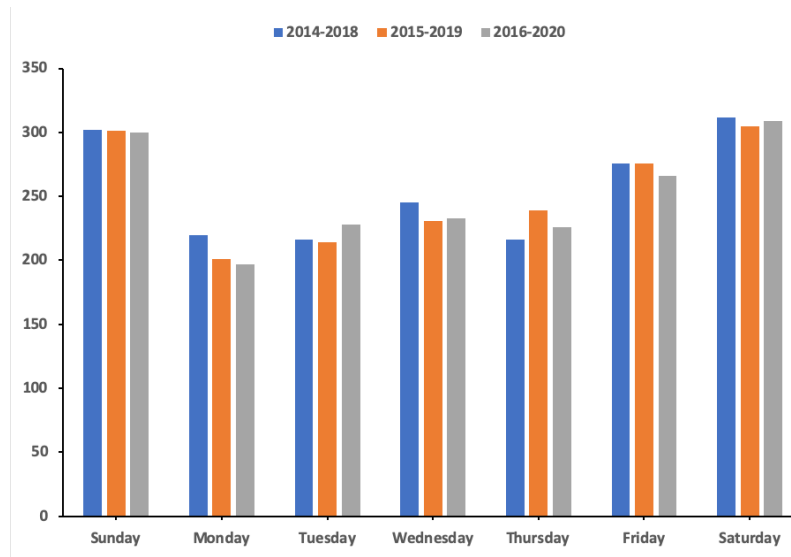


With the Fourth of July celebration, no school for young drivers, and increased traffic from out-of-state to popular tourist attractions (i.e., Cape Cod), July has been the top month for fatalities for each five-year period from 2014 to 2020. Despite July’s lead as the most dangerous month of the year, total fatalities for the month have dropped nearly 9% since 2014-2018.

February and March, typically the months with the lowest fatality counts, saw a 10% and 14% rise in fatalities, respectively, from 2014 - 2018 to 2016 - 2020. Notwithstanding the recent increase in February and March, the data does show that traffic fatalities are more likely to occur during warmer months than colder ones. Since 2014, 62% of traffic fatalities took place between April and October.

Fatalities by Day-of-Week

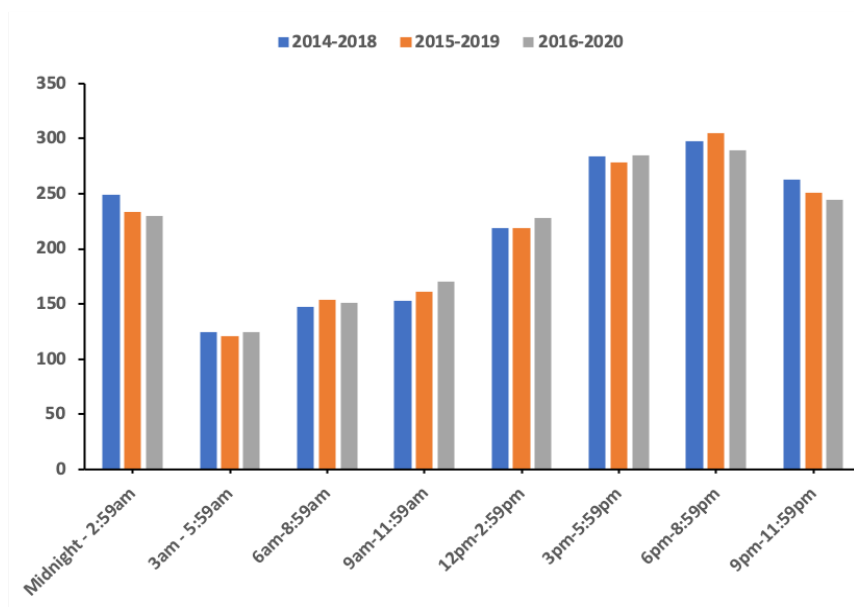
Fatalities have proven to be consistently higher during the weekend days (Saturday, Sunday) when compared to any weekday over the past two five-year periods. Since 2014, Saturday and Sunday have accounted for 32% of all traffic fatalities reported. If Friday were included, the three-day period would be responsible for 46% of fatalities.



During these two days, there is a higher likelihood of impaired driving and speeding being factors in a fatal crash and speeding. Furthermore, more people are driving on the weekend than the weekday, and those who typically take public transit to work from Monday through Friday are not working.

Fatalities have fallen slightly for Saturday and Sunday, with the five-year total declining 1% and 0.7% from 2014 - 2018 to 2016 - 2020. During the same period, though, five-year fatalities rose on Tuesday and Thursday, 5.6% and 4.6%, respectively. Monday had the most significant decline, with five-year fatalities falling 11% from 220 in 2018 to 197 in 2020.

Fatalities by Time-of-Day

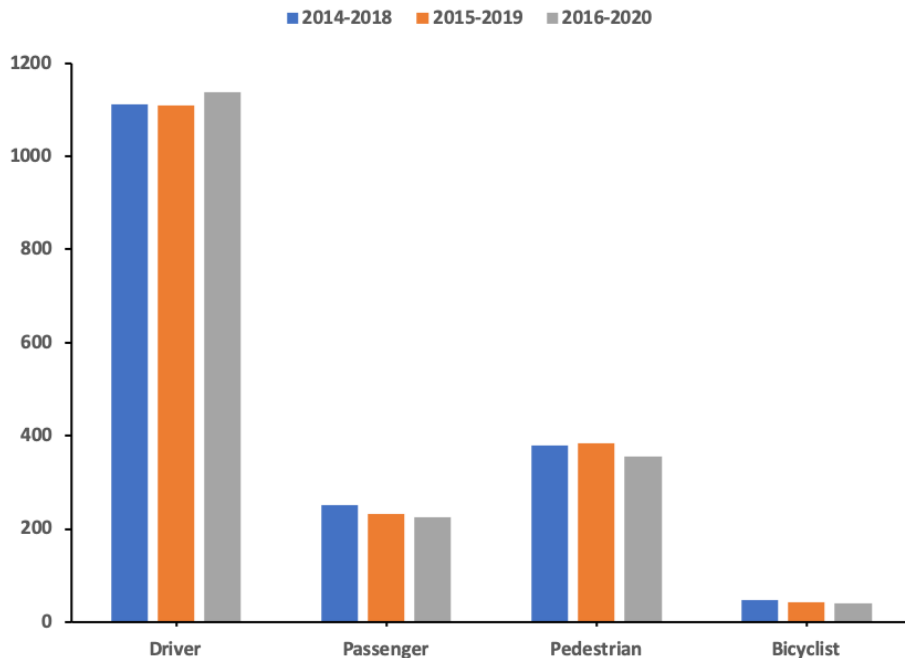


It is clear, by the data presented, traffic fatalities are more frequent between 3 pm and 2:59 am than at any other time. This 12-hour stretch accounted for 64% of all fatalities since 2014. Kids are getting out of school during this period, parents are heading to pick them up or go to an afterschool event, and folks are

heading out for shopping and eating in the evening. There is a higher likelihood of crashes involving aggravating circumstances such as speeding, lack of proper restraint, and impaired drivers. Data provided in key sections of this HSP will further support this contention.

Despite the heightened fatalities, the five-year fatalities for 9 pm to 11:59 pm and 12 am to 2:59 am declined 7.6% and 7.2%, from 2014-2018 to 2016-2020. The number of fatalities reported in 2019 for 9 pm - 2:59 am was 94; in 2020, 79. COVID-19 restrictions have resulted in fewer people engaging in social behaviors such as eating out at restaurants, drinking at bars, and seeing movies in theatres, leading to fewer cars on the road.

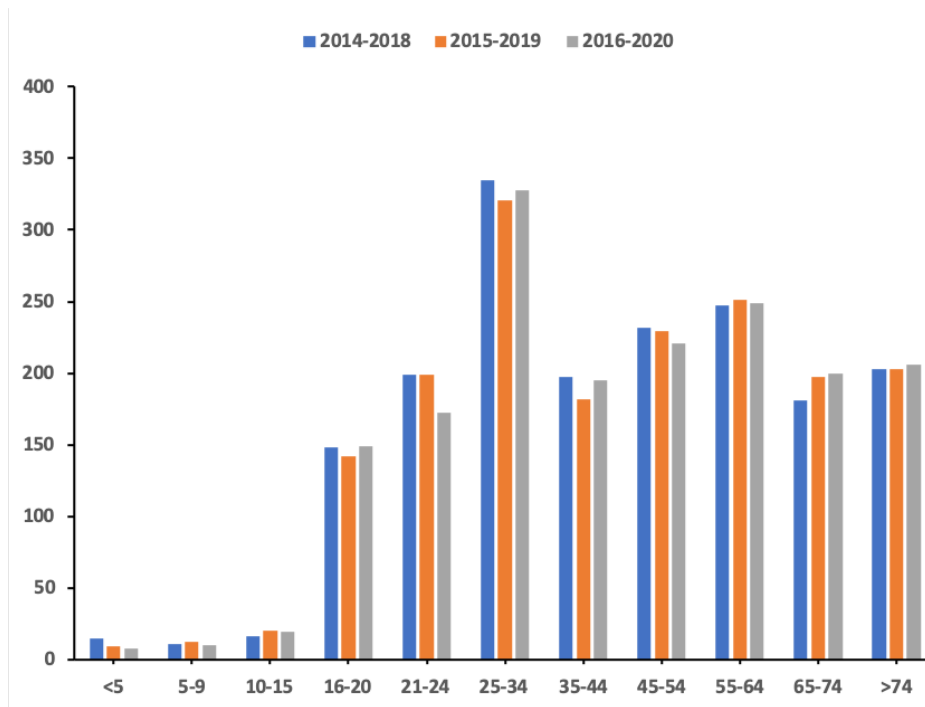
Fatalities by Person Type



Drivers have led all person types with nearly 60% of all traffic fatalities since 2014. Pedestrians accounted for 19%; motor vehicle passengers, 12%; and lastly bicyclists, with 2% of deaths. The higher numbers for pedestrians than passengers can be likely attributed to the difference in protective gear - seatbelts and airbags for passengers versus none for pedestrians. The survival rate for a person being hit by a one-ton vehicle is extremely low instead of sitting inside a one-ton car during a crash.

Since 2014, the five-year totals of pedestrian fatalities have declined 10%. This drop has been helped by a 31% reduction in pedestrian fatalities from 77 in 2019 to 53 in 2020. While COVID-19 restrictions have impacted the decline in pedestrian fatalities, the city of Boston would usually have the most pedestrian deaths. Still, the pandemic reduced the volume of traffic coming in and out of the city. It reduced the number of people walking around due to many employees working remotely instead of in the office.

Fatalities by Age Group



Fatalities among those aged 25 - 34 accounted for 19% of all traffic fatalities, followed by 14% for deaths among those aged 55 - 64. There was a distinctive difference in the breakdown of deaths by person type for these two age groups. For the 25-34 age group, drivers accounted for 77% of fatalities; passengers, 9%; and pedestrians, 12%. In contrast, drivers made up 60% of drivers age 55-64; passengers, 9%; and pedestrians, 28%.

Fatalities among those under 21 accounted for 10% of all fatalities since 2014, with eight percent attributed to those between 16 and 20.

There is a trend towards more fatalities among those aged 55 or older. The five-year totals for fatalities 55 or older have increased by nearly 4% since 2014-2018, rising from 631 to 655 for 2016-2020. Data shown later in this HSP will reveal that the 55+ crowd has accounted for a large portion of pedestrian fatalities in recent years, which has fueled the increase in total fatalities for this demographic since 2014.

Massachusetts' child passenger safety law has helped keep the number of deaths among the under 16 age groups remarkably low. Furthermore, the tireless efforts by OGR's partners, including local police departments, State Police barracks, hospitals, and non-profit traffic safety organizations in educating caregivers and families on the importance of properly installing child car seats have also contributed to the low mortality rate of passengers under the age of 15 in a crash.

Fatalities by Town

From 2014 - 2020, Boston led all communities in Massachusetts with 160 traffic fatalities, followed by Springfield and Worcester. Below is a list of the top 25 communities for traffic fatalities with total fatalities in ():

- Boston (160)
- Springfield (87)
- Worcester (64)
- Brockton (59)
- New Bedford (40)
- Quincy (39)
- Fall River (38)
- Middleborough (34)
- Chicopee (29)
- Lowell (26)
- Wareham (25)
- West Springfield (25)
- Andover (23)
- Haverhill (23)
- Dartmouth (23)
- Methuen (23)
- Plymouth (22)
- Holyoke (21)
- Raynham (21)
- Weymouth (21)
- Taunton (20)
- Barnstable (20)
- Westport (20)
- Attleboro (20)
- Chelmsford (19)

These 25 cities – representing only seven percent of all Massachusetts towns – accounted for 37% of total traffic fatalities reported from 2014 to 2020 as well as a third of Massachusetts’ total population. Unsurprisingly, as the state’s capital and a major business hub of New England, Boston had the highest deaths.

Of note, 13 of the 25 towns listed come from counties south of Boston. Seven from Bristol County (Dartmouth, Fall River, Mansfield, New Bedford, Raynham, Taunton, Westport); four from Plymouth County (Brockton, Middleborough, Plymouth, Wareham); and two from Norfolk (Quincy, Weymouth).

County	2014-2020 Total Fatalities	# Top 25 Towns	Total Fatalities Top Towns	Pct of All Fatalities in County
Barnstable	96	1	20	20.8%
Bristol	303	7	182	60.1%
Essex	222	3	69	31.1%
Hampden	257	3	141	54.9%
Hampshire	57	1	21	36.8%
Middlesex	324	2	45	13.9%
Norfolk	255	2	60	23.5%
Plymouth	265	4	140	52.8%
Suffolk	178	1	160	89.9%
Worcester	352	1	64	18.2%

The chart above reveals how the top towns differ in how they account for fatalities within a county. For example, both Essex and Hampden have three municipalities listed in the top 25, yet the percentage of all fatalities for the county is drastically different. For Essex, the top towns (Andover, Haverhill, Methuen) accounted for slightly more than 30% of its total fatalities, whereas, in Hampden County, the communities of Chicopee, Springfield, and West Springfield had approximately 55% of all the fatalities in the county.

The higher the percentage of fatalities a Top 25 town accounts for of a county’s total fatalities, traffic fatalities are more concentrated within that town or towns and help OGR better understand where resources are needed most in each county across Massachusetts.

What does all this mean in terms of overall traffic fatality trends and frequency in Massachusetts? While analysis further on in this HSP will provide better details on trends for month, day, and time, the key takeaways from this brief overview of fatalities in Massachusetts are as follows:

- Friday, Saturday, Sunday should continue to be prime days of the week for the police to conduct enforcement activities.
- Warmer months, especially July, continue to have high fatality counts, yet fatalities are beginning to creep up in colder months.
- Principal and Minor Arterial roadways should be key locations for any overtime patrols and focus less on local roads, which have seen fatalities drop substantially since 2014.
- While Worcester and Middlesex have the most significant share of fatalities since 2014, the five-year numbers for Bristol, Essex, and Hampden have been rising every five years since 2018.
- Fatalities are more frequent between 3 pm and 3 am
- Drivers overwhelmingly account for most traffic fatalities, but pedestrian fatalities are becoming a more significant factor in traffic deaths involving a person 55 years or older.
- Southeastern Massachusetts (Bristol, Norfolk, Plymouth), which had 13 of the top 25 towns for traffic fatalities from 2014 - 2020, should be a key area to target local and State police enforcement activities and media messaging.

The data presented so far provides a basic overview of the state of motor vehicle-related fatalities in Massachusetts. The FFY 2022 HSP program area sections will further analyze data related to deaths involving impaired driving, occupant protection, speeding, distracted driving, motorcyclists, and non-motorists (pedestrians and bicyclists) within each respective program area.

The data will show that time-of-day, day-of-week, and age elements can differ from one program area to another. For example, pedestrian fatalities are most likely to occur between 3 pm and 11:59 pm. In contrast, unrestrained fatalities are most frequent between 9 pm and 2:59 am. Recognizing this difference in time is crucial to planning enforcement activities and media messaging when it comes to changing the behaviors of roadway users.

OGR will rely on a multifaceted approach to developing and selecting the projects for FFY 2022. The input used to develop the planned activities came from several sources, including:

- Data – Trends in fatalities, fatal crashes, serious injuries, seat belt usage, and traffic citations
- OGR staff – Provide extensive knowledge on current projects that may be renewed in FFY 2022, as well as critical insight into subrecipient concerns and suggestions
- Partners – State and local government, community groups, and non-profit organizations with a public safety mission.
- Subrecipients – Monthly activity reports and final reports provided excellent information on the impacts of current programs and what could be changed or improved to make the programs more effective. Program Coordinators within the HSD establish spreadsheets for every grant under their purview, covering all aspects, including funding, expenditures, and activities (i.e., number of stops, hours of patrol, types of violations issued). Since many projects are the same year-to-year, staff can compare projects across several years to see trends or where changes need to be made to improve the funds distributed.

- Open meetings – The HSD team conducted webinars in previous years to solicit feedback from partners about a wide range of traffic safety issues and will continue to do so.

By combining all the sources, OGR seeks to institute programs that will significantly reduce crashes, fatalities, injuries, and associated economic losses. Grant subrecipients will be selected for funding based on data-backed problem identification and how their proposed activities will address them.

When making funding available, an Availability of Grant Funding (AGF) is posted online through the Mass.Gov online portal. Additionally, emails are sent out to prior and potential partners, including, but not limited to, MSP, local police, municipalities, state agencies, hospitals, and non-profit organizations to ensure eligible recipients are aware of our funding opportunities. The emails provide a URL to the Mass.Gov portal where the AGFs and associated documents are posted, usually for 4-6 weeks. OGR will continue to utilize a scoring process that results in all applications being rated along with several elements and then ranked from highest to lowest to determine grant awardees. The scoring process will involve convening a Review Team (RT) to read and rate all submitted applications. Scoring will be based on application completeness, problem identification, description of planned activities, and the potential for positive impacts on a community's traffic safety.

Due to the requirements of disseminating the NHTSA funds and specific eligible recipients, many of our NHTSA grant subrecipients who receive these funds or are expected to receive these funds are not funded via a competitive review process. These subrecipients are sole source funded. A Notice of Intent is posted on the Mass.Gov portal for up to 30 days to inform the public and allow comment. Regardless, if an award is competitive or sole-sourced, all subrecipients will be required to complete an Application Template. This template will provide a full description of the program, need, goals/objectives/timeline, and a detailed budget breakdown of all costs. All expected awards are vetted by the Executive Director, EOPSS leadership, and the Governor's Office for final approval.

List of Sources of Information used in 2022 HSP

- Fatality Analysis Reporting System (FARS)
- MassDOT IMPACT Crash Data System
- Massachusetts Injury Surveillance Program
- Massachusetts Citation and Violation Data
- Massachusetts Statewide Seat Belt Observational Survey
- Federal Highway Administration (FHWA)
- Federal Bureau of Investigation (FBI) Crime Statistics
- United States Census Bureau

Coordination with the Strategic Highway Safety Plan (SHSP)

The SHSP has statewide goals, objectives, and emphasis areas developed in consultation with federal, state, local, and private sector safety stakeholders using data-driven, multi-disciplinary approaches involving engineering, education, enforcement, and emergency response.

As a key contributor to the SHSP, OGR has worked with MassDOT (the lead agency) and other key stakeholders such as EOHHS, Department of Public Health, regional transit authorities, insurance

companies, WalkBoston, and hospitals to develop a tiered classification of emphasis areas. The emphasis areas are broken into three levels: Strategic, Proactive, and Emerging.

Strategic areas: Impaired Driving, Intersection Crash Prevention, Lane Departures, Occupant Protection, Speeding/Aggressive Driving, Young Drivers, Older Drivers, Pedestrians, and Motorcycle Riders.

Proactive areas: Bicycles, Truck and Bus-Involved Crashes, At-Grade Crossing, and Traffic Incident Management Safety (formerly work zone safety). These areas represent less than 10% of annual fatalities or severe injuries but require attention to minimize potential increases.

Emerging areas: Data Systems, Drowsy Driving, and Driver Inattention (or Distracted Driving). These areas focus on improving the data system used to analyze traffic safety patterns and safety topics where data is currently inconclusive.

The HSP targets many of the same emphasis areas as the SHSP, including impaired driving, occupant protection, speeding/aggressive driving, young and older drivers, pedestrians, motorcycles, bicycles, distracted and drowsy driving, and data systems (traffic record systems). Intersection Crash Prevention, lane departures, and at-grade crossings are not emphasis areas that are within the purview of the OGR mission. Through grant funding and media messaging, OGR seeks to change driver, passenger, and non-occupant behaviors to reduce fatalities on the roadways of Massachusetts. At the same time, the SHSP looks to limit motor vehicle-related fatalities through infrastructure improvements such as better roadway design, improved crosswalks, and the upgraded installation of traffic lights. The combination of improving the physical roadway and roadway user behaviors between OGR and MassDOT provides the best strategy for reducing fatalities.

OGR also collaborates with MassDOT to establish yearly targets for three key core performance measures – fatalities, fatalities/VMT, and serious injuries. According to the federal law (FAST Act), the State HSP performance targets for fatalities, serious injuries, and fatalities/VMT are identical to the same targets reported in the HSIP annual report and coordinated through the State SHSP. This collaboration ensures that both agencies are united in the same objectives and will help drive all programs run by both agencies towards the common goals of decreasing fatalities, fatalities/VMT, and serious injuries in the long term.

The performance targets identified in the following section were established as part of the problem identification process described above. Performance targets were set by reviewing data trends from sources such as FARS, MassDOT's Crash Portal, and NHTSA reports.

For FFY 2022, based on available data, OGR and MassDOT have adopted the following goals for the calendar base year 2018-2022 for fatalities, serious injuries, and fatalities/VMT.

- Five-year average for **fatalities** will drop 4% to 340 by December 31, 2022
- Five-year average for **serious injuries** will decrease 5.2% to 2,504 by December 31, 2022
- Five-year average for **fatalities/VMT** will drop 1.8% to 0.56 by December 31, 2022

Performance Review of FFY 2021 HSP Targets

In the FFY 2021 HSP, OGR provided performance targets for sixteen traffic safety performance measures. Most of the performance targets had an end date of December 31, 2021, so all targets are currently ‘in progress’. The Traffic Records-related targets for FFY 2021 are provided after this section.

Performance Measures for FFY 2021	Progress
C-1) Number of traffic fatalities (FARS)	In Progress
C-2) Number of serious injuries in traffic crashes (State crash data files)	In Progress
C-3) Fatalities/VMT (FARS, FHWA)	In Progress
C-4) Number of unrestrained passenger vehicle occupant fatalities, all seat positions (FARS)	In Progress
C-5) Number of fatalities in crashes involving a driver or motorcycle operator with a BAC of .08 and above (FARS)	In Progress
C-6) Number of speeding-related fatalities (FARS)	In Progress
C-7) Number of motorcyclist fatalities (FARS)	In Progress
C-8) Number of unhelmeted motorcyclist fatalities (FARS)	In Progress
C-9) Number of drivers age 20 or younger involved in fatal crashes (FARS)	In Progress
C-10) Number of pedestrian fatalities (FARS)	In Progress
C-11) Number of bicyclists fatalities (FARS)	In Progress
B-1) Observed seat belt use for passenger vehicles, front seat outboard occupants (survey)	In Progress
Number of distraction-affected fatal crashes	In Progress

C-1: Traffic Fatalities

In the FFY 2021 HSP, the performance target for fatalities was to decrease motor vehicle fatalities by 5.3% from the five-year average of 358 in 2018 to a five-year average of 339 by December 31, 2021

From 2018 to 2020, the five-year average for fatalities has declined 1.1% from 358 to 354. With the COVID-19 restrictions in place during 2020, OGR expected fatalities to continue falling. In 2019, fatalities were 336, down nearly 5% from 2018. Unfortunately, fatalities rose in 2020 to 345 instead of continuing downward. Given the dramatic drop in VMT due to the pandemic, meaning less traffic and fewer drivers on the roads, the increase in fatalities from 2019 was surprising.

For the first four months of 2021, there have been 97 fatalities reported in Massachusetts. During the same period in 2020, there were 97 fatalities reported as well. Despite having the same fatality count as 2020 after four months, OGR is cautiously optimistic the total number of fatalities will be lower than 2020 by December 31, 2021. The increased state and local police enforcement activity in 2021 compared to 2020 should lead to fewer fatal crashes.

C-2: Serious Injuries

For FFY 2021, the performance target for serious injuries was to decrease serious injuries by 8.3% from the five-year average of 2,814 in 2018 to a five-year average of 2,580 by December 31, 2021.

From 2018 to 2020, the five-year average for serious injuries has declined 6.3% from 2,816 to 2,639. Progress is being made towards the December 31, 2021, five-year average of 2,580. As of April 30, 2021, there have been 613 serious injuries reported in crashes along Massachusetts roadways. This is 2.5% lower than the 629 serious injuries recorded through the same period in 2020.

OGR is cautiously optimistic the five-year average of 2,580 will be met or surpassed by the end of 2022. With VMT expected to remain lower than pre-COVID levels in the near future as remote work becomes standard rather than a novelty, OGR expects fewer people on the roadways and, in turn, fewer severe injuries occurring.

C-3: Fatality/VMT

In the FFY 2021 HSP, the performance target for fatalities/VMT decreased the fatality/VMT rate by 3.5% from the five-year average of 0.57 in 2018 to a five-year average of 0.55 by December 31, 2021.

This performance target is in progress. The fatality/VMT rate is based on preliminary fatality and VMT numbers, which may change once finalized. This change will occur after the FFY 2021 HSP is submitted. As of April 30, 2021, the preliminary VMT for 2020 is 54,694 million. The preliminary fatality/VMT rate is 0.58, increasing from 0.56 in 2019, but the same as 0.58 in 2018. Even though VMT is expected to remain lower than pre-COVID numbers, MassDOT projects VMT to rise in 2021 and 2022 as the economy opens more and more. With the rise in VMT and the expectation that fatalities will decline in 2021, OGR foresees a lowered fatality/VMT rate for 2021 and 2022.

C-4: Unrestrained Motor Vehicle Occupant Fatalities

For FFY 2021, the performance target was to decrease unrestrained passenger vehicle occupant fatalities by 2% from the five-year average of 110 in 2018 to a five-year average of 108 by December 31, 2021. This target has been met and surpassed as of December 31, 2020.

From 2018 to 2020, the five-year average for unrestrained fatalities declined 3.8% from 110 to 106. The number of unrestrained fatalities reported in 2019 and 2020 was 96 and 84, respectively. As of March 31, 2021, there have been 12 unrestrained fatalities reported in Massachusetts - which is 50% lower than the 24 reported for the same period in 2020.

OGR expects the five-year average to continue falling and surpassing the target of 108 for December 31, 2022. Unrestrained fatalities have fallen each year since recording 133 deaths in 2017. With the decline in VMT resulting from COVID-19 expected in 2021 and 2022, fewer travelers on the roadways will keep the level of unrestrained fatalities low.

C-5: Alcohol-Impaired Driving Fatalities (BAC = .08 or higher)

In the FFY 2021 HSP, the performance target was to decrease alcohol-impaired driving fatalities by 3% from the five-year average of 127 in 2018 to a five-year average of 123 by December 31, 2021.

Progress is being made on this target. The total number of alcohol-impaired fatalities for the five years 2016-2020 was 565, down from 636 for 2014-2018 and 603 for 2015-2019. The rate of alcohol-impaired fatalities per 100 million VMT dropped from 0.19 in 2018 to 0.12 in 2020.

The five-year average for 2016-2020 was 113, surpassing the target set in the FFY 2021 HSP. This decline in the five-year average is primarily due to the drop in alcohol-impaired driving fatalities in 2020 to 67. It was 110 the year before. This is likely a result of COVID-19 restrictions implemented throughout 2020. With the lifting of restrictions in 2021, it is improbable the number of alcohol-impaired driving fatalities will be as low in 2021 and 2022.

The number of alcohol-impaired driving fatalities has declined each year since 2016, falling from 144 to 67. With the continued success of OGR's "Drive Sober or Get Pulled Over" mobilizations and media messaging in 2021 and 2022, OGR is cautiously optimistic that the five-year average will remain below 123 in the coming years.

C-6: Speed-Related Fatalities

In the FFY 2021 HSP, the performance target was to decrease speed-related fatalities by 5% from the five-year average of 100 in 2018 to a five-year average of 95 by December 31, 2021.

This performance target is in progress. The five-year average of speeding fatalities dropped from 101 in 2018 to 95 in 2020, which equals the target set in the FFY 2021 HSP. This represents a decline of 6%. The number of speeding fatalities has decreased with each consecutive year since 2016. Starting at 126 in 2016, the number of deaths for 2017, 2018, 2019, and 2020 were 103, 100, 78, and 69, respectively.

OGR is optimistic speeding fatalities will continue to decline as the post-pandemic world will have more people remotely working, reducing the number of vehicles on the roadways. Furthermore, the decline in

unrestrained fatalities in recent years coupled with the seatbelt survey usage rate rising above 80% for two consecutive years points to the likelihood of more motor vehicle occupants using a seatbelt.

C-7: Motorcyclist Fatalities

In the FFY 2021 HSP, the performance target was to decrease motorcyclist fatalities by 3% from the five-year average of 51 in 2018 to a five-year average of 49 by December 31, 2021.

From 2018 to 2020, the five-year average of motorcycle fatalities increased slightly from 51 to 52. After motorcycle fatalities dropped from 58 in 2018 to 48 in 2019, the number of deaths on the roadways rose again to 58 in 2020. One possible contributing factor to the increase in motorcycle fatalities in 2020 is the COVID-19 pandemic, which curtailed the VMT driven in the state during 2020. Because fewer cars were on the roadways, it is possible motorcyclists may have taken advantage of this to hit the road in more significant numbers than would if traffic was the same as pre-pandemic.

While the five-year average changed very little, it concerns that three of the last four years have seen motorcycle fatalities over 50. As a percentage of all traffic fatalities, over the previous three five-year periods (2014-2018, 2015-2019, 2016-2020), motorcycle fatalities have accounted for 14.3%, 14.5%, and 14.7%, respectively.

On the plus side, the number of motorcycle fatalities reported for the first three months of 2021 is two, which is lower than the six reported during the same period in 2020. OGR is optimistic this could mean motorcycle fatalities will be lower in 2021 than in 2020.

C-8: Unhelmeted Motorcyclist Fatalities

In the FFY 2021 HSP, the performance target was to decrease unhelmeted motorcycle fatalities by 25% from the five-year average of 4 in 2018 to a five-year average of 3 by December 31, 2021.

From 2018 to 2020, the five-year average of unhelmeted fatalities declined from 4 to 3, achieving the five-year average target for December 31, 2021. Even though the five-year average dropped, unhelmeted fatalities increased from zero in 2019 to 5 in 2020. Through the first quarter of 2021, neither of the two reported motorcycle fatalities were unhelmeted. OGR is hopeful this trend will continue through 2021 and move the five-year average even lower.

C-9: Young Drivers (Age 20 or younger) Involved in a Fatal Crash

In the FFY 2021 HSP, the performance target was to decrease the number of young drivers (age 20 or under) involved in fatal crashes by 5% from the five-year average of 34 in 2018 to a five-year average of 32 by December 31, 2021.

From 2018 to 2020, the five-year average rose 3.5% from 34 to 36. After dropping to 27 in 2018 from 36, the number of young drivers involved in a fatal crash jumped to 31 in 2019. It then increased to 36 in 2020. As the number of young drivers rose from 2018 to 2020, the percentage of young drivers of all drivers involved in a fatal crash also increased from 5.6% to 6.9% to 7.2%.

Through the first quarter of 2021, five drivers under 21 years of age were involved in a fatal crash. This is one less than the six drivers reported in the same period for 2020. OGR is confident increased media messaging aimed at young drivers during key mobilization periods will help reduce the number of young drivers involved in fatal crashes during 2021. In turn, it is lowering the five-year average for 2017-2021 and 2018-2022.

C-10: Pedestrian Fatalities

In the FFY 2021 HSP, the performance target was to decrease pedestrian fatalities by 4% from the five-year average of 76 in 2018 to a five-year average of 73 by December 31, 2021.

From 2018 to 2020, the five-year average for pedestrian fatalities dropped 6.1% from 76 to 71. While this target is still in progress, the five-year average for pedestrian fatalities has met and exceeded the goal of 73 as of May 31, 2021. Despite meeting the five-year target set in the FFY 2021 HSP, the COVID-19 restrictions may have impacted the number of pedestrian fatalities in 2020 as it fell 31% from 77 in 2019 to 53. It was entirely possible the pedestrian fatalities in 2020 will be an outlier, and the number of deaths will move towards pre-pandemic levels in 2021, 2022. Given that the fatalities were over 70 from 2014 to 2019, this is a feasible scenario.

During the first quarter of 2021, there have been 13 pedestrian fatalities compared to seven reported during the first quarter of 2020. With vaccinations ramping up and restrictions loosening, increased pedestrian fatalities in 2021 from 2020 are anticipated. OGR plans to increase media messaging on pedestrian safety and work with State and local police to target enforcement in high pedestrian traffic areas throughout 2021.

C-11: Bicyclist Fatalities

In the FFY 2021 HSP, the performance target was to decrease bicyclist fatalities by 10% from the five-year average of 9 in 2018 to a five-year average of 8 by December 31, 2021.

From 2018 to 2020, the five-year average for bicyclist fatalities declined from 9 to 8. With this drop, the five-year average target set in the FFY 2021 HSP has been met as of May 31, 2021. It must be cautioned that this target is still in progress. While the five-year average went down 11%, the number of bicyclist fatalities reported in 2020 was ten, double recorded in 2019. As of March 31, 2021, there has been one bicyclist fatality in Massachusetts. It remains to be seen if the warmer months will see a spike in bicyclist fatalities.

For FFY 2022, OGR hopes to expand participation in the Pedestrian and Bicycle program by including it within the Municipal Road Safety Grant program. The more local police departments involved, the more impact enforcement at bicyclist safety will have on communities.

B-1: Observed Seat Belt Usage

In the FFY 2021 HSP, the performance target was to increase the observed seat belt use rate by 4% from the five-year average of 78 in 2019 to a five-year average of 81 by December 31, 2021.

Due to the COVID-19 pandemic, no statewide seatbelt observational survey was conducted in 2020. NHTSA had issued a waiver that allowed states to forgo the survey out of concern for the health and safety of persons involved. OGR will conduct the survey in 2021 and submit the results to NHTSA by August 31, 2021.

While the survey was delayed in 2020, it must be noted that the five-year average for 2015 - 2019 was 78% and does meet the target set for this performance measure in the FFY 2019 HSP. With the seat belt rate remaining above 80% for two consecutive years and unrestrained fatalities dropping 13% in 2020, OGR is confident the seatbelt survey usage rate will continue rising in the coming years.

NC-1: Distraction-Affected Fatal Crashes

In the FFY 2021 HSP, the performance target decreased distraction-affected fatal crashes by 5% from the five-year average of 42 in 2018 to 40 by December 31, 2021.

From 2018 to 2020, the five-year average for distraction-affected fatal crashes declined substantially from 42 to 31. This decrease was due to lower than usual distraction-affected fatal crashes in 2019 and 2020, which were 23 and 14, respectively. The 2015-2019 five-year average was 41, a 2.4% decline from 2014-2018. In 2020, the five-year average plummeted to 31, a 25% drop.

For 2020, the drop in crashes is attributed to COVID-19 restrictions. There were fewer vehicles on the road than in 2019, shifting to teleworking at most companies.

Although this target is still in progress, the five-year average for 2016-2020 surpassed the goal of 40 set in the FFY 2020 HSP. Despite this positive result, it must be noted that distracted driving is notoriously hard to prove for police when reporting on a motor vehicle crash. Unless a driver admits to it or a witness saw the driver be distracted at the time of impact, the number of actual distracted driving fatal crashes is likely much higher than what is available in the crash reporting data.

Looking forward, OGR expects the level of distraction-affected fatal crashes to rise in 2021 and 2022 as the COVID-19 restrictions are eased and employees begin returning to the office to work, whether once a week or five days a week.

Review of FFY 2021 Traffic Records-Related Performance Targets

TR-1: Decrease % of MSP-submitted crash reports with invalid/incomplete AWW fields

For FFY 2021, the first TR performance target was to decrease the percentage of Massachusetts State Police-submitted crash reports with invalid or incomplete entries in Accepted with Warning (AWW) fields from 3.7% as of August 31, 2019, to 2.78% by December 31, 2021.

Progress: As of 4/22/21, the current performance measure for the period of 1/1/21-3/31/21 is at 3.4% (4,453/132,726) of crash report fields from the RMV-AWW initiative, which have invalid/incomplete data – illustrating a reduction of .3 relative percentage points, 33% of progress towards the stated goal.

However, since the work being done by this project has yet to be implemented, this reduction is likely the positive impact of ongoing data quality improvement work by the Registry of Motor Vehicles.

TR-2: Exceed January to October 2020 benchmarks for the RMV FARS unit

For FFY 2021, the second TR performance target exceeded the January to October 2020 benchmarks for the RMV FARS Unit - for timeliness, completeness, and quality - by 1% for January to October 2021.

Progress: The January – October 2020 benchmarks for the RMV FARS Unit were 86.94% for the timeliness, 83.77% for completeness, and 79.87% for overall case quality. The averaged measurements for benchmarks from January – April 2021 are 95.11% for timeliness, 94.94% for completeness, and 90.29% for overall quality - so to date, well exceeding the 1% performance goal for all three measures.

TR-3: Installation of printers for MACCS system in law enforcement vehicles

For FFY 2021, the third TR performance target was to install approximately 800 printers for the Motor Vehicle Automated Citation and Crash System in vehicles at an estimated 100 local law enforcement agencies by September 30, 2021.

Progress: By April 2021, 310 printers had been installed at 36 local law enforcement agencies.

TR-4: Increase acceptable resubmissions to RMV CDS of prior rejected reports

For FFY 2021, the fourth TR performance target was to increase acceptable resubmissions to RMV Crash Data System of previously rejected reports within a test group of 30 local police departments from benchmark to be established in October 2020 by 3% as of December 31, 2021.

Progress: Due to an administrative challenge involving hiring a proposed clerk at MassDOT/RMV, this project was canceled before it could get underway by MassDOT/RMV in January 2021. The unused funds from this project will be added to those available in TR 22-04.

TR-5: Decrease the number of state and local police-submitted crash reports Accepted with Warning (AWW) for not having complete/valid entries

For FFY 2021, the fifth TR performance target was to decrease the number of state and local police-submitted crash reports accepted with a warning (AWW) for not having complete or valid entries within 2019 AWW fields from 45% as of June 30, 2019, to 30% by December 31, 2021.

Progress: After submitting this performance target in the FFY 21 HSP, there was a need to revise the benchmark/performance measure for this project to be conducted within FFY 21 and not run into FFY 22. So, the target stated above was not met.

The replacement target is: Reduce the number of MA crash reports from state and local police that have incomplete/invalid data in any of the fields included in the RMV 2018/2019 AWW initiative by 5% (2.2

relative percentage points) from 42.2% (10,676/25,295) for the period of 1/1/20 – 3/31/20 to 40% for the period of 7/1/21-9/30/21.

As of 4/22/21, the current performance measure for the period of 1/1/21-3/31/21 is at 41.0% (6,315/15,390) of crash reports which have invalid/incomplete data in any of the RMV-AWW initiative fields – illustrating a reduction of 1.2 relative percentage points, 55% of progress towards the stated goal. However, since the work being done by this project has yet to be implemented, this reduction is likely the positive impact of ongoing data quality improvement work by the Registry of Motor Vehicles.

TR-6: Increase number of ambulance services submitting NEMSIS Version 3 reports to MATRIS

For FFY 2021, the sixth TR performance target was to increase the number of ambulance services submitting NEMSIS Version 3 reports to the Massachusetts Ambulance Trip Record Information System (MATRIS) from 213 as of March 31, 2020, to 300 by March 31, 2021.

Progress: The goal was met as of March 31, 2021, because 301 ambulance services submitted NEMSIS Version 3 reports to MATRIS.

TR-7: Increase Boston PD’s electronic crash reporting to RMV CDS

For FFY 2021, the seventh and final TR performance target was to increase the Boston Police Department’s electronic crash reporting to the RMV Crash Data System (CDS) from an estimated 7% rate as of July 1, 2020 to 70% or more by June 30, 2021.

Progress: As of April 2021, the estimated electronic crash reporting rate to the RMV’s CDS was 5.8%. This lower figure likely reflects the continuing impact of COVID on the department’s crash reporting. It is also important to note that their 405c funded e-crash reporting project that was to have started in summer 2020 didn’t begin until March 2021.

Grant-funded Activity for FFY 2020

Listed below are selected results from FFY 2020 (October 2019 – September 2020) grant-funded enforcement activities in Massachusetts as required by NHTSA. These data points provide longitudinal reference and to get a sense of how effective enforcement is within Massachusetts. It must be noted that during FFY 2020, the COVID-19 pandemic caused a shutdown of all activity in Massachusetts from mid-March 2020 to late April 2020. After the lockdown, grant activity slowly began picking up but never to pre-COVID levels.

A-1) Number of seat belt citations issued during grant-funded enforcement activities

Seat belt citations: **2,394**

Fiscal Year: **2020**

A-2) Number of impaired driving arrests made during grant-funded enforcement activities

Impaired driving arrests: **94**

Fiscal Year: **2020**

A-3) Number of speeding citations issued during grant-funded enforcement activities

Speeding citations: **5,686**

Fiscal Year A-3: **2020**

Performance Targets for FFY 2022

The chart below provides the planned target value for a performance measure to achieve by December 31, 2022. Achieving the stated target value for each measure is the overarching goal of OGR.

	Performance Measure (Data Source	Value Used	Start Value	Pct. Change	Target Value
C-1	Number of traffic fatalities (FARS)	5-yr avg.	354	4%	340
C-2	Number of serious injuries in traffic crashes (IMPACT)	5-yr avg.	2,641	5.2%	2,504
C-3	Fatalities/VMT (FARS, FHWA)	5-yr avg.	0.57	1.8%	0.56
C-4	Number of unrestrained passenger vehicle occupant fatalities, all seat positions (FARS)	5-yr avg.	106	4%	102
C-5	Number of fatalities in crashes involving a driver or motorcycle operator with a BAC of .08 and above (FARS)	5-yr avg.	113	3%	110
C-6	Number of speed-related fatalities (FARS)	5-yr avg.	95	5%	90
C-7	Number of motorcycle fatalities (FARS)	5-yr avg.	51	4%	49
C-8	Number of unhelmeted motorcyclist fatalities (FARS)	5-yr avg.	4	25%	3
C-9	Number of drivers age 20 or younger involved in fatal crashes (FARS)	5-yr avg.	36	5%	34
C-10	Number of pedestrian fatalities	5-yr avg.	71	4%	68
C-11	Number of bicyclists fatalities	5-yr avg.	8	10%	7
B-1	Observed seat belt use for passenger vehicles, front seat outboard occupants (Survey)	5-yr avg.	78	4%	81
NC-1	Number of distraction-affected fatal crashes	5-yr avg.	31	6%	29

Disclaimer: The first three performance measures and projected targets listed in this section – Traffic Fatalities, Serious Injuries, and Fatalities/VMT – are required by NHTSA and FHWA to be identical MassDOT projections in its annual Highway Safety Improvement Program (HSIP) report.

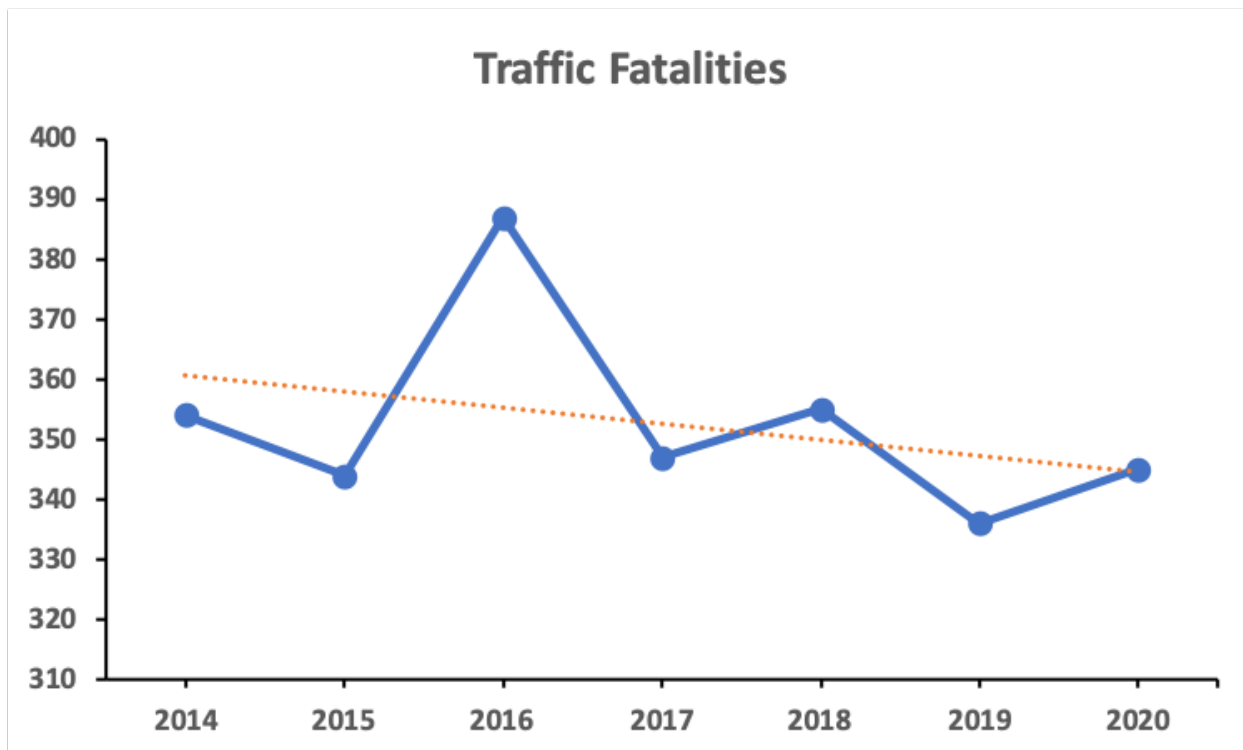
C-1 Traffic Fatalities

FFY 2022 Target: 4% drop in the five-year average from 354 in 2020 to 340 by December 31, 2022.

Since a high point of 387 in 2016, traffic fatalities have averaged 345 per year from 2017 to 2020. OGR believes that 2016 an outlier and not likely to be repeated.

From 2016-2020, the five-year average of fatalities was 354, which is 2.7% higher than the five-year average for 2015-2019, yet 1.1% lower than the 2014-2018 average. Despite the slight uptick in 2020, trendline projects fatalities to continue downward in the coming years.

*Note: the **dotted line** in the graph below and each subsequent graph in this section represents the linear trendline for the performance measure*



Even if fatalities for 2021 are the same as 2020, the five-year average for fatalities from 2017-2021 will be 346 - which is lower than the target of 347 set in the FFY 2021 HSP. OGR is cautiously optimistic that deaths will be lower in 2022 than the 345 reported in 2020. One major factor for this optimism is the loosening of COVID-19 restrictions, allowing state and local police to fully embrace the overtime enforcement activities to improve roadway safety curtailed in 2020.

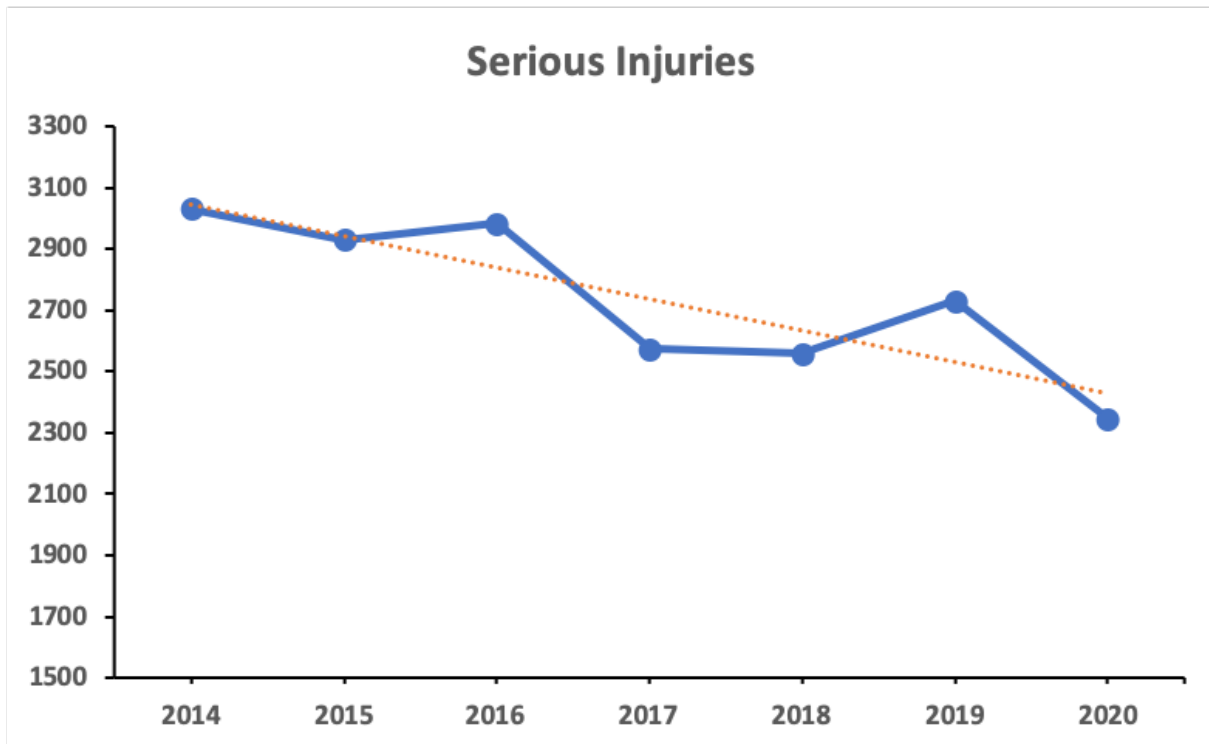
For example, during FFY 2020, MSP conducted only 12 sobriety checkpoints out of caution not to expose officers and motorists to COVID-19. In previous FFY, MSP would perform upwards to 70, 80 sobriety

checkpoints. For FFY 2022, OGR is confident the loosening of restrictions will lead to pre-COVID activity levels by subgrantees.

OGR is also hopeful that the slate of planned activities for FFY 2021 will help reduce traffic fatalities. The integrated approach of enforcement, education, and media outreach positively impact occupant and non-occupant behaviors in Massachusetts.

C-2 Serious Injuries

FFY 2022 Target: 5.2% decrease in the five-year average from 2,641 in 2020 to 2,504 by December 31, 2022.



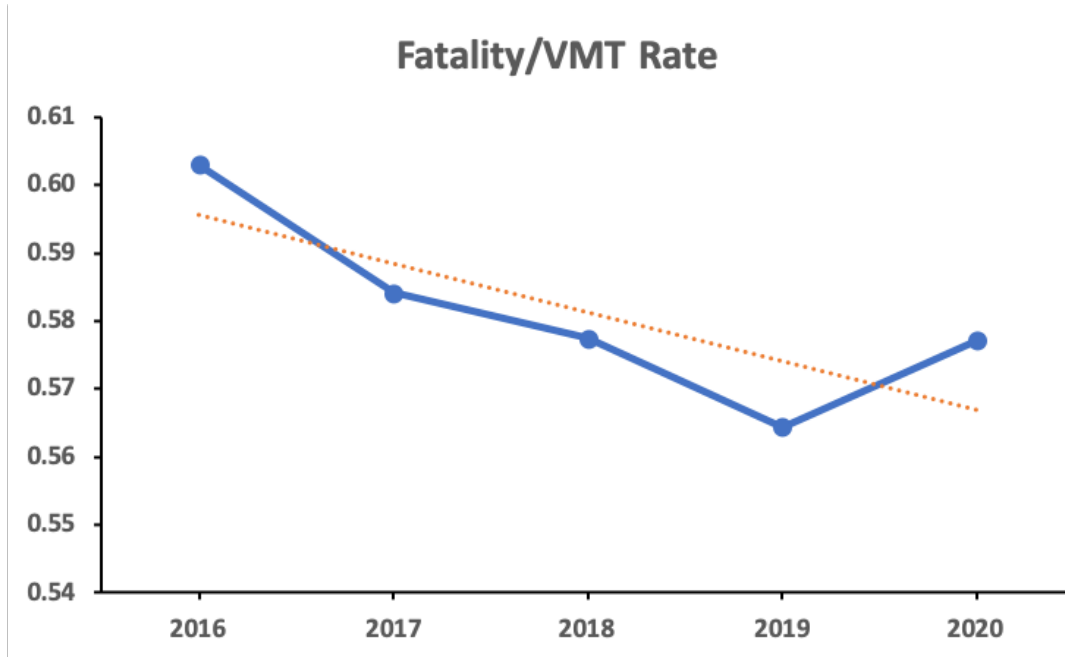
Serious injuries have declined nearly 30% since 2014, and OGR is optimistic that it will continue falling as seat belt usage has remained over 80% for two consecutive years. Safety improvements to vehicles such as collision alerts and automatic braking will further increase the safety of users of Massachusetts' roadways. Furthermore, implementing the Hands-Free Law in early 2020 will make drivers pay more attention to driving instead of their phones and other electronic devices.

OGR expects its FFY 2022 planned activities to positively impact serious injuries with enforcement, education, and media campaigns to increase safety awareness, especially wearing seat belts, distractions, impairment, and maintaining legal speeds. Each person that wears a seat belt drives attentively, soberly, and under control increases his/her chances of surviving a crash with minimal or no injuries.

C-3 Fatality/VMT Rate

FFY 2022 Target: 1.8% decline in the five-year average from 0.57 in 2020 to 0.56 by December 31, 2022.

In 2020, Massachusetts' vehicle miles traveled reported 53,694 million - a 17% decline from the 64,889 million reported in 2019. The reason for this dramatic drop is the COVID-19 pandemic which severely restricted travel throughout 2020, especially during April when the entire state was pretty much locked down.



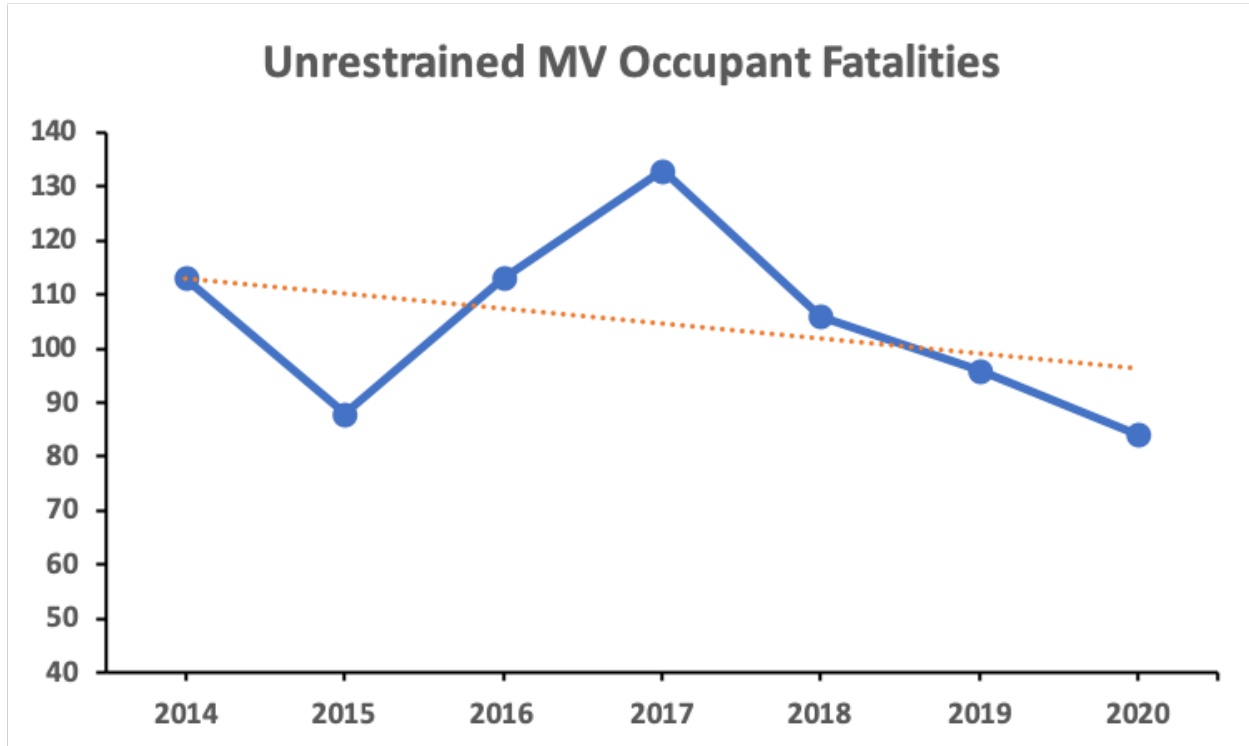
The decline in VMT adversely affected Massachusetts's fatality/VMT rate in 2020, leading to the first increase in the yearly fatality/VMT rate since 2016. It jumped to 0.63 from 0.57 the previous year.

The Massachusetts Department of Transportation projects VMT to rise again as travel restrictions are dropped and the majority of the population gets vaccinated, leading people to resume pre-pandemic activities. With this expected increase in VMT, along with the projected decline in fatalities for 2021 and 2022, OGR is cautiously optimistic that the fatality/VMT rate will drop again in 2021 and 2022.

C-4 Unrestrained MV Occupant Fatalities

FFY 2022 Target: 4% decline in the five-year average from 106 in 2020 to 102 by December 31, 2022.

Unrestrained fatalities have declined 37% since reporting 133 in 2017. The 84 unrestrained fatalities for 2020 is the lowest amount reported in Massachusetts in well over a decade. Coupled with two straight years (2018, 2019) of above 80% seat belt usage reported in the Statewide Observational Survey, OGR is cautiously optimistic that this reflects a more educated and knowledgeable motor vehicle occupant population may lead to lower unrestrained fatalities in the coming years.

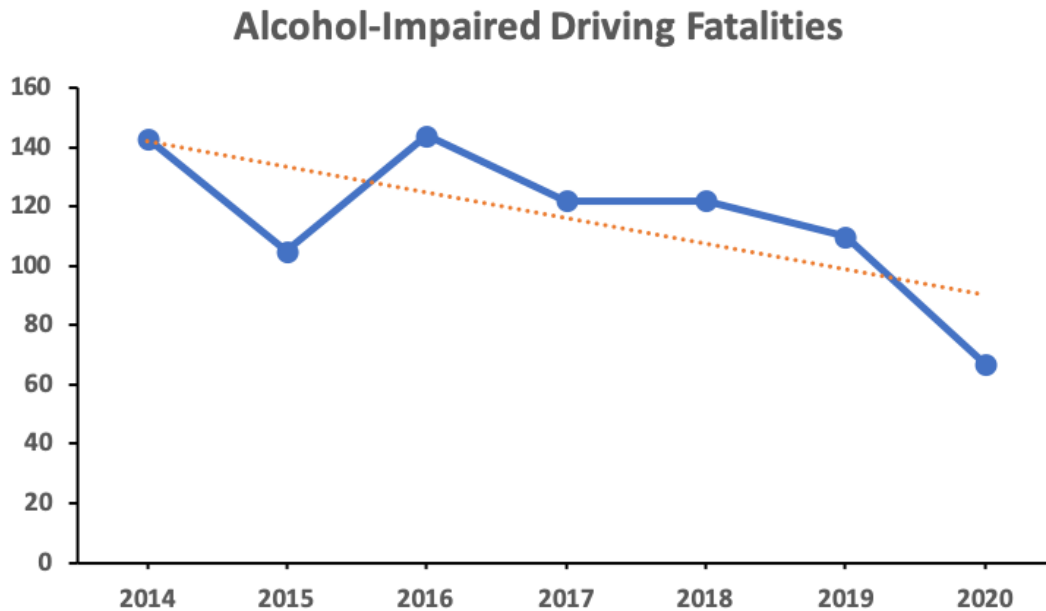


Given the combination of declining unrestrained fatalities and rising seatbelt usage rate, a 4% decline in the five-year average by December 31, 2022, is reasonable. As done in FFY 2020 and FFY 2021, OGR will utilize detailed unrestrained data to focus messaging for seat belt awareness campaigns in crucial ‘hot spots’ across Massachusetts. These ‘hot spots’ include Bristol, Norfolk, Plymouth, and Worcester counties – which accounted for over half of all unrestrained fatalities from 2016 to 2020. The focus will be on the 21-34 age group that accounted for 36% of all unrestrained fatalities. OGR will tailor messaging to appeal to drivers and passengers in that age bracket in FFY 2022.

C-5 Alcohol-Impaired Driving Fatalities (BAC = 0.08 or higher)

FFY 2022 Target: 3% decline in the five-year average from 113 in 2020 to 110 by December 31, 2022.

Alcohol-impaired fatalities have declined 54% since hitting a high-water mark of 144 in 2016. With this decline, the five-year average dropped from 127 in 2018 to 121 in 2019 and 113 in 2020. The substantial drop in 2020 is primarily attributed to the travel restrictions due to the COVID-19 pandemic. People did not engage in social gatherings at pubs, restaurants, and backyards on social distancing rules. With this drop in social activity, driving declined to lead to fewer instances of drinking and driving.



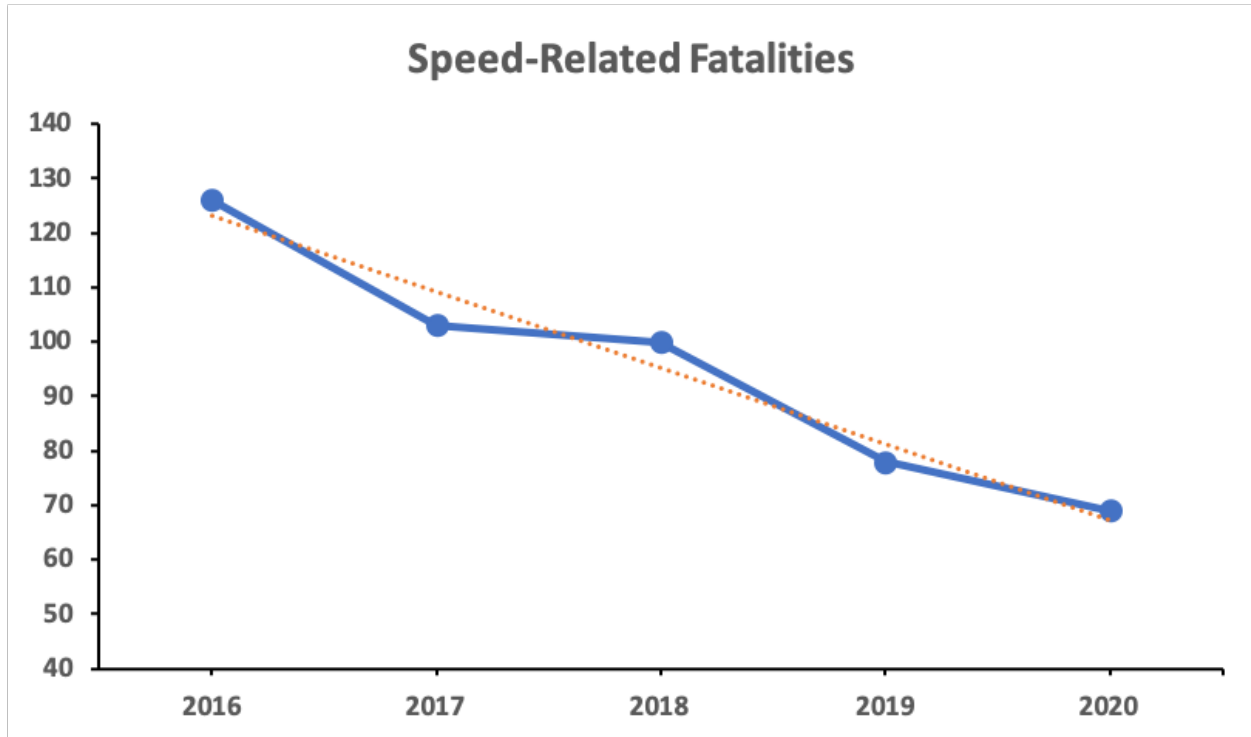
From 2015 to 2019, 73% of all alcohol-impaired fatalities were drivers, 15% were passengers, 11% pedestrians, and 1% bicyclists. Males accounted for nearly three-quarters of all alcohol-impaired driving fatalities during the five years. Two-thirds of deaths occurred in five counties: Bristol, Hampden, Middlesex, Plymouth, and Worcester. OGR will work with towns with high fatality numbers within these counties, including Dartmouth (Bristol), Springfield (Hampden), and Middleboro (Plymouth), to conduct enforcement activity during critical time/days based on data analysis.

For FFY 2022, coordination between OGR and ABCC to better target areas of high impaired driving rates as described above and expose establishments known for providing last drinks to drivers involved in fatal crashes will continue. Additionally, the MSP Sobriety Checkpoint & Saturation Patrol planned activity would be structured to focus resources on clusters of communities with high incidences of impaired driving fatalities on local roads. There will be extra emphasis on engaging local police departments to participate in the activities.

C-6 Speed-Related Fatalities

FFY 2022 Target: 5% decline in the five-year average from 95 in 2020 to 90 by December 31, 2022.

Speeding fatalities dropped 45% from 126 in 2016 to 69 in 2020. Speeding fatalities have declined each year since 2016. The five-year average has also reduced from 101 in 2018 to 95 in 2020, representing a 6% drop.

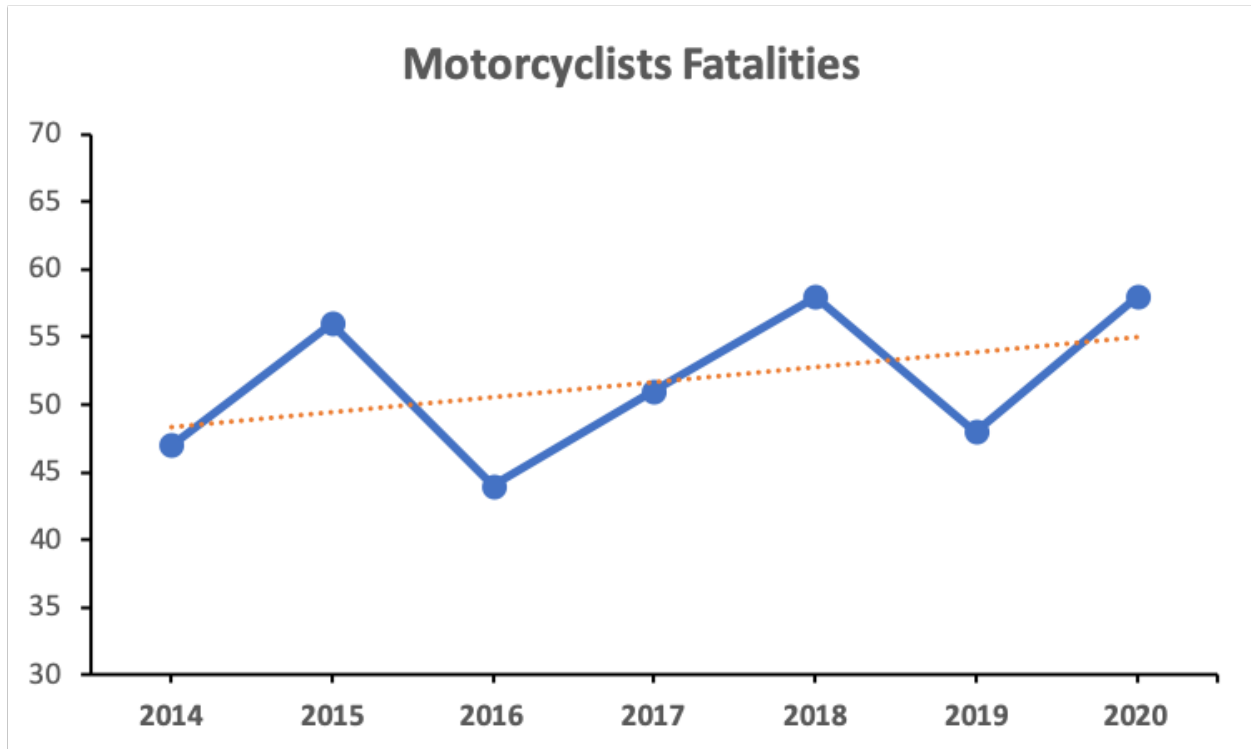


With drivers accounting for 74% of all speeding fatalities, data revealed that a third of these driver fatalities were between the ages of 24 - 34. For FFY 2022, OGR plans to focus media messaging on the dangers of speeding on this high-risk age group. Lastly, any planned enforcement patrols by local and State law enforcement aimed at speed reduction should consider that speeding fatalities happen most frequently from the hours of 3 pm to 3 am over the weekend along principal and minor arterials.

C-7 Motorcyclists Fatalities

FFY 2022 Target: 4% decline in the five-year average from 51 in 2020 to 49 by December 31, 2022.

Despite the best efforts by OGR and its partners in FFY 2021, motorcyclist fatalities rose in 2020, moving from 46 in 2019 to 57. Despite COVID-19 restrictions in place throughout most of 2020, motorcyclist fatalities rose. This increase bucked a downward trend since 2019. Despite VMT dropping in 2020 compared to 2019, it seems as motorcyclists took advantage of less congested roadways to ride.

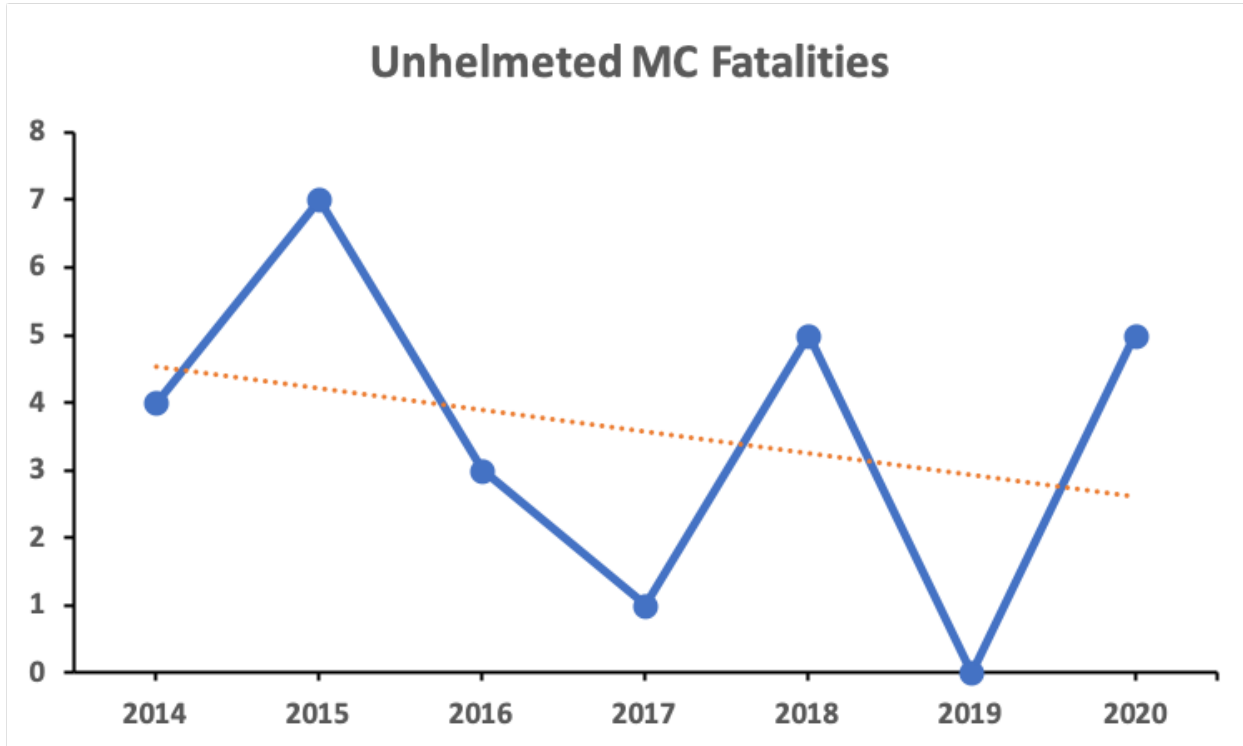


For FFY 2022, OGR plans to increase motorcycle operator awareness through a targeted media outreach campaign about motorcycle safety in collaboration with its media vendor. The media campaign will be aimed at motorcycle enthusiasts aged 25-34, which accounted for 30% of all motorcyclist fatalities from 2016 to 2020. Also, the priority messaging period and enforcement activity should be during warmer months, emphasizing June, July, and August in Bristol, Hampden, and Middlesex Counties. Each was among the tops in total motorcycle fatalities from 2016 to 2020 and had the highest number of deaths involving another motor vehicle.

C-8 Unhelmeted Motorcyclists Fatalities

FFY 2022 Target: 25% decline in the five-year average from 4 in 2020 to 3 by December 31, 2022.

The five-year average of unhelmeted motorcyclist fatalities remained unchanged in 2020, the same as in 2019 and 2018, with an average of four. One issue with unhelmeted motorcyclists is the number of unknown helmet use at the time of impact. Out of 310 motorcyclist fatalities, the helmet usage status was reported at 74%, with the remaining 26% either unknown or not registered. This lack of data accuracy makes future projections difficult as the true nature of helmet wearing among fatalities is unclear.



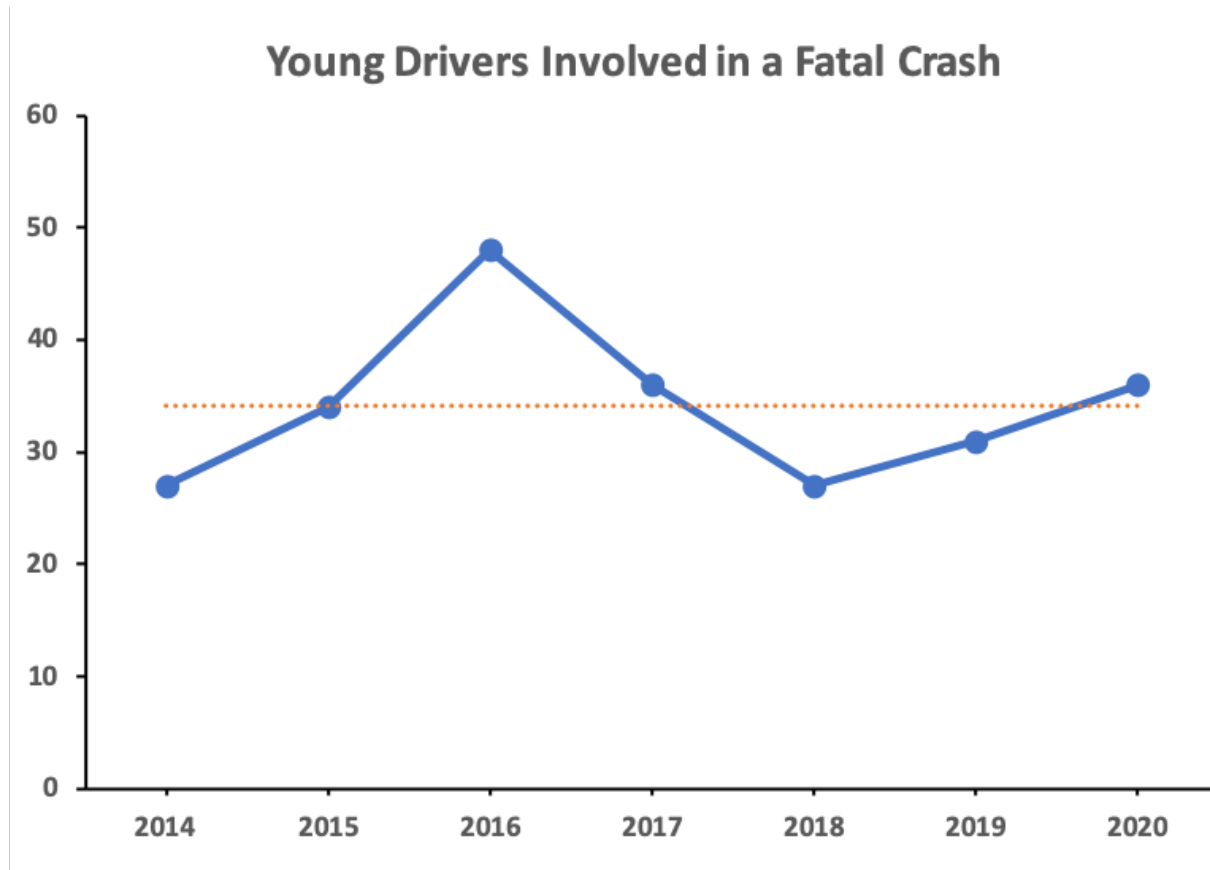
Despite the slight increase in unhelmeted fatalities, OGR expects unhelmeted fatalities to drop in the coming years, much like the numbers dropped after a spike in 2015 and 2018.

Since 2016, 96% of all motorcyclist fatalities have been operators. All but one of the unhelmeted fatalities have been drivers. In FFY 2022, OGR will focus on effective media messaging about the importance of wearing helmets and the legal requirement to do so (Massachusetts has a primary motorcycle helmet law, M.G.L 90§7) towards motorcycle drivers.

C-9 Young Drivers (Age 20 or younger) Involved in a Fatal Crash

FFY 2022 Target: 5% decline in the five-year average from 36 in 2020 to 34 by December 31, 2022.

The five-year average for young drivers rose slightly from 34 in 2019 to 35 in 2020. Young drivers involved in a fatal crash as a percentage of all drivers also increased from 6.9% in 2019 to 7.2% in 2020. Despite the slight increase in young driver involvement in a fatal crash in recent years, OGR is confident the numbers will decline in 2021 and 2022 as state and local police departments can resume normal pre-pandemic overtime enforcement activities.

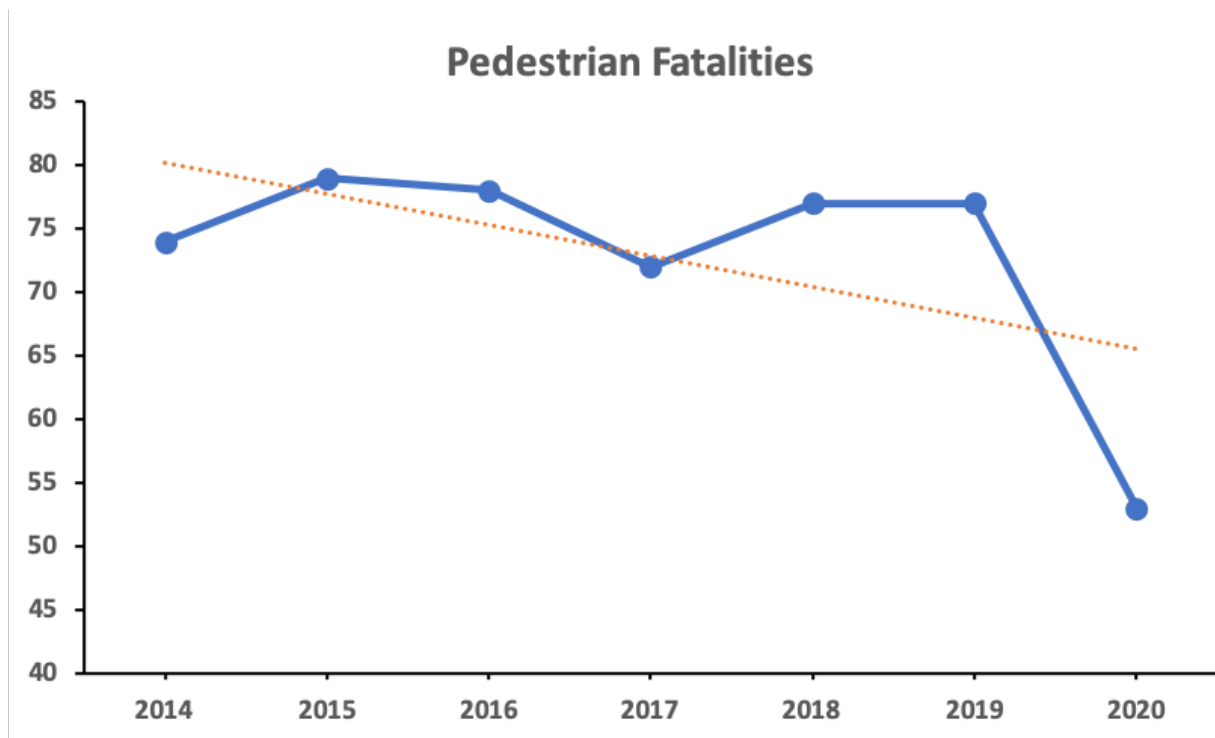


FFY 2022 outreach and messaging to young drivers will focus on critical periods and areas in which young drivers are more likely to be involved in a crash. The months of June, July, and October accounted for 36% of all young drivers involved in a fatal crash from 2016 to 2020. During the same period, the weekend (Friday - Sunday) had nearly half of all young drivers involved in a deadly crash.

C-10 Pedestrian Fatalities

FFY 2022 Target: 3% decline in the five-year average from 71 in 2020 to 68 by December 31, 2022.

Pedestrian fatalities dropped substantially in 2020 to 53 from 77 in 2019, a decline of 31%. This drop may likely be an outlier as society returns to normal in the aftermath of the COVID-19 pandemic. As evidenced by the sharp decline in VMT from 2019 to 2020, the reduction of motor vehicles on the roadway made it safer for pedestrians.



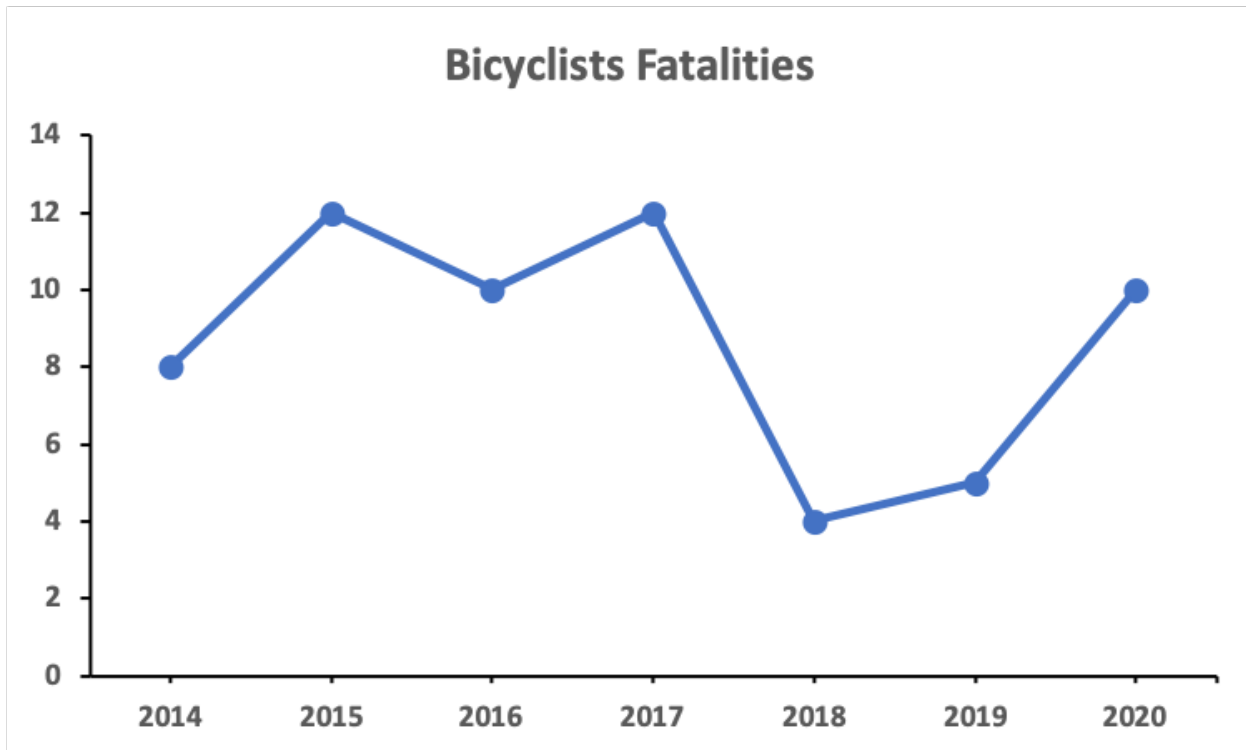
As in FFY 2022, OGR will seek to expand the pool of potential applicants to both the Pedestrian and Bicyclists Enforcement and Equipment and Community Traffic Safety Projects Grant Programs, especially local police and other organizations within Middlesex, Norfolk, Suffolk, and Worcester counties. These four counties accounted for 58% of all pedestrian fatalities from 2016 to 2020. Suffolk is especially crucial for pedestrian enforcement and safety messaging as 46% of Suffolk's traffic fatalities from 2016 to 2020 were pedestrians.

In terms of enforcement focus for Pedestrian and Bicyclists Enforcement and Equipment Grant subrecipients, over 60% of pedestrian fatalities occur between 3 pm and 11:59 pm. From 2016 to 2020, 214 deaths were reported during this timeframe. In terms of age, pedestrian fatalities skew towards the older population, with 68% of fatalities age 45 or older. OGR plans to work with local police departments to address possible needs that can improve crosswalk safety for pedestrians - new paint, reflectors, signage - to help raise awareness to drivers of an upcoming crosswalk. These updates can help protect older pedestrians as they cross the street.

C-11 Bicyclist Fatalities

FFY 2022 Target: 10% decline in the five-year average from 8 in 2020 to 7 by December 31, 2022.

Bicyclist fatalities, unfortunately, rose in 2020 with ten fatalities reported, an increase of five deaths over the five deaths in 2019. Despite the rise, the five-year average for bicyclist fatalities declined from 9 in 2019 to 8 in 2020. Unlike pedestrians, reduced motor vehicle activity in 2020 did not make the roads safer for bicyclists.

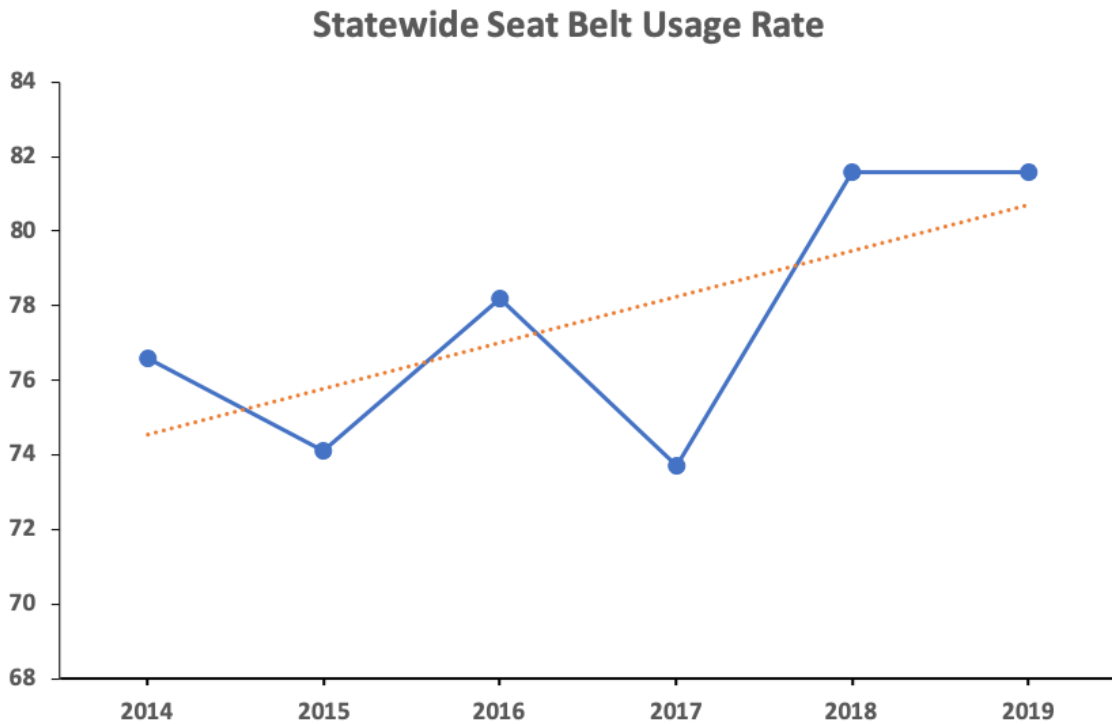


For FFY 2022's Pedestrian and Bicyclist Safety Grant, OGR will seek to expand the pool of potential applicants for funding, especially within Essex, Middlesex, and Suffolk Counties. These three counties reported nearly half of the 41 fatalities from 2016 to 2020. OGR will recommend enforcement by law enforcement subrecipients to be more often conducted between July and November as 39% of bicyclist fatalities occurred during this period.

B-1 Observed Seat Belt Usage Rate

FFY 2022 Target: 4% increase in the five-year average from 78 in 2019 to 81 by December 31, 2022.

In 2019, the seat belt usage rate held steady at 82%. There was no survey conducted during 2020 on account of COVID-19 virus restrictions. With unrestrained fatalities dropping from 96 in 2019 to 84 in 2020, Massachusetts motor vehicle occupants are willing to use safety belts more often than in previous years.



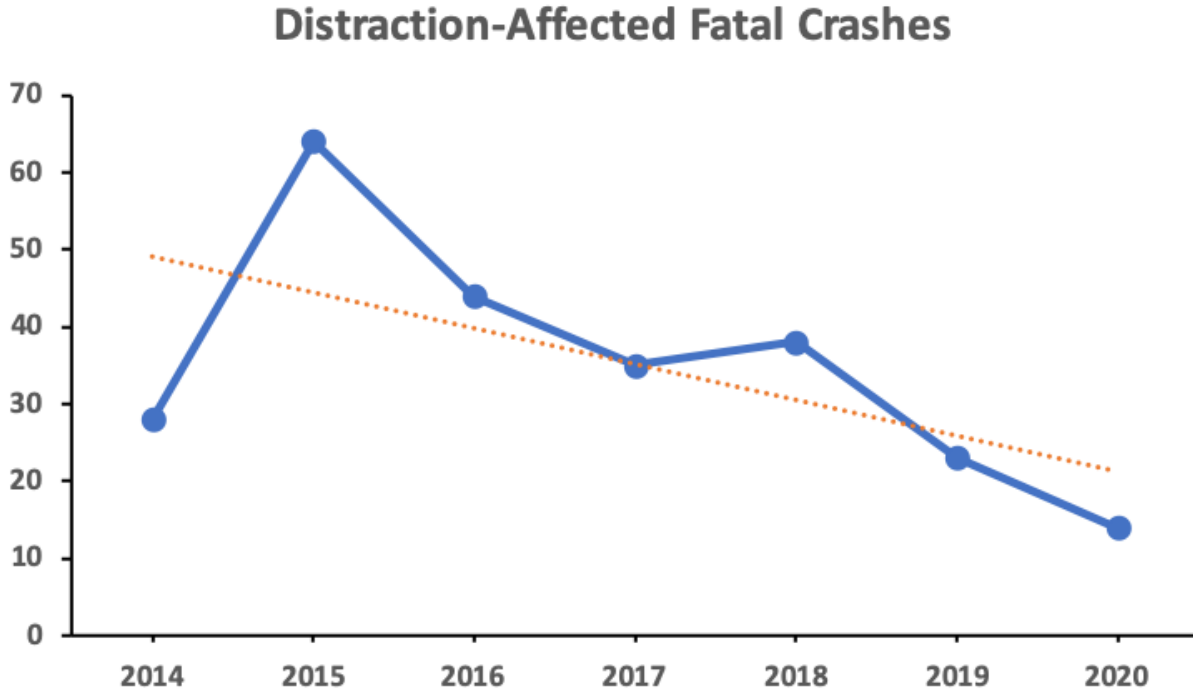
OGR will continue messaging the importance of seat belt usage throughout FFY 2022 and keeping seat belt violations among critical citations reported by law enforcement when conducting grant-funded activities. This information is vital to understanding seat belt use behavior, particularly in Massachusetts, with its secondary enforcement law.

While the 2019 Seat Belt Usage Observational Survey was unchanged from 2018 in the overall rate, there was a slight decline in usage rates by both males and teens. Also, belt usage rates dropped 4% across Berkshire, Franklin, Hampden, and Hampshire. Worcester Counties had a 2% decline in usage. OGR will utilize this information to better position media messaging about seat belt usage and safety during FFY 2022.

NC-1 Distraction-Affected Fatal Crashes

FFY 2022 Target: 6% decline in the five-year average from 31 in 2020 to 29 by December 31, 2022.

In 2020, the number of distraction-affected fatal crashes dropped from 23 in 2019 to 14 - a decline of 39%. At the same time, the five-year average went from 41 to 31. The decline in 2020 could be attributed to the lack of young drivers going to school as the pandemic forced many students, both high school and college, to go online for their education.



While there are many possible distractions for drivers, it is hard for police to definitively prove that a distraction, whether internal or external, was a factor in a fatal crash. Lack of eyewitnesses is one issue that hinders police when trying to obtain evidence of distraction. Surviving drivers who don't recall being distracted are either dishonest, or fail to mention having been distracted are challenging issues. Furthermore, the legal and bureaucratic roadblocks to obtaining cell phone records (as well as the time involved) can also discourage law enforcement from pursuing possible driver distraction citations or logging entries into crash reports. In essence, the number of distraction-affected fatal crashes in Massachusetts is likely much higher than what is shown above.

Traffic Records-Related Performance Targets for FFY 2022

Traffic Record Performance Target #1 – Decrease the percentage of Massachusetts State Police-submitted crash reports with invalid or incomplete entries in Accepted with Warning (AWW) fields (utilizing criteria by RMV with Crash Data System data in UMassSafe Data Warehouse) from 3.7% as of 8/31/19 to 2.78% by 12/31/21. Provide mid-project progress toward the target as of 5/31/21.

To improve the accuracy and completeness of crash reporting, the TR 22-01 project will aim to decrease the percentage of State Police-submitted crash reports with invalid or incomplete entries in Accepted with Warning (AWW) fields (utilizing criteria by RMV with Crash Data System data in UMassSafe Data Warehouse) from 3.7% as of 8/31/19 to 2.78% by 12/31/21.

Traffic Record Performance Target #2 – Exceed the January to December 2020 benchmarks for the RMV FARS Unit - for the timeliness, completeness, and quality - by 1% for January to December 2021.

To improve accuracy, completeness, and timeliness of fatal crash reporting into MassDOT/Registry of Motor Vehicles' Crash Data System, the TR 22-02 project will seek to exceed the January to December 2020 benchmarks for the RMV FARS Unit - for the timeliness, for completeness, and overall case quality – by 1% for January to December 2021.

Traffic Record Performance Target #3 – By 6/30/22, DCJIS will install approximately 170 mobile printers for police vehicles and provide related training at an estimated 20 departments new to MACCS.

To enhance the accuracy, completeness, and timeliness attributes of Massachusetts' citation/adjudication and crash data systems, the TR 22-03 project will work to install approximately 170 mobile printers for police vehicles at an estimated 20 departments new to MACCS by 6/30/22.

Traffic Record Performance Target #4 – Increase the number of Massachusetts driver records integrated with Massachusetts crash and injury surveillance (hospital case mix) data from 38,000 from 7/1/21 to 152,000 by 9/30/22.

To improve the accessibility and integration of the crash, driver, and injury surveillance/EMS data systems, the TR 22-05 project will aim to increase the number of Massachusetts driver records integrated with Massachusetts crash and injury surveillance (hospital case mix) data from 38,000 as of 7/1/21 to 152,000 by 9/30/22.

Traffic Record Performance Target #5 – A completeness/validity measurement of the field 'cited' in CDS driver data will be improved by 20% from a baseline of 36.9% (64,241/173,957 drivers) for 1/1/20-12/31/20 to 44.3% for 7/1/21-6/30/22.

To enhance the accuracy, completeness, integration, and uniformity of the crash, driver, and vehicle data systems, the TR 22-06 project will seek to increase a completeness/validity measurement of the field 'cited' in CDS driver data will be improved by 20% from a baseline of 36.9% (64,241/173,957 drivers) for 1/1/20-12/31/20 to 44.3% for 7/1/21-6/30/22.

Traffic Record Performance Target #6 – Increase the number of ambulance trip records successfully transmitted to the NEMSIS national repository from the Massachusetts Ambulance Trip Record Information System (MATRIS) from **0** as of 3/31/21 to **800,000** by 3/31/22

To improve the accuracy, completeness, integration, and uniformity of the injury surveillance/EMS data systems, project TR 22-07 will make the Massachusetts Department of Public Health’s Massachusetts Ambulance Trip Record Information System (MATRIS) data available nationally for all stakeholders by increasing the number of records submitted to the NEMSIS national repository to 800,000 by 3/31/22

Traffic Record Performance Target #7 - Increase the number of trauma centers and community hospitals submitting mandatory trauma reporting to the new trauma registry within 90 days of quarter closure from 0 as of 3/31/21 to 20 by 3/31/22.

To increase the accuracy, completeness, timeliness, and uniformity of the injury surveillance/EMS system, project TR 22-08 will increase the number of trauma centers and community hospital submitting mandatory trauma reporting to the new trauma registry within 90 days of quarter closure from 0 as of 3/31/21 to 20 by 3/31/22.

Program Area: Impaired Driving

By law, in Massachusetts and almost all other states, drivers are considered alcohol-impaired when their blood alcohol concentrations (BACs) are .08 grams per deciliter (g/dL) or higher. Any fatal crash that involves a driver with a BAC of .08 or higher is reported as an alcohol-impaired driving crash, and the resulting fatalities are alcohol-impaired driving fatalities. A 'driver' is the operator of a motor vehicle or motorcycle. The term alcohol-impaired means that an alcohol-impaired driver was involved in a fatal crash.

Eliminating alcohol-impaired driving remains a top priority for the state of Massachusetts. To achieve this, across the Commonwealth, OGR funds projects such as:

- Drive Sober or Get Pulled Over mobilizations with local police
- Educational Outreach to Young Drivers (aimed at high school students)
- Sobriety Checkpoints and Saturation Patrols
- Standardized Field Sobriety Test training
- Advanced Roadside Impaired Driving Enforcement (ARIDE) training
- MSP Sustained Traffic Enforcement Program (STEP)
- Traditional and social media campaigns
- Underage Drinking Compliance Checks at retailers, bars, and restaurants
- Undercover surveillance and educational programs in bars, restaurants, and large event venues to reduce over-serving of alcohol to patrons
- Community-based programs

Reducing alcohol-impaired driving crashes will not only save lives; it will reduce the economic damage that stems from these crashes. According to NHTSA, the estimated financial cost of all alcohol-impaired collisions in the United States is \$44 billion, 18% of the estimated \$242 billion associated with all motor vehicle crashes. Losses include lost wages, medical expenses, property damage, and other factors. By reducing alcohol-impaired driving by Massachusetts drivers, OGR seeks to lower the number of crashes, injuries, lives lost, and financial impact on communities.

From 2015 to 2019, there were 160,009 fatal crashes in the United States, in which 48,116 involved an alcohol-impaired driver, a rate of 28.5%. During the same period, Massachusetts reported 1,675 fatal crashes with an alcohol-impaired driver involved in 557 of the crashes, a rate of 33.3%. Nationally, 52,979 fatalities resulted from alcohol-impaired collisions; in Massachusetts, there were 603.

	National			Massachusetts		
	Fatalities	Alc Impaired	Pct Alc Impaired	Fatalities	Alc Impaired	Pct Alc Impaired
2015	35484	10280	29.0%	344	105	30.5%
2016	37806	10967	29.0%	387	144	37.2%
2017	37473	10880	29.0%	347	122	35.2%
2018	36835	10710	29.1%	355	122	34.4%
2019	36096	10142	28.1%	336	110	32.7%
	183694	52979	28.8%	1769	603	34.1%

Despite the higher alcohol-impaired fatality percentage of all traffic fatalities than the national rate, Massachusetts has a much lower alcohol-impaired fatality rate per VMT than the United States. The alcohol-impaired driving fatalities/VMT rate is substantially higher for the United States than Massachusetts in the chart below.

Year	Nationl VMT	Alc/VMT	MA VMT	Alc/VMT
2015	3,089,841	0.33	60,452	0.17
2016	3,173,815	0.35	61,656	0.23
2017	3,210,248	0.34	62,660	0.19
2018	3,240,327	0.33	63,775	0.19
2019	3,261,772	0.31	64,890	0.17
<i>*VMT in Millions</i>				

The five-year average alcohol fatalities/VMT rate for the nation was 0.33, whereas Massachusetts' five-year average was 0.19. Despite having a higher rate of alcohol-impaired driving fatalities of its total traffic fatalities than the national percentage, Massachusetts has far fewer alcohol-related driving fatalities per vehicle miles traveled.

The chance of being involved in an alcohol-impaired (BAC .08 or higher) fatal driver crash is much lower in Massachusetts than in many other states across the country. A quick look at other states with VMT in 2019 at a similar level as Massachusetts proves this out:

- Alabama - 71,735 VMT / 277 Alcohol-Impaired Fatalities = 0.39
- Arizona - 70,281 VMT / 260 Alcohol-Impaired Fatalities = 0.37
- Maryland - 60,216 VMT / 167 Alcohol-Impaired Fatalities = 0.28
- Minnesota - 60,371 VMT / 86 Alcohol-Impaired Fatalities = 0.14
- Washington - 62,530 VMT / 172 Alcohol-Impaired Fatalities = 0.28
- Wisconsin - 66,348 VMT / 183 Alcohol-Impaired Fatalities = 0.28

For 2019, Massachusetts had a lower alcohol fatality/VMT rate than five of the six states listed. While Minnesota had a lower rate, the state has over a million fewer people than Massachusetts.

Where are the alcohol-related fatalities occurring in Massachusetts?

From 2015 to 2019, Worcester County reported the most alcohol-impaired (BAC .08 or higher) driver-related fatalities with 269, followed by Middlesex (236) and Plymouth (219). These three counties accounted for 41% of all alcohol-related fatalities reported.

While using total fatalities to measure how much alcohol-impaired driving fatalities are is an excellent place to start. The real question is how pervasive are alcohol-impaired driving fatalities in a county. By dividing the total alcohol-impaired fatalities by the total fatalities reported in a county from 2015 to 2019, the resulting percentage reveals how much alcohol fatalities accounted for fatalities. The higher the percentage, the more pervasive the alcohol-impaired driving fatalities are in a county.

County	Alc FataIs	All FataIs	% Alc
Barnstable	30	67	45%
Bristol	83	219	38%
Plymouth	70	185	38%
Hampden	69	183	38%
Worcester	98	269	36%
Norfolk	58	170	34%
Suffolk	41	133	31%
Essex	46	155	30%
Middlesex	69	236	29%
Berkshire	18	64	28%
Franklin	10	38	26%
Dukes	1	4	25%
Hampshire	10	41	24%
Nantucket	0	3	0%

Despite accounting for only five percent of all alcohol-related fatalities from 2015 - 2019, Barnstable had nearly 50% of its traffic fatalities involving an alcohol-impaired driver with a BAC of 0.08 or higher. With Bristol and Plymouth County right behind Barnstable - both with 38% of all fatalities involving alcohol-impaired drivers - the data points to southeastern Massachusetts to be a key focus in FFY 2022 impaired driving education, enforcement, and media messaging.

The top towns for alcohol-impaired driving fatalities from 2015 to 2019 were as follows with the county in parentheses:

- Boston (Suffolk) - 33 fatalities
- Springfield (Hampden) - 25
- Worcester (Worcester) - 19
- Middleborough (Plymouth) - 14
- Quincy (Norfolk) - 13
- Brockton (Plymouth) - 11
- Barnstable (Barnstable) - 9
- Dartmouth (Bristol) - 8
- Fall River (Bristol) - 8
- Chelmsford (Middlesex) - 7
- Chicopee (Hampden) - 7
- Leominster (Worcester) - 7
- Taunton (Bristol) - 7
- Westfield (Hampden) - 7

The top towns listed above accounted for nearly 30% of alcohol-impaired driving fatalities reported from 2015 to 2019. Springfield, Chicopee, and Westfield recorded 57% of all alcohol-impaired driving fatalities in Hampden County; Middleborough and Brockton, 36% of Plymouth County; Dartmouth, Fall River, and Taunton, 36% of Bristol County. Boston accounted for 80% of Suffolk County, though Suffolk

comprises only four cities (Boston, Chelsea, Revere, and Winthrop), and Boston is responsible for over 75% of the county's total population.

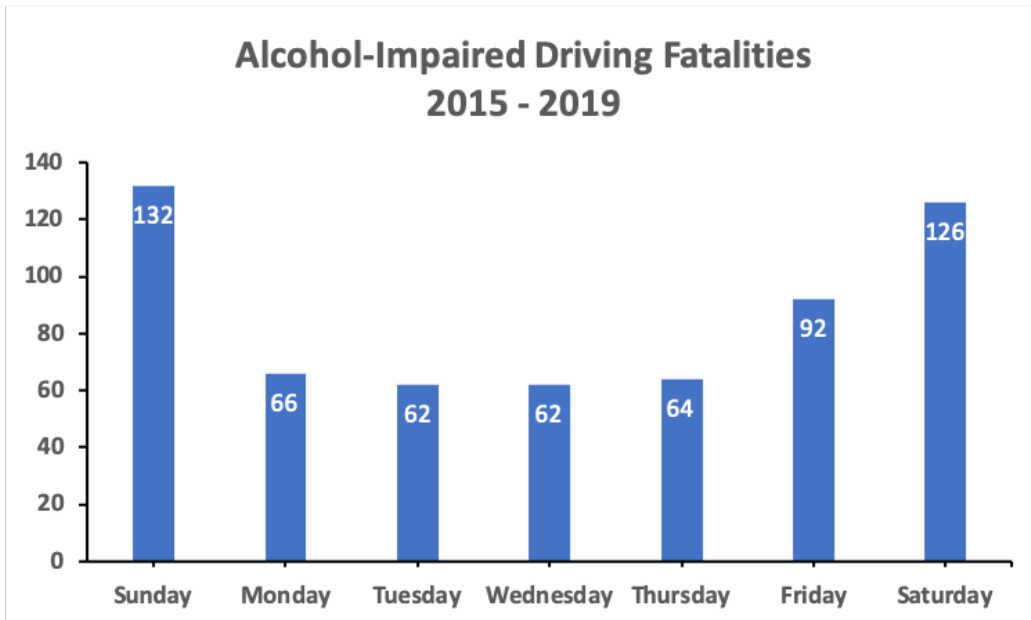
When are alcohol-impaired driving fatalities happening?

In this section, the question of ‘when’ do alcohol-impaired fatalities tend to happen more often is examined. Three ‘when’ elements - month, time-of-day, and day-of-week - will be analyzed to help provide a clearer picture of trends in alcohol-impaired driving fatalities.

From 2015 to 2019, alcohol-impaired driving fatalities occurred more frequently during warmer months than in colder months. The six-month period of April - September accounted for 56% of all alcohol-impaired fatalities, including the top three months for fatalities - June, July, and April. It is not surprising that April through September would have higher alcohol-impaired driving fatalities. Events such as Memorial Day, high school and college graduations, proms, the Fourth of July, and Labor Day all take place over these six months. Each of these events has been known to involve parties and celebrations where alcohol is consumed.

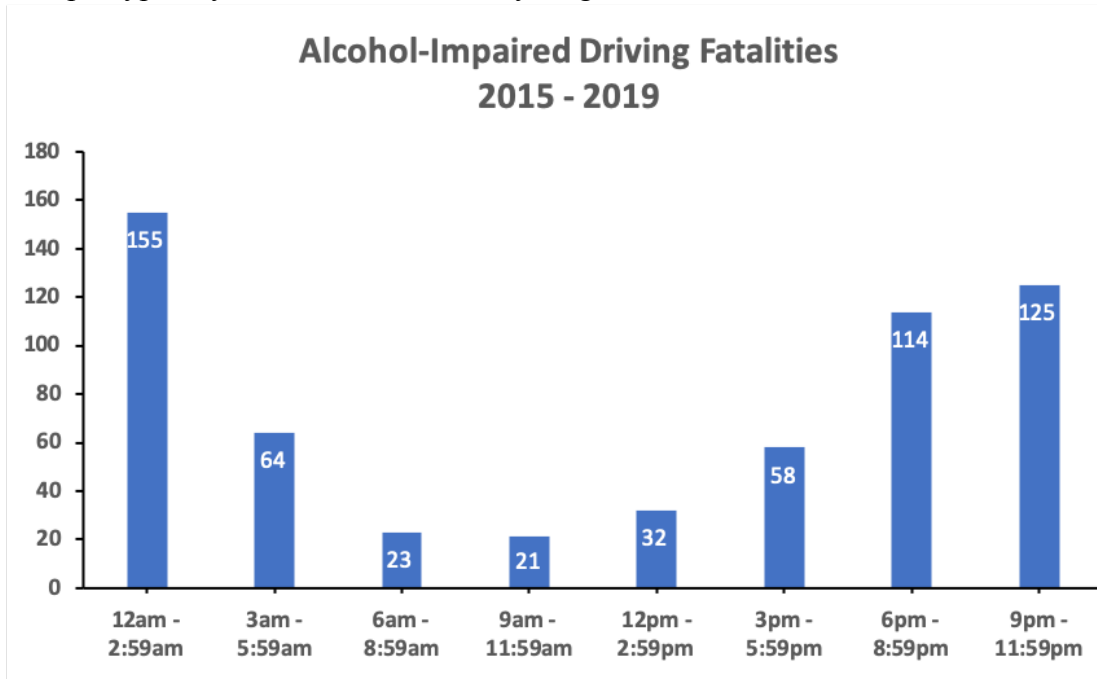
Month	Alcohol-Impaired Fatalities	Total Fatalities	Pct Alcohol Impaired Fatalities
January	52	143	36.4%
February	41	124	33.1%
March	34	109	31.2%
April	59	154	38.3%
May	51	149	34.2%
June	61	156	39.1%
July	61	176	34.7%
August	54	152	35.5%
September	52	149	34.9%
October	51	162	31.5%
November	43	158	27.2%
December	45	135	33.3%

As a percentage of all fatalities for the month, April - September had a higher rate on average than October - March. One exception is January, which has the third-highest percentage, behind June and April. This could be attributed to New Year’s Eve when people get behind the wheel after ringing in the New Year. Further analysis shows that in January, from 2015 - 2019, four alcohol-impaired fatalities occurred on New Year’s Day. Seven alcohol-impaired fatalities occurred over the weekend preceding Martin Luther King Day, which is honored on a Monday.



Weekly, alcohol-impaired driving fatalities were concentrated over the Friday - Sunday period and these three days accounted for nearly 60% of all fatalities reported from 2015 to 2019. On Saturday and Sunday, just those two days were responsible for over 40% of alcohol-impaired driving fatalities.

As a percentage of all traffic fatalities reported, Sunday had 44% of its fatalities attributed to alcohol-impaired driving. For Saturday, it was 41% of all fatalities, and Friday, 33%. In terms of total alcohol-impaired driving and the percentage of all traffic fatalities, the weekend is a popular time to engage in drinking. People typically don't have work, and young drivers do not have school.



By the time of day, the data shows the hours between 6 pm and 3 am to have the highest amount of alcohol-impaired driving fatalities during the day. This nine-hour period accounted for half of all alcohol-impaired driving fatalities reported from 2015 to 2019.

In terms of percentage of all traffic fatalities reported during each three-hour time frame, the hours from 9 pm – 1:59 pm, 12 am – 2:59 am, and 3 am – 5:59 am each had over 50% of fatalities attributed to alcohol-impaired driving.

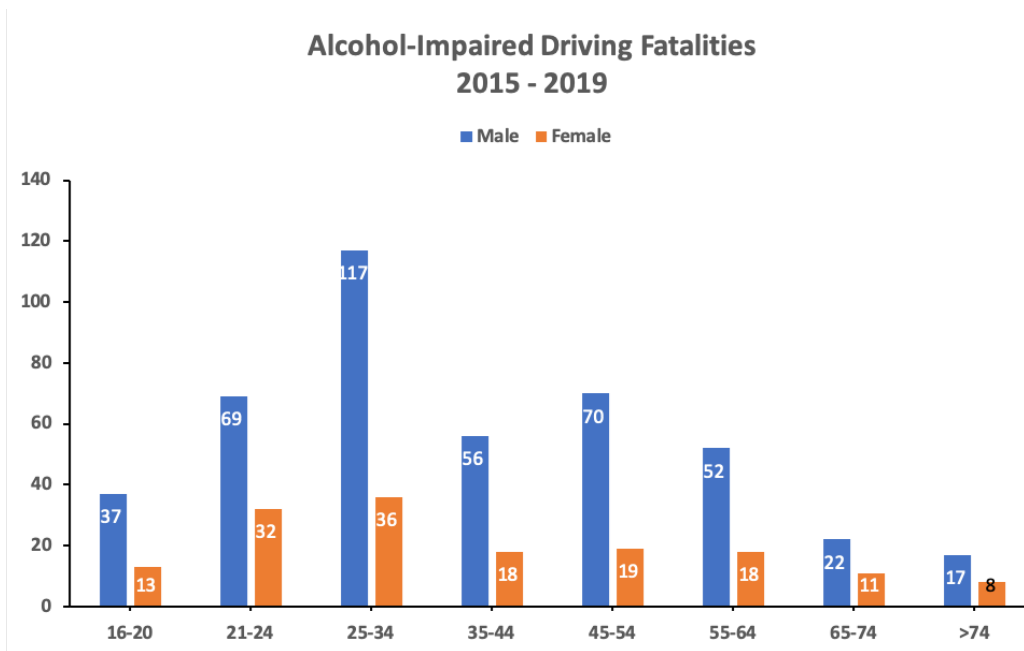
Taking this a bit further, a look at time-of-day for the weekend (Friday – Sunday) reveals this three-day period accounted for over 50% of alcohol-impaired driving fatalities for each three-hour time frame except for 12 pm-2:59 pm. The 3 am-5:59 am time had 75% of alcohol-impaired driving fatalities between Friday and Sunday.

2015 - 2019			
Time Period	Alcohol Impaired Fatalities (Fri - Sun)	All Alcohol Impaired Fatalities Reported	Pct Alcohol Fatalities (Fri-Sun)
12am - 2:59am	93	155	60.0%
3am - 5:59am	48	64	75.0%
6am - 8:59am	12	23	52.2%
9am - 11:59am	11	21	52.4%
12pm - 2:59pm	14	32	43.8%
3pm - 5:59pm	35	58	60.3%
6pm - 8:59pm	63	114	55.3%
9pm - 11:59pm	68	125	54.4%

The data presented for day and time clearly shows the need to focus local and state police-impaired driving enforcement activity during the weekend, emphasizing the times between 6 pm – 6 am.

Who accounts for alcohol-impaired driving fatalities?

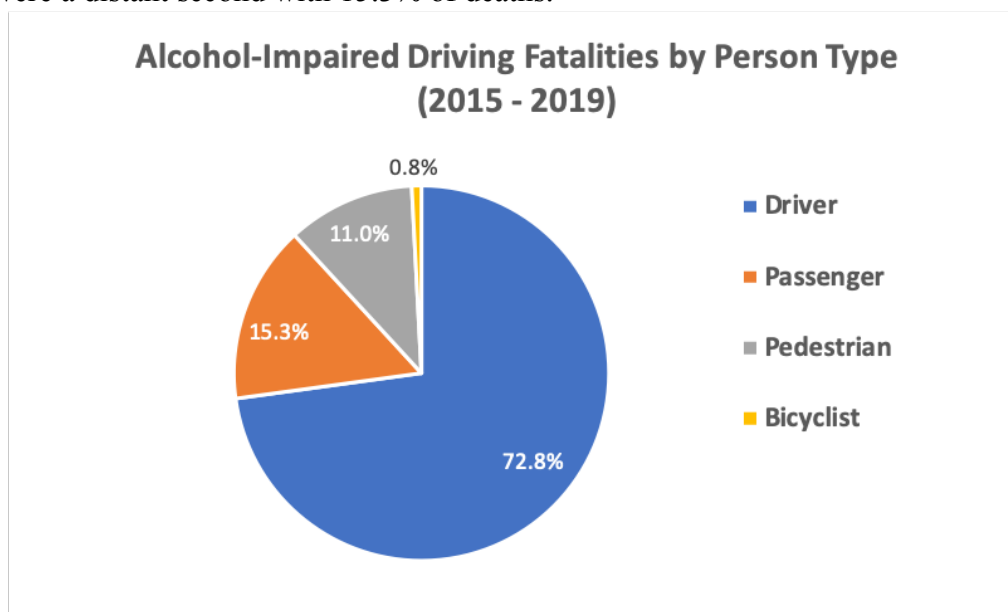
From 2015 to 2019, males accounted for 73.6% of all alcohol-impaired driving fatalities. For both genders, the age group 25-34 represented the most significant percentage of deaths of all age groups. For males, 26.4% of alcohol-impaired driving fatalities were 25-34; for females, the ratio was slightly lower at 22.6%.



(Note: Fatalities for age 15 or younger were excluded from the graph as this age group had only seven fatalities involving impaired drivers from 2015 to 2019, and the values would have skewed the chart.)

Overall, the 25-34 age group accounted for over a quarter of all alcohol-impaired driving fatalities. The 21-24 age group, with 16.8% of all fatalities, was the next highest group for deaths. Taken together, the alcohol-impaired driving fatalities from age 21 to 34 represented 42% of deaths.

By person type, drivers accounted for most alcohol-impaired driving fatalities reported from 2015 to 2019. Passengers were a distant second with 15.3% of deaths.



As the data states, nearly three-fourths of all alcohol-impaired driving fatalities were drivers. The question now is how many of those drivers were the ones impaired in the fatal crash? One method to determine this is to compare the first harmful event for all drivers that were alcohol-impaired driving fatalities against the first harmful event for all impaired drivers and died in a crash.

First Harmful Event (2015 - 2019)	Alcohol-impaired (BAC .08 or higher) driver involved fatal crash where a driver died	Driver with BAC .08 or higher died in crash	Percent Driver that died was impaired
Motor Vehicle In-Transport	144	84	58.3%
Tree (Standing Only)	78	78	100.0%
Guardrail Face	40	39	97.5%
Curb	40	40	100.0%
Utility Pole/Light Support	26	26	100.0%
Rollover/Overturn	14	14	100.0%
Mail Box	11	11	100.0%
Embankment	10	10	100.0%
Parked Motor Vehicle	9	8	88.9%
Boulder	8	8	100.0%
Total	380	318	83.7%

The first harmful event chart shows the top ten events involved in a fatal crash where a driver perished. This represents 87% of all the first harmful events listed for the 437 driver fatalities in an alcohol-impaired driving fatal crash.

The second column represents all instances where a driver died where an alcohol-impaired driver was involved in the crash. The third column represents all instances where a driver was impaired and killed in the crash. Comparing the two columns, the percentage of actual impaired drivers of all drivers that perished in an alcohol-impaired driver fatal crash can be determined.

The first thing that stands out is that nearly 60% of driver fatalities of alcohol-impaired driver fatalities were (likely) the impaired driver involved in the fatal crash. Secondly, of the top ten first harmful events, only 40% involved another motor vehicle. Lastly, the chart shows how impaired drivers accounted for 83.7% of all alcohol-impaired driving fatalities.

This information reveals that driver fatalities in an impaired driving fatal crash are likely to be the impaired driver in the crash. Still, impaired drivers are far more dangerous to themselves than other motor vehicles on the roadways.

Of the 437 driver fatalities in alcohol-impaired driving fatalities, nearly 80% were male. For passengers, the breakdown between gender was more equitable - 53% male, 47% female. Pedestrians were slightly more skewed to males - 62% men, 38% women.

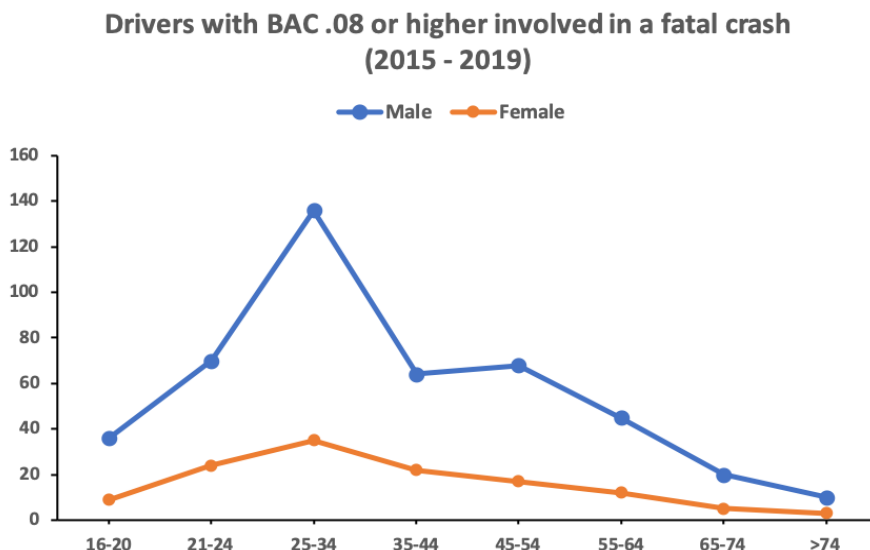
Alcohol-Impaired Driving Fatalities by Person Type and Age (2015 - 2019)												
MALES	<10	10-15	16-20	21-24	25-34	35-44	45-54	55-64	65-74	>74	Total	% All Males
Driver	0	0	21	52	105	45	56	40	16	11	346	78.5%
Passenger	1	1	13	14	8	5	5	3	0	1	49	11.1%
Pedestrian	0	1	2	2	3	7	9	7	6	5	41	9.3%
Bicyclist	0	0	1	0	1	1	1	1	0	0	5	1.1%
Total	1	2	37	68	117	58	71	51	22	17	441	
FEMALES	<10	10-15	16-20	21-24	25-34	35-44	45-54	55-64	65-74	>74	Total	% All Females
Driver	0	0	4	20	26	12	12	10	5	2	91	57.2%
Passenger	1	1	8	10	6	5	4	2	4	2	43	27.0%
Pedestrian	2	1	1	2	4	2	3	5	2	3	25	15.7%
Bicyclist	0	0	0	0	0	0	0	0	0	0	0	0.0%
Total	3	2	13	32	36	19	19	17	11	7	159	

But in terms of percentage of each gender by person type, drivers accounted for most male fatalities. In contrast, for females, drivers were dominant but not to the degree it accounted for males. Both passengers and pedestrians made up a more significant percentage of all female fatalities than male fatalities.

For both males and females, the age group 25-34 had the largest percentage of all driver fatalities for each gender. The 21-24 age group had the highest percentage of all passenger fatalities for both males and females for passengers. Pedestrians were much more prevalent among males 35 or older, but 25 - 64 ages made up the bulk of fatalities for females.

Who are the Alcohol-Impaired Drivers in Massachusetts?

From 2015 to 2019, there were 2,354 drivers involved in a fatal crash (1,720 males, 614 females, 20 unknown). Of the 2,354 drivers, 576 were impaired (BAC 0.08 or higher) at the time of the collision. These drivers accounted for 25% of all drivers involved in a fatal crash. Males made up 78% of the 576 drivers (449 drivers) and females, 22% (127 drivers).



Impaired male drivers were more involved in fatal crashes than females for all age groupings from 2015 – 2019. Both males and females had the most drivers involved at age 25-34, with males outpacing females by an almost 4-to-1 ratio. Interestingly, both genders saw the number of drivers involved in a fatal crash decline with each age group 45 years and onward. It makes sense as drivers tend to be more cautious and less likely to drink and drive as they get older.

The chart on the next page shows the percentage of all BAC 0.08 or higher drivers involved in a fatal crash a county accounts for by age group. The number of impaired drivers for that age group from 2015 to 2019 is provided. The higher the percentage, the more a county accounted for all impaired drivers within the age group. The county or counties with the highest rates are listed at the bottom of the chart.

(Note: Dukes and Nantucket County were excluded due to the low fatality count. The two counties had one impaired driver involved in a fatal crash from 2015 to 2019.)

Percent All BAC Drivers (n) for County by Age Group								
County	16-20 (n=47)	21-24 (n=94)	25-34 (n=171)	35-44 (n=85)	45-54 (n=85)	55-64 (n=57)	65-74 (n=26)	>74 (n=13)
Barnstable	0%	6%	6%	3%	6%	5%	3%	6%
Berkshire	5%	4%	1%	3%	7%	3%	3%	0%
Bristol	17%	15%	14%	18%	11%	12%	17%	6%
Essex	10%	10%	7%	8%	9%	7%	3%	13%
Franklin	2%	2%	2%	1%	2%	0%	0%	0%
Hampden	12%	10%	15%	6%	13%	13%	10%	0%
Hampshire	5%	1%	1%	2%	0%	2%	3%	0%
Middlesex	14%	15%	12%	7%	12%	13%	7%	13%
Norfolk	12%	10%	13%	9%	7%	8%	10%	13%
Plymouth	17%	17%	11%	6%	10%	15%	7%	6%
Suffolk	7%	5%	9%	6%	4%	2%	3%	6%
Worcester	12%	21%	18%	18%	13%	15%	21%	19%
Top County for Age Group	Bristol & Plymouth	Worcester	Worcester	Bristol & Worcester	Hampden & Worcester	Plymouth & Worcester	Worcester	Worcester

Young drivers under 21 years of age are more prevalent in southeastern Massachusetts (Bristol and Plymouth Counties). Worcester County is either the top or one of the top counties for each age group from 21 onward. Except for the 74+ age group, Bristol accounted for double-digit percentages in all other age groups.

For FFY 2022, alcohol-impaired driving is a significant focus of OGR as it collaborates with traffic safety partners through funding, outreach, training, and enforcement. Key takeaways from the analysis of impaired driving fatal crashes and fatalities that will be considered or implemented:

- Focus efforts on increasing enforcement across principal and minor arterial roads, especially during the 6 pm to 3 am time frame.
- Increase outreach to attract more potential applicants from counties with a high percentage of all fatal crashes that involve alcohol, such as Plymouth, Bristol, Barnstable, and Hampden.
- ABCC should focus more on inspections of these high-incidence counties in FFY 2022.

- Media messaging aimed at motor vehicle occupants should target drivers and passengers less than 35 years of age, emphasizing male drivers.
- Friday, Saturday, and Sunday should be the primary focus of enforcement activities by law enforcement.
- Regarding Sundays during football season (August – February), law enforcement should target some patrols along minor arterials or local roads between 3 pm and 9 pm. This is based upon the assumption that COVID-19 restrictions will be lifted by August 2021.

Drug-Impaired Driving in Massachusetts

While alcohol-impaired driving continues to be a primary concern for OGR, the rise of drug-impaired driving in recent years has increased the need to fund grants to address this public safety hazard. For FFY 2022, OGR will have planned activities to reduce the incidences of drug-impaired drivers on the Commonwealth's roadways, especially those under the influence of marijuana.

With the recent legalization of marijuana, OGR is concerned drivers will not treat driving under the influence of marijuana with the same level of gravitas they would with alcohol. Several planned activities to combat alcohol-impaired driving in FFY 2022 will also serve to fight against drug-impaired driving, including:

- Drive Sober or Get Pulled Over mobilizations with local and State Police
- Drug Recognition Expert (DRE) training
- Sobriety Checkpoints and Saturation Patrols
- Advanced Roadside Impaired Driving Enforcement (ARIDE) training
- MSP Sustained Traffic Enforcement Program (STEP)
- Television, radio, and social media campaigns

Current statistics on the number of motor vehicle crashes in Massachusetts involving a person under the influence of drugs are lacking due to the discontinuation of drug-related data on FARS and inconsistencies in the data, and the lack of accuracy in testing from state to state. Despite the absence of national drugged driving data, Massachusetts has violation reports related to impaired driving involving drugs - Massachusetts General Laws infraction codes 90.24f(5) and 90.24f(6) - that provides a good sense of where drugged driving is occurring within the state.

For this analysis, two violations - OUI Drugs, 1st Offense [90.24f(5), 90.24f(6)] and Open Container of Marijuana [94.13(d)] - will be used. While the OUI Drugs violation does not indicate the type of drug the driver was under the influence, the information gleaned from the violations provides some exciting trends.

The chart on the next page lists the counties of Massachusetts alphabetically. It provides the total number of OUI Drugs, 1st Offense violations issued from 2016 to 2020, and a breakdown in the percentage of violators by gender and the average age of the violators.

Essex and Worcester County accounted for 30% of all OUI Drug violations issued. Both counties had 15% of the 6,215 violations given out. Surprisingly, Suffolk County - with the capital city and wide array of colleges - only had 2% of the OUI Drug violations issued.

OUI DRUGS (2016 - 2020)	Total Violations	% MALE	% FEMALE	Avg. Age of Male	Avg. Age of Female
BARNSTABLE	474	72%	28%	34.74	37.32
BERKSHIRE	141	71%	29%	35.83	35.10
BRISTOL	710	76%	24%	35.04	36.01
DUKES	27	81%	19%	32.68	55.20
ESSEX	914	78%	22%	34.43	35.89
FRANKLIN	194	82%	18%	32.78	33.46
HAMPDEN	381	77%	23%	34.26	35.92
HAMPSHIRE	164	72%	28%	30.43	37.24
MIDDLESEX	809	78%	22%	33.97	37.56
NANTUCKET	14	71%	29%	39.50	43.75
NORFOLK	635	76%	24%	34.68	37.86
PLYMOUTH	691	69%	31%	34.95	37.25
SUFFOLK	152	81%	19%	34.12	35.00
WORCESTER	909	74%	26%	33.67	34.45
Total	6215	76%	24%	34.36	38.00

Overall, males accounted for three-fourths of all OUI Drug violations and had an average age of 34. Females represented a quarter of all OUI Drug violations and had a slightly older average age of 38. If the average age for women in Dukes and Nantucket were dropped, the average age would be 36 instead.

The violations by county data provide a look at what counties within Massachusetts are reporting the most OUI Drugs violations. This data is based upon where (location) the violation was issued. Knowing violation location useful, but what if we looked at the town of residence? From where are the violators traveling?

The chart below lists the top 20 towns of residence of OUI Drug violators. It also details how many violators from that town perpetrated the violation within the same county as the town. For example, Peabody was the town of residence for 79 OUI Drug violators from 2016 to 2020. Of the 79 violations, 94% took place within Essex County. This means that the violators from Peabody are not traveling far to obtain their drugs compared to Lynn, another Essex County town. The lower the percentage rate of violations within the same county as the town of residence may point to areas popular to procure and possibly use drugs and then return to the town of residence.

OUI DRUG Violations (90.24f(5), 90.24f(6))			
Town of Residence for OUI DRUG violator	County	Total Violations	Pct. Violation Occur in Same County
PEABODY	Essex	79	94%
HAVERHILL	Essex	88	89%
PITTSFIELD	Berkshire	63	86%
GREENFIELD	Franklin	45	82%
FALL RIVER	Bristol	131	82%
WORCESTER	Worcester	142	80%
NEW BEDFORD	Bristol	194	79%
LYNN	Essex	120	73%
SPRINGFIELD	Hampden	88	73%
CHICOPEE	Hampden	45	69%
BRIDGEWATER	Plymouth	48	69%
BROCKTON	Plymouth	106	65%
LOWELL	Middlesex	60	57%
REVERE	Suffolk	57	54%
WEYMOUTH	Norfolk	70	53%
QUINCY	Norfolk	77	49%
PLYMOUTH	Plymouth	76	49%
TAUNTON	Bristol	76	49%
FRAMINGHAM	Middlesex	58	40%
BOSTON	Suffolk	58	21%

While OUI Drugs does not provide any information related to the type of drug used by the driver at the time of violation issuance, the violation for Open Container of Marijuana in Vehicle clearly shows where marijuana usage is taking place. One caveat is the number of violations issued is relatively low (614 for four years of data - there were no violations issued in 2016), so the data results aren't backed by a larger pool of violations like OUI Drugs.

The first thing that stands out in the chart is the average age. Compared to OUI Drugs, the average age of a Marijuana violator was much lower. Both male and female violators were, on average, 27 years of age at the time of the violation. The second thing that stands out compared to OUI Drugs is the lopsidedness of gender. For marijuana violations, males accounted for 81% and females 19%. The last thing that stands out compared to OUI Drugs is that Franklin was one of the top counties for marijuana violations (18% of all violations) when the county accounted for only 3% of all OUI Drug violations from 2016 to 2020.

Open Container of Marijuana in Vehicle (2017 - 2020)	Total Violations	MALE	FEMALE	Total Known Gender	Avg Age Male	Avg Age Female	% MALE	% FEMALE
BARNSTABLE	10	6	4	10	33.17	27.00	60%	40%
BERKSHIRE	9	6	3	9	24.00	21.00	67%	33%
BRISTOL	31	26	4	30	24.00	25.25	87%	13%
ESSEX	111	94	15	109	27.59	23.80	86%	14%
FRANKLIN	109	85	23	108	30.09	29.74	79%	21%
HAMPDEN	37	29	7	36	28.31	33.14	81%	19%
HAMPSHIRE	24	21	3	24	25.67	22.00	88%	13%
MIDDLESEX	109	90	16	106	25.87	25.69	85%	15%
NORFOLK	22	20	2	22	23.05	25.00	91%	9%
PLYMOUTH	29	25	4	29	25.40	24.25	86%	14%
SUFFOLK	20	17	3	20	27.00	36.67	85%	15%
WORCESTER	103	72	30	102	27.22	27.17	71%	29%
Total	614	491	114	605	27.13	27.14	81%	19%

As done with OUI Drug violations, the town of residence is examined for marijuana violators. Compared to OUI Drug violations, there is a higher percentage of violators from the same county as the location of the infraction.

Open Container of Marijuana in Vehicle - 94.13(d)			
Town of Residence for Open Container of Marijuana Violator	County	Defendant Town of Residence	Pct. Violation Occur in Same County
GLOUCESTER	Essex	21	100%
GREENFIELD	Franklin	13	100%
ORANGE	Franklin	7	100%
SALEM	Essex	7	100%
ATTLEBORO	Bristol	6	100%
LOWELL	Middlesex	32	88%
LYNN	Essex	14	86%
HAVERHILL	Essex	7	86%
WORCESTER	Worcester	24	83%
REVERE	Suffolk	10	80%
BROCKTON	Plymouth	8	75%
FRAMINGHAM	Middlesex	8	75%
SPRINGFIELD	Hampden	28	71%
TEWKSBURY	Middlesex	7	71%
WEBSTER	Worcester	7	71%
BOSTON	Suffolk	15	60%
SOMERVILLE	Middlesex	5	60%
TAUNTON	Bristol	5	60%
CHICOPEE	Hampden	8	25%
ATHOL	Worcester	5	0%

This difference is likely due to the legalization of marijuana in 2017, which allowed consumers to purchase cannabis at designated shops. By doing so, traveling further distances to obtain marijuana was not needed anymore.

Despite not having access to data that would tie drug usage to fatal crashes, this analysis of both OUI Drugs and Marijuana violations does help frame the problem surrounding drugged driving for the FFY 2022 HSP. In general, males are more likely than females to be stopped for drugged driving. Younger drivers under 30 would be more likely to be under the influence of marijuana than those over 30. Essex County should be a primary focus for drugged driving enforcement and media messaging as the county had the highest percentage of violations in OUI Drug and Marijuana violations. For communities with low rates of violators from the same county as the community, like Boston and Taunton, a multi-faceted approach would be needed to address the drugged driving problem. With this information in hand, OGR is better informed of where drug-related grant funding should focus on FFY 2022.

Performance Measure for Impaired Driving

Number of fatalities in crashes involving a driver or motorcycle operator with a BAC of .08 and above

FFY 2022 Target: 3% decline in the five-year average from 113 in 2020 to 110 by December 31, 2022

Planned Activities for FFY 2022

Impaired Driving Media

ID: AL-22-01

Primary Countermeasure Strategy: Communication Campaign

Description of Planned Activity:

Develop and implement a statewide media campaign to support impaired driving efforts during the Drive Sober or Get Pulled Over mobilizations (December 2021 and August 2022). Messaging will focus on alcohol, marijuana, and other drugs. Based on state data, OGR will target communication efforts to drivers under 34 years of age from the following counties: Bristol, Hampden, Plymouth, and Worcester. OGR will also consider national media buy recommendations when planning paid media, including targeting a secondary Spanish audience. OGR will contract with a marketing and advertising agency to execute these paid impaired driving media campaigns. OGR will lead social media and press outreach efforts to garner earned media; both will be done in conjunction with paid media and the enforcement mobilization.

OGR will contract with a marketing and advertising agency to execute these impaired driving media campaigns while running social media in-house for sustained educational outreach. Internal policies will be followed, noting that all media and communications activities should support data-driven objectives and coordination with other activities and programs, particularly enforcement. Crash and citation data will be used not only for planning enforcement activities but also for determining the target audiences and

media channels used to reach those audiences. NHTSA's guidelines will be followed for messaging, demographics, best practices, and target groups for each media campaign.

Countermeasure Strategy Justification: Communication Campaign

OGR’s FFY 2022 media-oriented campaigns aim to reduce the frequency of drunk or drugged driving on the roadways of Massachusetts. As Drive Sober is a high-visibility enforcement campaign, media is needed to augment enforcement and maximize deterrence efforts. OGR will provide all law enforcement partners access to earned media resources, including a local press release template, social media graphics, and PSAs. This will ensure the messaging about the dangers of impaired driving is consistent and far-reaching.

Media messaging will focus on appealing to drivers, especially males under age 35. The southeastern Massachusetts region will be one of the primary areas of emphasis through television and radio spots.

Across Massachusetts, approximately 9% of the population age five or older, speak Spanish. In distributing Spanish-based advertising, OGR hopes to reach audiences in areas where the highest Spanish-speaking populations such as Springfield, Holyoke, New Bedford, Fall River, and Worcester.

AL-22-01 Impaired Driving Media Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405d Impaired Driving Low	405d Low (Paid & Earned Media)	\$2,750,000	\$0

MSP Sobriety Checkpoint & Saturation Patrols

ID: AL-22-02

Primary Countermeasure Strategy: High Visibility Saturation Patrols

Description of Planned Activity:

Provide funds for overtime to conduct approximately 60 sobriety checkpoints and saturation patrols for the Massachusetts State Police (MSP) with support from the two Blood Alcohol Testing (BAT) mobile units whenever operationally possible. The most crucial goal of the program will be to reduce the number of impaired drivers in Massachusetts by providing maximum visibility for deterrent purposes and to take immediate and appropriate action on all motor vehicle offenses observed.

A portion of the funds, about \$33,000, will be used to purchase equipment intended to maximize the efficiency of the checkpoint. Equipment includes a fingerprint machine, upgraded GPS systems, and other program-related supplies. MSP will seek approval from NHTSA for any piece of equipment over \$5,000.

Countermeasure Strategy Justification: High Visibility Saturation Patrols

A saturation patrol consists of many law enforcement officers patrolling a specific area looking for possible impaired drivers. These saturation programs are typically publicized to deter drivers from getting behind the wheel after drinking by making it known there is a perceived risk of arrest. For FFY 2022, MSP will be conducting high visibility saturation patrols – which have been highly successful in previous years – to remove drivers who are impaired off the road and warn of the legal, financial, and social costs associated with an OUI arrest.

High visibility enforcement and saturation patrols are highly effective as a deterrent to motorists from driving while impaired. While the five-year average for alcohol-impaired fatalities has declined 5.2% in Massachusetts, there is still a need to continue this downward trend. Throughout the year, this project will occur in hot spot locations around the state as determined by ongoing data analysis. Enforcement and patrols will primarily target Friday through Sunday, focusing on the hours between 6 pm and 2:59 am. The counties that account for two-thirds of all alcohol-related fatalities – Bristol, Hampden, Middlesex, Plymouth, and Worcester - should have increased emphasis by MSP over the course of FFY 2022.

AL-22-02 MSP Sobriety Checkpoint & Saturation Patrols Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Matching Amount	Local Benefit
2022	405d Impaired Driving Low	405d Low HVE	\$2,500,000	\$6,027,265	\$0

MA Trial Court – Enhance State Judicial Training and Awareness

ID: AL-22-03

Primary Countermeasure Strategy: Drug-Impaired Laws

Description of Planned Activity:

Funding will be provided to the Massachusetts Executive Office of the Trial Court to provide financing for Trial Court judges to attend training on issues related to impaired driving. These issues include Drug Recognition Expertise (DRE), court-monitored pre-trial DUI release protocols, ignition interlock supervision, pre-and post-conviction sanction options, and sentencing options at local and national training on these topics.

It is anticipated that this funding will allow five (5) Trial Court judges to attend the New England Association of Recovery Court Professionals (NEARCP) annual conference in Danvers, MA, in the fall of 2021. Funding will also allow the selected five judges to attend the National Judicial College four-day conference on “Drugged Driving Essentials” in Reno, NV, from November 2 - 5, 2021.

Drug-impaired driving is a growing concern in Massachusetts as police departments have reported increased arrests for drug-impaired driving in recent years. With the legalization of marijuana, there is a heightened awareness that Trial Court judges who oversee drug and alcohol-impaired court cases need the latest, most up-to-date information on drugged driving.

Countermeasure Strategy Justification: Drug-Impaired Driving Laws

Trial Court judges are responsible for enforcing drug-impaired driving laws if a violator is found guilty of a drugged driving offense. If a judge has little or no familiarity with the science and technicalities behind drug detection methods and evidentiary issues, it could hinder a judge understanding the case before the court. Furthermore, with the anticipated increase in prosecutions for impaired driving in the coming years, Trial Court judges will benefit from training on topics such as DRE, pre-trial DUI release protocols, and post-conviction options, including alternative sentencing. With training, judges will hand down more equitable sentences to uphold current drugged driving laws and give the defendant a fair and reasonable sentence.

With the drug OUIs rising in Massachusetts, especially in Essex County, better-informed judges will better serve the communities by handing down sentences aimed at helping the defendant's drug issues rather than punishing them outright.

AL-22-03 MA Trial Court Judicial Training Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Matching Amount	Local Benefit
2022	405d Impaired Driving	Police Traffic Services	\$18,135	\$4,534	\$0

MSP-Office of Alcohol Testing (OAT) Breath Test Operator (BTO) Training

ID: AL-22-04

Primary Countermeasure Strategy: Breath Test Devices

Description of Planned Activity:

Provide funds to the MSP Office of Alcohol Testing (OAT) to help certify over 600 Breath Test Operators (BTO) through classroom instruction to detect impaired drivers better. Training will take place throughout the year at the MPTC and other facilities. Funds will also be provided to purchase related program

equipment, including Preliminary Breath Test (PBT) units and OUI Toxicology Kits. Equipment will be distributed to local police officers and MSP troopers, including those who complete a DRE class conducted by the MPTC. OAT will determine how the equipment is divided among agencies based on problem identification and greatest need.

For the past years, OAT has purchased OUI Toxicology Kits instead of PBTs, and before those years, PBTs were bought. Through analysis of the current inventory and needs of the state and local police, OAT will determine what should be purchased in FFY 2022. Regardless of whether it will be OUI Toxicology Kits, PBTs, or a combination of both, the amount expected to be spent will be no more than \$50,000.

Countermeasure Strategy Justification: Breath Test Devices

State and local police utilize breath test devices (typically called PBTs or preliminary breath tests) to help establish evidence for a possible DWI arrest. At the current time, Massachusetts, along with 32 other states, uses PBTs regularly. Having PBTs allows officers to remove drunk drivers from the road while providing factual evidence of intoxication in the courts that can result in license suspension. In Massachusetts, the first DWI conviction leads to a one-year license suspension; the second DWI, two-year suspensions, and ignition interlock device installed. Combining the loss of driving privileges and the threat of losing those privileges will provide deterrence for drivers.

Having more officers certified to use breath test devices and having access to more PBTs will result in more drivers being pulled off the road for impaired operation. Breath test devices help officers gauge the possible impairment, and if more impaired drivers are removed from the roadways, the number of impaired driving fatalities should decrease. With the high prevalence of younger drivers (under 35 years of age) under the influence in a fatal crash, increasing the number of certified Breath Test Operators from 8,550 (as of March 2021) ensures no drivers involved in a crash aren't administered a breathalyzer test promptly.

AL-22-04 MSP OAT BTO Training Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405d Impaired Driving Low	405d Low Drug and Alcohol Training	\$290,000	\$0

MSP Drug Recognition Expert (DRE) Training

ID: AL-22-05

Primary Countermeasure Strategy: DRE Training

Description of Planned Activity:

Funding will be provided to the MSP to expand their Drug Recognition Expert (DRE) program. The MSP plans to train fifteen (15) additional officers to assist troopers on the roadways. One of the MSP's Traffic Programs Section five-year plan is to have DREs permanently assigned to sole DRE functions within a troop. A portion of the funds will be used to hold an on-site DRE Training class and purchase PBTs and accuracy check equipment for the DREs. Additionally, a small portion of the funds will be used to send three or four current DREs to the national IACP Drugs and Impaired Driving (DAID) Conference in 2022.

Countermeasure Strategy Justification: DRE Training

With the legalization of recreational marijuana and the expansion of the utilization of marijuana for medicinal purposes, state police troopers are seeing a marked increase in people driving under the influence of this drug. Because of the legalization of the retail sale of recreational marijuana, there is a public perception that the consumption of marijuana while operating a vehicle is both safe and legal. Other states that have passed similar legislation have experienced an increase in instances of drug-impaired driving.

Without DREs, it would be much more challenging for officers to determine whether a driver is under the influence of drugs or otherwise. The need for more DREs is even more pressing with the legalization of adult-use marijuana in Massachusetts. MSP is looking to add at least ten more DREs in FFY 2022, emphasizing increasing DREs in Essex County. Based on the data presented above, Essex County had numerous communities - Beverly, Salem, Lynn - among the top locations for OUI Drug violations. MSP's long-term goal is to have 5% of the department certified.

AL-22-05 MSP DRE Training Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405d Impaired Driving Low	405d Low Drug and Alcohol Training	\$255,000	\$0

MPTC – Impaired Driver Law Enforcement Specialized Training

ID: AL-22-06

Primary Countermeasure Strategy: Standardized Field Sobriety Training (SFST)

Description of Planned Activity:

This program will provide funds to the MPTC to conduct up to 35 trainings throughout the year focused on Standardized Field Sobriety Testing (SFST). The MPTC will provide training to law enforcement officers to help reduce the number and severity of roadway crashes and pedestrian injuries due to alcohol-and-drug-related impaired driving. Classes will include SFST Instructor, SFST Instructor Updates, SFST Refresher, SFST Update for Supervisor, and FTO. Also included is a three-day SFST course to help law enforcement better detect impaired drivers during OUI checkpoints, traffic stops, and at the scene of motor vehicle crashes. Increased awareness of driver impairment by officers will lead to safer roads. Funding will also be used to fund a part-time SFST Coordinator responsible for implementing and maintaining the SFST training program statewide and printing costs for training manuals. Training will take place at various police departments across the Commonwealth.

Countermeasure Strategy Justification: SFST Training

Standardized Field Sobriety Training classes help law enforcement better detect impaired drivers during sobriety checkpoints, traffic stops, and at the scene of motor vehicle crashes. Increased awareness of driver impairment by officers will lead to safer roads as drivers are arrested and eventually have their license suspended for anywhere from one year to a lifetime.

Through the MPTC, SFST classes will be offered at various locations across the state throughout FFY 2022. With an emphasis on attracting more officers from central and western Massachusetts. As more officers are trained in SFST and those receiving DRE designation, more impaired drivers will be removed from the roads, making the roadways safer and less dangerous.

AL-22-06 MPTC – Impaired Driver Law Enforcement Specialized Training Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405d Impaired Driving Low	405d Low Drug and Alcohol Training	\$210,000	\$0

MPTC – Drug Evaluation and Classification (DEC) Program

ID: AL-22-07

Primary Countermeasure Strategy: Enforcement of Drug-Impaired Driving

Description of Planned Activity:

This program will provide funds to MPTC to conduct up to 44 training classes throughout the year for police officers covering Advanced Roadside Impaired Driving Enforcement (ARIDE) and Drug Evaluation & Classification (DEC) training courses. Funding will also support a part-time DRE Coordinator to attend DRE-related conferences and a two-week hands-on oversight of field evaluations for students seeking DRE certification.

The DRE Coordinator will be required to submit an annual report that details all of the program's activities. Funding from this program will also develop and maintain a DRE testing database, purchase tablets, and associated software subscriptions for the tablets.

Approximately \$385,000 has been earmarked for training, \$120,000 for travel (DRE field certification in Arizona for at least 30 DRE candidates), and \$95,000 for software (continued use of ITSMR DRE evaluation application), and roughly \$157,000 for indirect costs, tablets, and supplies.

For any equipment/software over \$5000, a request letter will be sent to NHTSA to approve the purchase.

Countermeasure Strategy Justification: Enforcement of Drug-Impaired Driving

The impairing effects of alcohol and the dangers of drinking and driving are well-documented. By contrast, there is very little research available examining the potential risks of drugged driving. Some of the challenges in determining a drug's effect on driving include the constantly changing list of drugs, illegal and legal, that can impair driving. Additionally, the ambiguous relationship between blood levels of drugs and driving impairment and the intrusive nature of measuring drug level compared to the most reliable breath tests for alcohol. To counter the unknown surrounding drugged driving, OGR has four planned activities aimed at increasing awareness and expertise among law enforcement when dealing with a possible drugged driver. By participating in SFST training, Massachusetts law enforcement will be better prepared to assess the level of impairment of a suspected drugged driver.

AL-22-07 MPTC DEC Program Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405d Impaired Driving Low	405d Low Drug and Alcohol Training	\$757,812	\$0

ABCC – Underage Drinking Compliance Checks Program

ID: AL-22-08

Primary Countermeasure Strategy: Alcohol Vendor Compliance Checks

Description of Planned Activity:

This program will provide funds to ABCC for overtime pay to conduct enhanced liquor enforcement compliance checks to reduce underage drinking and impaired driving. Overtime funds will be provided to ABCC investigators to perform compliance checks in approximately 200 communities. A compliance check consists of an underage individual, under the supervision of 2 investigators, entering a licensed establishment and attempting to purchase an alcoholic beverage. The Compliance Check program is designed to achieve broad geographical coverage throughout the commonwealth to develop a deterrence impact created through broader knowledge among the industry retailers that their establishment could be subject to a compliance check at any time. The ABCC will cover all counties and reach the highest number of municipalities within each county that are feasible. While maintaining this focus, they will try to re-check municipalities to have a higher than average failure rate in previous years.

The ABCC will also include concert and special event enforcement operations consisting of enforcement at liquor stores surrounding large venues (Xfinity Center, Gillette Stadium, Blue Hills Pavilion, and Fenway Park) and venue parking lots before the event; with on-premises enforcement during the event. This program aims to prevent the sale of alcohol to individuals under 21 years of age and prevent young drivers from drinking and driving. The program will take place throughout the year. Municipalities and/or liquor establishments selected for compliance checks will either have a high failure rate of less than 50% compliance in 2020 and 2021, or ABCC has not conducted checks in that municipality or liquor establishment to date.

Countermeasure Strategy Justification: Alcohol Vendor Compliance Checks

To reduce the sale of alcohol to minors, which lowers the chance of underage drivers navigating the roads under the influence, the ABCC will utilize funding to restrict access to alcohol by minors through compliance checks. This planned activity will involve monitoring local vendors of alcoholic beverages to ensure that a) they aren't selling alcohol to minors by checking identification and b) they aren't providing alcohol to persons that are drunk or intoxicated. Fewer minors drinking leads to fewer minors being impaired on the roadways and lowers the number of young drivers ending up in a fatal crash due to alcohol impairment. This will lead to lower incidences of alcohol-related fatal crashes across Massachusetts.

The impact of compliance checks will restrict minors' ability, especially underage drivers, from obtaining alcoholic drinks, thus preventing them from drinking and driving. The enforcement of intoxicated persons is intended to send a message to establishments (bars, restaurants, pubs) that serving a legally drunk person will result in violations, fines, and possibly criminal charges.

AL-22-08 ABCC Underage Drinking Compliance Checks Program Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Matching Amount	Local Benefit
2022	405d Impaired Driving Low	405d Low Youth Alcohol	\$97,500	\$24,375	\$0

ABCC – Enforcement Program to Prevent Sale of Alcohol to Intoxicated Persons

ID: AL-22-09

Primary Countermeasure Strategy: Alcohol Vendor Compliance Checks

Description of Planned Activity:

This program will provide overtime funds to the ABCC for investigators to participate in undercover operations at licensed establishments in communities throughout the Commonwealth to determine if the licensee serves intoxicated individuals. The ABCC will use data analysis to determine municipalities with the highest concentration of establishments that have been identified as the source of last drink for a convicted drunk driver. The operations will be scheduled in coordination with NHTSA Impaired Driving initiatives and during identifiable times of the year and at specific events where impaired driving is likely to result. Factors such as the number of alcohol-related fatalities and crashes, OUI violations, and sales to minor’s violations will be considered.

Large urban municipalities with a high concentration of liquor establishments (Boston, Worcester) and communities with residential colleges or universities will be given priority. The ABCC will focus on the establishments with the most significant number of violations listed in their application for funding. The ABCC will also conduct outreach to local police departments to ask if they can identify specific establishments that should be monitored.

ABCC estimates funding in FFY 2022 will cover over 2,500 hours of overtime enforcement hours.

Countermeasure Strategy Justification: Alcohol Vendor Compliance Checks

To reduce the sale of alcohol to minors, which lowers the chance of underage drivers driving drunk, the ABCC will utilize funding to restrict access to alcohol by intoxicated individuals. This activity is done by monitoring establishments known to provide the last drink to an impaired driver before being pulled over or involved in a crash. This planned activity will include ensuring targeted bars and restaurants comply with directives to cut off alcohol to any patron deemed too intoxicated to drive.

By punishing (suspending alcohol license) or even warning establishments for being the place of last drink, ABCC is helping reduce the incidence of impaired driving across Massachusetts. As businesses find themselves under investigation or losing their liquor license, other alcohol-serving establishments

will make even an effort to ensure they comply and prevent patrons from becoming too intoxicated while drinking at their respective businesses.

With OGR's support and funding, ABCC's efforts had helped Massachusetts lower the alcohol-impaired fatalities/VMT rate from 0.25 in 2014 to 0.17 in 2019.

AL-22-09 ABCC Enforcement to Prevent Sale of Alcohol to Intoxicated Persons Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Matching Amount	Local Benefit
2022	405d Impaired Driving Low	405d Low Alcohol	\$97,500	\$24,375	\$0

Stakeholders Conference

ID: AL-22-10

Primary Countermeasure Strategy: Communication and Outreach

Description of Planned Activity:

The primary goal of a stakeholder conference (whether virtual or in-person, depending on the situation with the COVID-19 pandemic) will be to fund seminars, meetings, and training for traffic safety stakeholders in FFY 2022. As in previous years, topics will include alcohol and drug-impaired driving, occupant protection, distracted driving, motorcycle safety, pedestrian and bicyclist safety, traffic records, prosecution and adjudication, and speeding.

Another goal will be to initiate a dialogue with critical local, state, federal, non-profit, and private sector leaders to identify highway safety program priorities, improve traffic safety, and establish focus areas for the FFY 2023 HSP. Locations and dates of conferences are yet to be determined.

Countermeasure Strategy Justification: Communication and Outreach

By reaching out to stakeholders in traffic safety, OGR looks to better improve its focus and funding of critical programs that will make the roadways safer for motorists and non-motorists alike.

Funds may be used to contract with venue operators and related costs. Funds may also be awarded to one or more traffic safety partners to conduct complementary activities.

AL-22-10 Stakeholders Conference Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Impaired Driving	\$35,000	\$35,000

Program Management – Impaired Driving

ID: AL-22-11

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Provide sufficient staff to manage programming described in this plan as well as cover travel, professional development expenses, conference fees, and postage and office supplies. All funding intended for supporting staff and will not be sub awarded.

Countermeasure Strategy Justification: Program Management

The day-to-day operation of OGR requires funding to allow staff to oversee the impaired driving safety program properly. Lack of oversight due to reduced or no funding could lead to increased impaired driving-related fatalities and injuries on the roadways of Massachusetts.

AL-22-11 Program Management – Impaired Driving Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Impaired Driving	\$185,000	\$0

Program Area: Occupant Protection

Occupant protection refers to seat belts, booster seats, and child passenger safety (CPS) seats by motor vehicle operators and occupants. Research has found that lap/shoulder seat belts, when used, reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent and the risk of moderate-to-critical injury by 50 percent.

Despite the known lifesaving and injury-prevention benefits of using seat belts, Massachusetts has yet to implement a *primary enforcement law* to allow law enforcement officers to stop drivers from not wearing a seatbelt. Currently, Massachusetts has a weaker, *secondary enforcement seat belt law* under which police can issue seat-belt citations only if the reason for pulling over the driver was for another offense (i.e., speeding, going through a red light). As a result of this enforcement handicap, Massachusetts has consistently ranked among the worst-performing states year after year in the annual Statewide Observational Seat Belt Survey – a requirement for occupant protection grant funding by NHTSA.

For 2019, the Massachusetts seat belt usage rate held steady at 82%, the same as in 2018. There was no survey done in 2020 due to the COVID-19 pandemic. OGR expects to survey in 2021. Even after two years of over 80% belt usage, Massachusetts remained in the bottom five for all States in 2019, joining three other secondary seat belt law states (Mississippi, South Dakota, Arkansas) and one no belt law state (New Hampshire). States with a primary law had an average usage rate of 90.6% compared to 86.4% for secondary law states. Hawaii was the highest of all, with 97.8%.

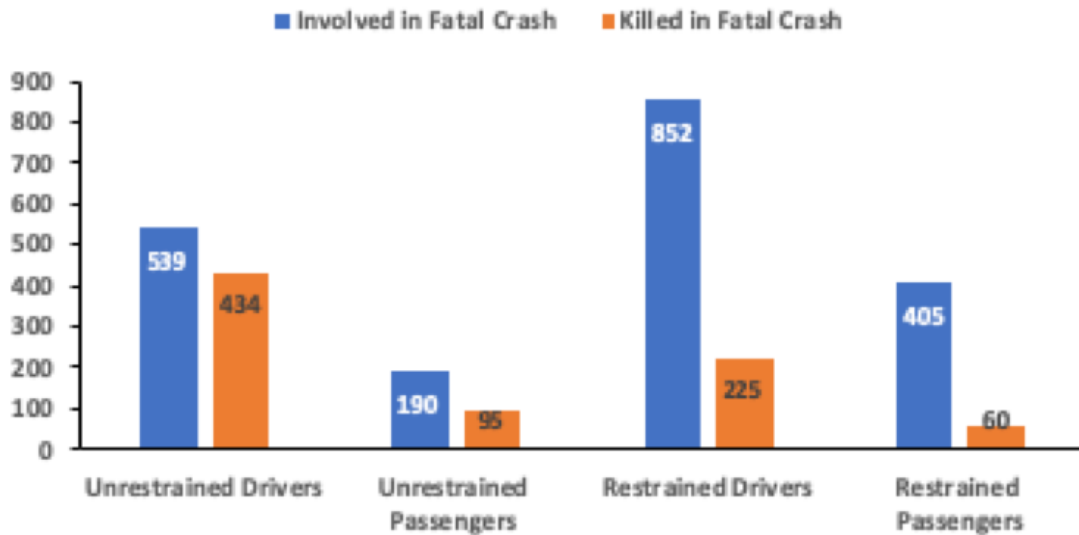
Having a primary seat belt law is critical. Without one, drivers and passengers will not reap any consequences for riding in a motor vehicle unrestrained unless pulled over by police for a reason not related to wearing a belt. As mentioned previously, the average usage rate of all primary seat belt states is over four percentage points higher than secondary seat belt states. Each of the top five states for belt usage in 2019 - Hawaii (97.8%), Georgia (96.3%), California (95.9%), Oregon (95.8%), and New Jersey (94.5%) - were primary belt law states and collectively, these states had unrestrained fatalities from 2015-2019 accounting for 35% of all traffic fatalities reported. In comparison, the bottom five states for belt usage - Massachusetts (82%), Mississippi (80%), South Dakota (79%), Arkansas (78%), and New Hampshire (76%) - had unrestrained fatalities representing 55% of all traffic fatalities reported from 2015-2019. While some top states for seat belt usage have much higher total traffic fatalities than Massachusetts, unrestrained fatalities accounted for much less a percentage of all fatalities than the Bay State.

2015 - 2019 (All Passenger Cars & Light Trucks/SUVs)							
Bottom Five States for Usage Rate	Unrestrained Fatalities	All Traffic Fatalities	Pct. Unrestrained of All Fatalities	Top Five States for Usage Rate	Unrestrained Fatalities	All Traffic Fatalities	Pct. Unrestrained of All Fatalities
Arkansas	914	1,863	49.1%	California	3,059	9,895	30.9%
Massachusetts	536	1,037	51.7%	Georgia	2,172	5,094	42.6%
Mississippi	1,471	2,620	56.1%	Hawaii	90	242	37.2%
New Hampshire	273	399	68.4%	New Jersey	615	1,527	40.3%
South Dakota	279	434	64.3%	Oregon	408	1,542	26.5%
	3,473	6,353	54.7%		6,344	18,300	34.7%

As the data shows, having a primary belt law will save more lives than a secondary belt law currently does for Massachusetts. The difference between wearing a seatbelt and not wearing one can be shown in stark clarity by examining Massachusetts' data for 2016 to 2020 for occupants in a fatal crash.

From 2016 to 2020, there were 539 unrestrained drivers and 852 restrained drivers involved in a fatal motor vehicle crash. For passengers, 190 were unrestrained and 405 restrained in fatal crashes. For unrestrained drivers, 81% died in the crash. For restrained drivers, only 26% perished. For passengers, 50% of those unrestrained died, as opposed to only 15% restrained.

Occupant Involvement and Restraint Use 2016 -2020

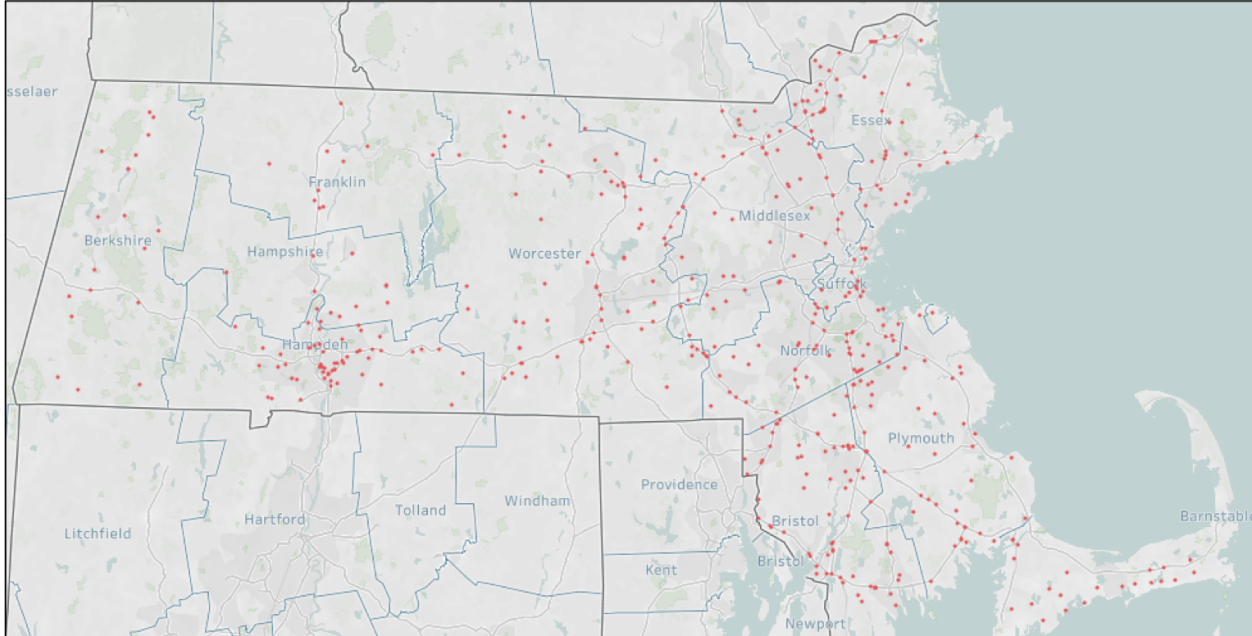


Unrestrained drivers died in approximately eight of every ten crashes; unrestrained passengers perished in five of every ten crashes. In contrast, only 2.5 of every ten restrained drivers were killed in a crash. The rate was even lower for restrained passengers, with 1.5 of every ten dying on the roadways.

The decision not to wear a restraint when in a motor vehicle is foolish as the odds of survival in a crash are tremendously unfavorable. With no more than two of every ten unrestrained drivers and only half of the unrestrained passengers walking away or surviving a crash, the goal of OGR in FFY 2022 - besides pushing for a primary seat law - is to increase awareness of the dangers of being unbelted in a motor vehicle among motor vehicle occupants in Massachusetts.

Where are unrestrained motor vehicle fatalities occurring?

From 2016 to 2020, there were 532 unrestrained fatalities reported across Massachusetts. Over 70% of all unrestrained fatalities occurred on three primary roadway types: principal arterials, minor arterials, and interstate.



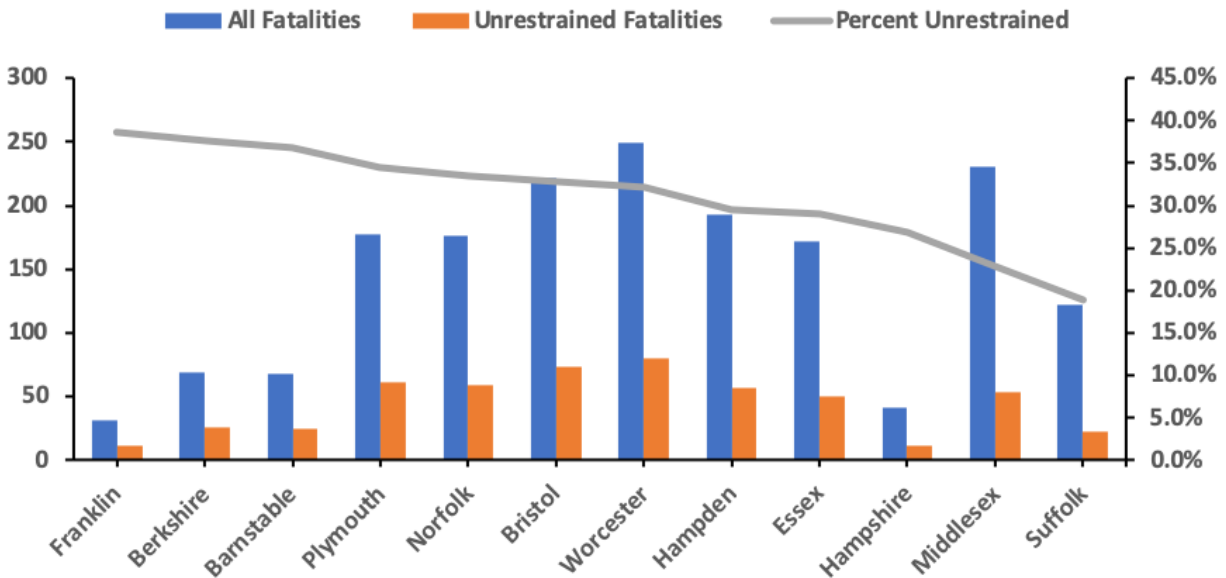
The map above shows the location for each unrestrained fatality from 2016 to 2020. It reveals how many of these fatalities are along, or within, the proximity of arterials and interstate roadways. Even in the western part of the state, where it is much more rural, most unrestrained fatalities are along or near Route 7 (running north/south) and the Mass Pike (I-90).

Roadways with higher speed limits such as interstate, freeways, and principal arterials had a higher fatality rate among all unrestrained motor vehicle occupants involved in a fatal crash.

2016 - 2020			
Roadway Type	Unrestrained MV Occupants Involved in Fatal Crash	Unrestrained MV Occupant Fatalities	Percent Unrestrained Fatalities
Interstate	149	113	76%
Freeway/expressway	36	28	78%
Principal arterial	196	141	72%
Minor arterial	206	133	65%
Collector	82	56	68%
Local	98	58	59%

Worcester County led all Massachusetts counties, with 80 of the 532 unrestrained fatalities reported from 2016 to 2020. Bristol was second with 73 deaths. As a percentage of all fatalities within the county, Franklin and Berkshire both had nearly 40% of deaths attributed to unrestrained motor vehicle occupants.

Unrestrained Fatalities vs All Fatalities 2016 - 2020



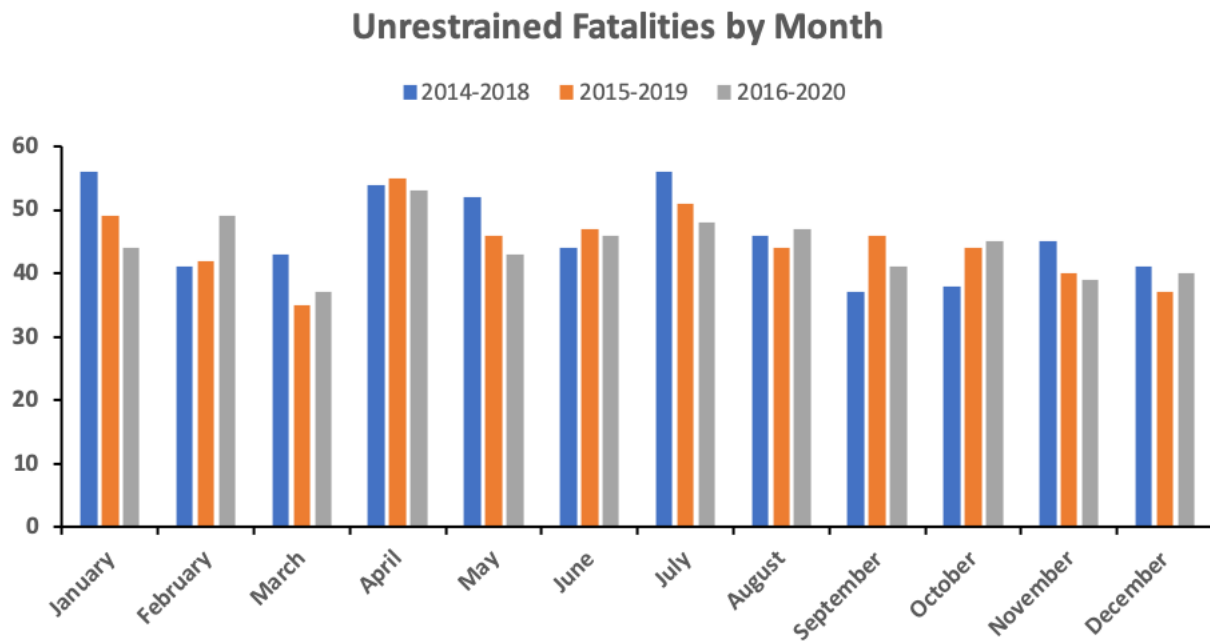
Interestingly, three of the four counties with the lowest traffic fatalities - Franklin, Berkshire, Barnstable - have the three highest percentage of unrestrained fatalities of all fatalities. These three counties are more rural than urban, and the time for emergency services to arrive at the crash scene can be considerably longer than in other more urban counties. This factor could be contributing to the higher percentage of unrestrained fatalities.

2016-2020			
Town	Unrestrained Fatalities	Town	Unrestrained Fatalities
SPRINGFIELD	20	BARNSTABLE	6
BOSTON	16	LEOMINSTER	6
FALL RIVER	10	METHUEN	6
WAREHAM	10	MIDDLEBOROUGH	6
BROCKTON	9	MILFORD	6
DARTMOUTH	8	NEW BEDFORD	6
ANDOVER	7	QUINCY	6
CHICOPEE	7	RANDOLPH	6
LUDLOW	7	RAYNHAM	6

By town, Springfield led all communities, with 20 unrestrained fatalities reported from 2016 to 2020. Of the 57 unrestrained fatalities in Hampden County, Springfield, Chicopee, and Ludlow accounted for 60% of all unrestrained fatalities. Boston accounted for 70% of all unrestrained fatalities in Suffolk County.

When are unrestrained fatalities occurring?

Over the past five years (2016 - 2020), the average number of unrestrained fatalities per month was 44.3. Surprisingly, the lowest fatality month and highest fatality month were right next to each other. From 2016-2020, March reported 37 unrestrained fatalities, followed by 53 in April. To get a better sense of what months are likely to have higher fatalities on average, a comparison of monthly unrestrained fatalities in two previous five-year periods (2014-2018, 2015-2019) was made.



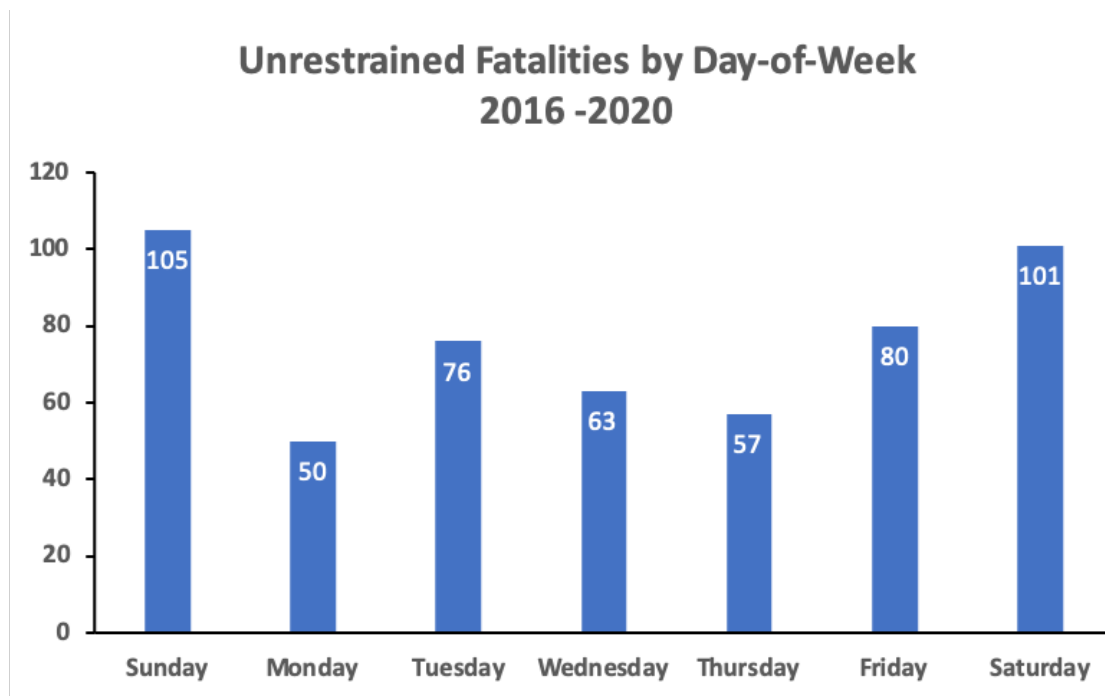
The warmer months - April through August - tend to have higher fatalities than other months in the calendar year. The last quarter of the year - October, November, December - are usually lower than the warmer months. At first glance, it seems that January is an outlier for colder months, but five-year totals of unrestrained fatalities have dropped significantly since 2018, falling from 56 to 49 to 44 in 2020.

As a percentage of all fatalities reported in the month, January through May, all had over 30% of deaths from unrestrained motor vehicle occupants. No other month after May had over 30%.

Based on five-year (2016-2020) unrestrained fatalities totals and the highest percentage of all fatalities, both April and February are months to consider for increased occupant protection activity. April has consistently been a leading month for unrestrained fatalities since 2014, and February saw the highest jump in five-year totals since 2018 - rising 20% from 41 to 49 in 2020.

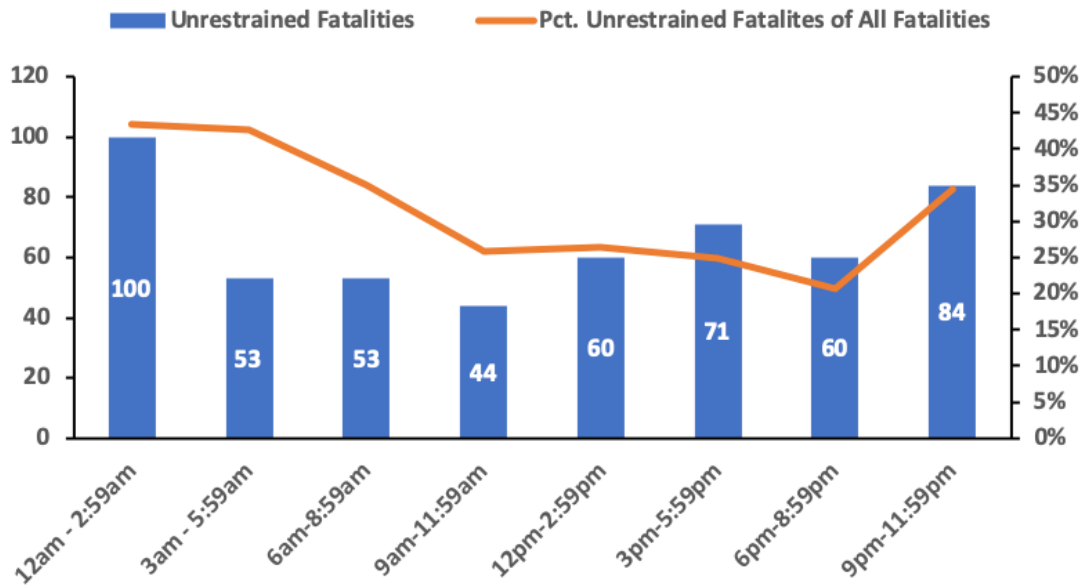
2016 -2020			
Month	All Traffic Fatalities	Unrestrained Fatalities	Percent Unrestrained of All Fatalities
January	140	44	31.4%
February	124	49	39.5%
March	120	37	30.8%
April	152	53	34.9%
May	136	43	31.6%
June	158	46	29.1%
July	168	48	28.6%
August	159	47	29.6%
September	150	41	27.3%
October	157	45	28.7%
November	164	39	23.8%
December	137	40	29.2%

As with impaired driving, unrestrained fatalities are far more likely to occur over the weekend (Friday - Sunday) than any other time during the week. From 2016 to 2020, nearly 40% of unrestrained fatalities took place over Saturday - Sunday. For Friday - Sunday, the percentage jumps to more than half of all unrestrained fatalities.



By the time of day, unrestrained fatalities occurred most frequently between midnight and 2:59 am, followed by 9 pm to 11:59 pm. From 9 pm to 3 am, the six-hour period accounted for 35% of all unrestrained fatalities reported from 2016 to 2020.

Unrestrained Fatalities by Time-of-Day 2016 - 2020



As a percentage of all fatalities reported, the 12 am to 2:59 am period led all time frames, with 44% of unrestrained fatalities. The 3 am-5:59 am and 9 pm-11:59 pm time frames followed with 20% and 35% of all fatalities, respectively.

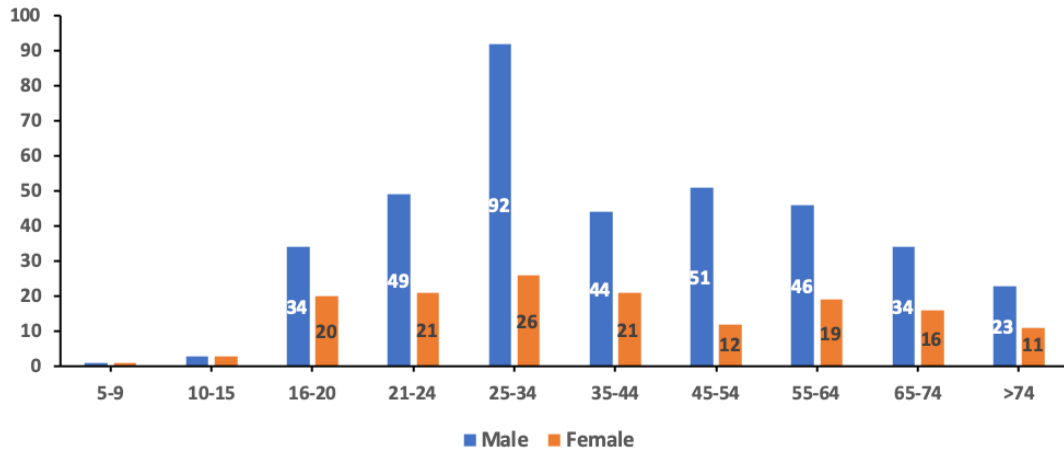
An examination of unrestrained fatalities by time and day reveals that nearly two-thirds of all fatalities that took place between midnight and 6 am occurred over the three days of Friday, Saturday, and Sunday. The 9 pm to 11:59 pm had over half of its reported unrestrained fatalities occurring over Friday, Saturday, and Sunday.

Who are the unrestrained fatalities?

From 2016 to 2020, over 70% of unrestrained fatalities were male. For both genders, ages 25-34 had the most fatalities, accounting for 22% of all unrestrained fatalities. Males made up the bulk of the deaths in this age group - 78% of the 118 deaths reported.

Young drivers, those aged 20 or younger, accounted for 10% of all unrestrained drivers from 2016 to 2020, the same as the previous two five-year periods (2014-2018, 2015-2019). It is troubling that the number of young drivers not wearing seat belts has not decreased in recent years.

**Unrestrained Fatalities by Gender and Age Group
2016 - 2020**



By person type, drivers were the majority of unrestrained fatalities from 2016 to 2020. Of the 532 deaths reported, 82% were drivers. Male driver fatalities outpaced female driver deaths by a three-to-one margin.

Age Group	Drivers		Passengers	
	Male	Female	Male	Female
Under 16	1	0	3	4
16-20	21	12	13	8
21-24	42	16	7	5
25-34	86	22	6	4
35-44	37	15	7	6
45-54	43	10	8	2
55-64	41	14	5	5
65-74	33	12	1	4
>74	21	6	2	5

Passenger unrestrained fatalities were higher among the age group 16-20, with 22% of all passenger deaths. On the other hand, unrestrained driver fatalities were highest for the 25-34 age group, accounting for a quarter of all driver fatalities. After a high point of 108, unrestrained driver fatalities declined by over 50% for subsequent age groups. With passengers, the age groups after 16-20 were all at least 40% less. In general, it seems drivers become more aware of the need to wear a seat belt after age 34; for passengers, after age 20.

With drivers and passengers between the ages of 16 and 34 accounting for nearly half of all unrestrained fatalities, a look at where these fatalities are occurring will aid OGR in targeting critical regions of the state for media messaging and enforcement activities. While Bristol led all counties with 37 unrestrained fatalities, Franklin reported the highest percentage of 16-34-year-olds of all its unrestrained fatalities.

Despite its high unrestrained fatalities, Worcester had one of the lowest under 35 fatality percentages, with 38%.

County	Total Unrestrained Fatalities	Total Unrestrained Fatalities 16 - 34	Pct. Under 35 Unrestrained
Franklin	12	7	58%
Hampden	57	32	56%
Bristol	73	37	51%
Barnstable	25	12	48%
Suffolk	23	11	48%
Norfolk	59	28	47%
Essex	50	23	46%
Plymouth	61	27	44%
Middlesex	53	21	40%
Berkshire	26	10	38%
Worcester	80	30	38%
Hampshire	11	4	36%

With both high overall unrestrained fatalities from 2016 to 2020 and more than 50% of its unrestrained fatalities among drivers and passengers under 35, Bristol and Hampden would be two key counties to focus messaging and enforcement in FFY 2022.

Speeding in unrestrained fatalities

Unrestrained fatalities do not occur in a vacuum, as other decisions made by the motor vehicle occupants possibly made the difference between surviving and dying in the crash. One such factor is speeding. When speeding is involved, it drastically increases the chance of unrestrained motor vehicle occupants dying in a crash. There is no restraint to prevent the person from hitting the dashboard, window or being ejected from the vehicle.

From 2015 to 2019, there were 530 unrestrained fatalities age 16 or older in Massachusetts. Of these fatalities, 195 involved speeding. The younger the age group, the more likely speeding will be involved in the unrestrained fatality. For 16-20-year-old unrestrained fatalities, speeding was a factor in nearly 60% of deaths, whereas those age 75 or older had speeding involved in only 11% of unrestrained fatalities. This is not surprising as younger drivers tend to drive over the speed limit more often than elderly drivers, who tend to drive much slower on the roadways.

(Note: Data for 2015 to 2019 had to be used instead of 2016 to 2020 because speeding data is notoriously difficult to determine via MassDOT IMPACT and FARS only goes up to 2019)

Age Group	Speeding Involved	All Unrestrained Fatalities	Percent Speeding Involved
16-20	30	52	58%
21-24	33	77	43%
25-34	59	120	49%
35-44	28	60	47%
45-54	18	73	25%
55-64	14	65	22%
65-74	9	47	19%
>74	4	36	11%

Of the 195 unrestrained fatalities involving speeding, 150 were drivers, and 45 were passengers. From age 25 and up, drivers accounted for 84% of all unrestrained fatalities (112 of 132).

Speeding-Involved Unrestrained Fatalities (2015-2019)		
Age Group	Driver	Passenger
16-20	17	13
21-24	21	12
25-34	55	4
35-44	20	8
45-54	15	3
55-64	11	3
65-74	8	1
>74	3	1

With drivers dominating speed-involved unrestrained fatalities, a look at how many of those fatalities were in single-vehicle crashes to see if drivers were usually alone or had a passenger at the time of the crash. Of the 195 unrestrained fatalities, 139 took place in a single-vehicle collision - a rate of 71%.

Speed-Involved Unrestrained Fatalities in Single-Vehicle Crash		
Age Group	Driver	Passenger
16-20	15	12
21-24	16	9
25-34	41	2
35-44	16	7
45-54	7	0
55-64	6	1
65-74	4	1
>74	2	0

The data shows that after age 44, passengers are mainly absent from single-vehicle crashes. While this does not necessarily mean drivers were alone in the single-vehicle crash, data from our Statewide Seatbelt

Observation Surveys have shown year after year how the rate of belt usage increases for drivers with a passenger compared to driving alone. In the most recent survey (2019), drivers with passengers had a usage rate of 83% compared to 81% for drivers alone. Also, the incidence of a speed-involved unrestrained fatality occurring in a collision with another motor vehicle increases after age 44 as well.

In all, the data analysis provided in this section shows that occupant protection remains an issue in Massachusetts despite recent increases in statewide seat belt usage. Worcester, Hampden, Bristol, Plymouth, and Middlesex Counties are key unrestrained fatality regions for enforcement and messaging. As for the age group, the primary focus of any media outreach should be on the occupants age 21 to 34, which accounts for 36% of all unrestrained fatalities. Any enforcement efforts shall be prioritized between 3 pm, and 3 am when nearly two-thirds of all unrestrained fatalities occur. The worst period is from 12 am to 2:59 am, accounting for 19% of all unrestrained deaths.

Drivers are far more likely to be an unrestrained fatality in a crash than passengers. Over 80% of unrestrained fatalities are drivers and happens with the most frequency on Saturday and Sunday.

One major takeaway from the unrestrained data presented is the relative absence of fatalities for occupants age 15 or younger. From 2016 – 2020, only eight of the 532 unrestrained fatalities were within this age range – 1.1% of all unrestrained deaths.

From 2016 – 2020, there were 997,328 serious injuries reported in crashes along the roadways of Massachusetts where seat belt usage status was determined. Of the nearly one million serious injuries, unrestrained occupants age 15 or younger accounted for 5,451 or 0.5% of these serious injuries. For unrestrained occupants age 8 or younger, it was 0.2%.

OGR is confident its child passenger safety programs and seat distribution efforts have contributed significantly to the low count of under 16 unrestrained fatalities and serious injuries. Furthermore, Massachusetts laws require seat belt (or car seat) usage by any child age 13 or under. Once over 13, occupants fall under the secondary seat belt law.

For FFY 2022, OGR will continue funding important occupant protection programs and activities such as the Annual Statewide Seat Belt Survey, the CIOT mobilization campaign, and media messaging through various mediums such as television, radio, and social media platforms. The overarching message conveyed to Massachusetts motor vehicle occupants is the plain and simple fact that failure to wear seat belts will significantly increase one's chances of dying. Restrained occupants have a survival rate of over 75%, while unrestrained occupants in a crash have less than a 25% chance of surviving.

Performance Measure for Occupant Protection

Number of Unrestrained MV Occupant Fatalities

FFY 2022 Target: 4% decline in the five-year average from 106 in 2020 to 102 by December 31, 2022.

Observed Seat Belt Usage Rate

FFY 2022 Target: 4% increase in the five-year average from 78 in 2019 to 81 by December 31, 2022.

Planned Activities for FFY 2022

Occupant Protection Media

ID: OP-22-01

Primary Countermeasure Strategy: Communication Campaign

Description of Planned Activity:

Develop and implement a statewide media campaign to support occupant protection efforts during the May 2022 Click it or Ticket mobilization and into early summer. Based on unrestrained state data, the primary target audience will be men under 34 years of age, and any media buy will skew Bristol and Worcester counties. This target will be expanded following the completion of the 2021 seat belt observation study. OGR will consider national media buy recommendations when planning paid media, including targeting a secondary Spanish audience. OGR will contract with a marketing and advertising agency to execute these paid impaired driving media campaigns. OGR will lead social media and press outreach efforts to garner earned media; both will be done in conjunction with paid media and the enforcement mobilization.

OGR will also work with our media vendor to develop a child passenger safety (CPS) campaign in the lead-up to national CPS Week in September 2022. The messaging and target audience will be based on state data submitted to the National Digital Car Seat Check Form (NDCF).

Internal policies will be followed, noting that all media and communications activities should support data-driven objectives and coordination with other activities and programs, particularly enforcement. Crash and citation data will be used not only for planning enforcement activities but also for determining the target audiences and media channels used to reach those audiences. NHTSA's guidelines will be followed for messaging, demographics, best practices, and target groups for each media campaign.

Countermeasure Strategy Justification: Communication Campaign

Whether by radio, television, outdoor displays, or social media, public outreach is necessary to continually remind Massachusetts motor vehicle occupants of the dangers involved in not wearing a seatbelt.

OGR's FFY 2022 OP media campaigns aim to increase proper occupant restraint usage on the roadways of Massachusetts. As Click It or Ticket is a high-visibility enforcement campaign, media is needed to augment enforcement and maximize awareness efforts. OGR will provide all law enforcement partners access to earned media resources, including a local press release template, social media graphics, and PSAs. This will ensure the messaging about the importance of buckling up is consistent and far-reaching.

Furthermore, with the high percentage of unrestrained fatalities accounting for all traffic fatalities in the southeastern region of Massachusetts, media messaging through radio, television, and/or outdoor signage needs to target communities such as Quincy, Fall River, Brockton, Plymouth, and Brockton.

Also, across Massachusetts, approximately 9% of the population age five or older, speak Spanish. In distributing Spanish-based advertising, OGR hopes to reach audiences in areas where the highest Spanish-speaking populations such as Springfield, Holyoke, New Bedford, Fall River, and Worcester.

As OGR helps roll out the NDCF in Massachusetts and more seat check data is entered into the system, trends will be identified, leading to educational opportunities. OGR will analyze these trends and work with our media vendor to properly message and reach families.

OP-22-01 Occupant Protection Media Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2020	405b Occupant Protection	Occupant Protection	\$600,000	\$0

MSP Occupant Protection CIOT Enforcement

ID: OP-22-02

Primary Countermeasure Strategy: Short-term, High-Visibility Seat Belt Law Enforcement

Description of Planned Activity:

Provide funds to the Massachusetts State Police (MSP) for overtime enforcement to participate in the national Click It or Ticket (CIOT) campaign during May 2022.

Enforcement efforts will increase compliance with occupant protection laws during the day and night and occur at times and locations shown to have high incidences of motor vehicle crashes based on the most current state and local crash and citation data. Other violations, such as speeding and texting, may also be secondarily targeted during these mobilizations. OGR will also provide communication support for the CIOT mobilization in press releases, online advertising, print, and traditional media (radio, television, electronic billboards).

A portion of the funds (approximately \$120k) will be provided to the MSP to conduct sustained high-visibility enforcement targeting seat belt usage during October 2021.

Countermeasure Strategy Justification: Short-term, High-Visibility Seat Belt Law Enforcement

The Massachusetts seat belt usage rate is one of the lowest in the nation. The Click It or Ticket (CIOT) mobilization, conducted concurrently with the national campaign, allows the MSP to perform highly publicized periods of seat belt enforcement patrols and checkpoints. OGR expects extensive communications and targeted enforcement during crucial times to lead to higher seat belt usage and lower unrestrained fatalities.

Based on analysis of unrestrained fatalities, OGR will advise MSP to prioritize targeted enforcement in counties that accounted for 70% of fatalities (Bristol, Hampden, Middlesex, Norfolk, Plymouth and

Worcester) as well as during key periods (Friday through Saturday, 3 pm to 3 am, focusing on principal and minor arterial roadways).

OP-22-02 MSP Occupant Protection CIOT Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2021	405b OP Low	405b Low HVE	\$550,000	\$0

Car Seat Distribution Program

ID: OP-22-03

Primary Countermeasure Strategy: Child Restraint System Inspection Stations

Description of Planned Activity:

OGR will provide car seats to municipal and state agencies and nonprofit organizations via a competitive solicitation. The primary goal of this program will be to provide seats and child passenger safety education to low-income families. Providing these seats will also enhance fitting stations and seat check events where technicians may encounter expired, misused, or damaged seats.

Grant subrecipients will be selected based on the quality of their CPS program, their demonstrated need for seats, their community partnerships, and their outreach plan to low-income families.

Any seat check involving the issuance of a grant-funded seat will be entered into the National Digital Car Seat Check Form as recommended in the 2020 Occupant Protection Assessment.

Countermeasure Strategy Justification: *Child Restraint System Inspection Stations*

Car seats decrease the risk of fatal injury by 71% among infants and 54% among toddlers. Booster seats reduce the risk of nonfatal injuries by 45% among four-to-eight-year-old compared to the seat belt alone. Car and booster seats need to be installed and used correctly to prevent injuries and fatalities, yet misuse is abundant, and more than half of all seats are installed incorrectly. This grant removes any financial barrier for low-income families to obtain a car seat and helps connect families in need with certified technicians who can ensure their seats are installed and used correctly.

Even with the financial barrier removed, OGR is working hard to ensure low-income communities in Massachusetts have access to new seats through their respective police departments. Communities such as Boston, Springfield, Chicopee, Lynn, Fall River, and New Bedford, and Worcester, all with concentrated low-income areas, will be a primary focus of OGR with outreach of the grant’s availability.

OP-22-03 Car Seat Distribution Program Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Occupant Protection	\$425,000	\$425,000

Child Passenger Safety Training Program

ID: OP-22-04

Primary Countermeasure Strategy: Child Restraint System Inspection Stations

Description of Planned Activity:

OGR will contract with Baystate Medical Center to recruit, train, and maintain a sufficient number of certified child passenger safety (CPS) technicians and instructors in Massachusetts. Baystate will plan and conduct technician, renewal, update, special needs, school bus, and ambulance classes across the state. Baystate has developed partnerships with police and fire departments, EMS agencies, hospitals, non-profit organizations, and pupil transport agencies to help facilitate these trainings annually.

Baystate will lead the state’s effort in recertifying technicians by ensuring instructors and technician-proxies are available for sign-offs either at events or appointments. Baystate anticipates offering nine CPS Technician classes, five Renewal, three CPS Update, a Special Needs class, a School Bus class and an ambulance class. Baystate will also coordinate monthly half-day CPS awareness classes with social workers from the Massachusetts Department of Children and Families (DCF) and monthly non-certification, general CPS awareness trainings with DCF staff.

Programs funds will be used for Baystate to purchase approximately 20 training seats, 10 training dolls, and up to 230 tablets to ensure each inspection site in the state has at least one tablet to utilize during seat checks to enter data into the National Digital Car Seat Check Form.

Countermeasure Strategy Justification: *Child Restraint System Inspection Stations*

The misuse and/or incorrect installation of a child restraint seat has been a concern of OGR, medical professionals, and law enforcement for many years. An incorrectly installed car seat or using an outdated child restraint could result in serious or fatal injuries to the child in a motor vehicle crash. Maintaining a sufficient number of technicians will ensure the continued operation of inspection stations. Child passenger safety (CPS) inspection stations, or 'fitting stations,' are events where parents and caregivers can receive instruction from certified CPS technicians on proper installation methods and have current car seats examined for usability and safety.

This program ensures there is a sufficient number of active and certified CPS technicians in Massachusetts. Technicians are needed to assist caregivers with the proper installation of their child's car seat and educate them on their proper usage to prevent serious injuries and fatalities. OGR hopes to get the unrestrained fatality number among children age ten or younger to zero every year, going forward with more certified CPS technicians available.

OP-22-04 Child Passenger Safety Training Program Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405b Occupant Protection Low	405b Low	\$350,000	\$0

Statewide Seat Belt Observation Survey

ID: OP-22-05

Primary Countermeasure Strategy: Data Collection

Description of Planned Activity:

Provide funding for a competitively selected vendor to conduct the statewide seat belt observation survey utilizing NHTSA methodology. This survey is required of all states by NHTSA and will occur following the May Click It or Ticket (CIOT) Mobilization. This survey will capture demographic data to assist in measuring performance and targeting future occupant protection programs. A final report will be submitted to OGR for review and dissemination.

Countermeasure Strategy Justification: *Data Collection*

Taking place after the May CIOT mobilization, the statewide seat belt survey is, in a way, a measure of the impact of OGR's media messaging and enforcement grant activity by state and local police. In 2019, the seat belt usage rate remained at 82%, the same as in 2018. This data shows the efforts by OGR and its partners are making a positive influence on occupant behavior, leading to an increase in seat belt usage. There was no survey conducted in 2020 due to the impact of the COVID-19 pandemic. For FFY 2021, the survey will again be a sounding board on occupant protection messaging and targeted enforcement areas. The results will help drive media messaging and enforcement focus for future occupant protection programs and activities.

OP-22-05 Statewide Seat Belt Observation Survey Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405b Occupant Protection Low	405b Low	\$205,718	\$0

MSP Child Passenger Safety (CPS) Program

ID: OP-21-06

Primary Countermeasure Strategy: Child Restraint System Inspection Stations

Description of Planned Activity:

Massachusetts State Police (MSP) will run monthly seat check events at five different barracks and six larger scale check events at locations TBD (previous events held at Walmart). These events will be publicized broadly on social media and via direct contact with community organizations.

Funds will be used to purchase tablets and cover travel and registration costs for 3 MSP technicians to attend the 2022 Lifesavers Conference. At least one tablet will be provided to each of the five barracks hosting monthly seat check events so that data can be entered into the National Digital Car Seat Check Form.

Funds will also cover overtime expenses for troopers to staff these events and for MSP to purchase car seats to distribute to families in need. MSP will continue to partner with the Department of Children and Families, YMCA, and Boys and Girls Clubs to ensure low-income families are aware of these CPS programs and events.

Countermeasure Strategy Justification: Child Restraint System Inspection Stations

This program will help connect local families with certified technicians who can ensure their seats are installed and used correctly. It will also ensure that MSP's technicians, many of whom are newly certified, maintain their skills and certification.

Coupled with the CPS Equipment and CPS Training programs, Massachusetts will gain even further reach and impact car seat safety as more law enforcement officers become certified in inspecting and installing car seats. With a larger pool of certified and knowledgeable technicians, parents and caregivers can have peace of mind knowing the car seat used by their child is properly and securely placed in the vehicle.

OP-22-06 MSP CPS Program Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405b FAST Act	Occupant Protection	\$140,000	\$0

Program Management – Occupant Protection

ID: OP-22-07

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Provide sufficient staff to manage programming described in this plan and cover travel, professional development expenses, conference fees, and postage and office supplies. All funding intended for supporting staff and will not be sub awarded.

Countermeasure Strategy Justification: Program Management

The day-to-day operation of OGR requires funding to allow staff to oversee the occupant protection safety program properly. Lack of oversight due to reduced or no funding could lead to increased unrestrained fatalities and injuries on the roadways of Massachusetts.

OP-22-07 Program Management – Occupant Protection Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Occupant Protection	\$165,000	\$0

Program Area: Speed Management

Speeding increases the chances of a vehicle driver (or motorcycle operator) causing a crash that involves a serious or fatal injury. According to FARS, speeding involves one of three behaviors: (1) driving too fast for conditions; (2) operating over the posted speed limit; and (3) racing in the street. When engaging in these types of behaviors behind the wheel, drivers run the risk of:

- Losing control of the vehicle, especially during inclement weather (snow, sleet, rain)
- Reducing the effectiveness of the vehicle's occupant protection features (for example, airbags are considered most effective at preventing injuries or death at 25 mph or lower)
- Increasing the amount of distance needed to safely stop the vehicle (for a car traveling 60 mph, 240 feet is required to stop: at 80 mph, 400 feet)
- Reducing the driver's ability to react quickly to sudden changes on the road
- Increasing the severity of a crash as well as the resulting damage and injuries

Why do drivers engage in speeding? Reasons vary from driver to driver. Some of the most common reasons are running late, being distracted, thrill-seeking, alcohol or drug impairment, and the driver's age, as younger drivers tend to be more prone to speeding.

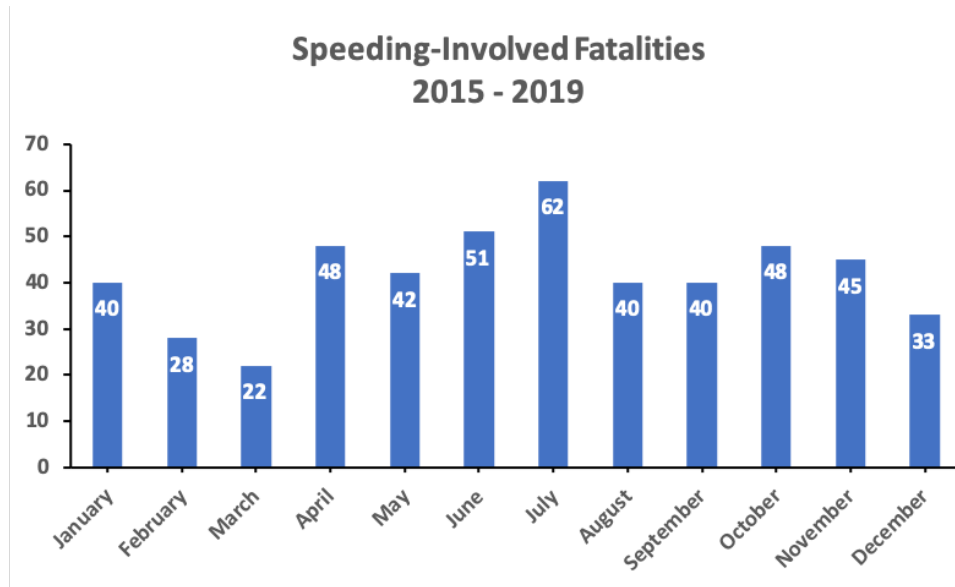
From 2015 to 2019, there were 49,018 speeding fatalities in the United States. Speed-related deaths accounted for 27% of all traffic fatalities reported. There were 499 speed-related fatalities in Massachusetts, representing 28% of traffic fatalities across the Commonwealth during the same period. During the five years of 2015 to 2019, Massachusetts averaged 99.8 speeding fatalities per year - the highest among the six New England states. Despite having the highest number of speeding fatalities per year, Massachusetts had the lowest per VMT fatality rate for speeding fatalities in the region in 2019.

State	2015-2019 Speeding Fatalities	Average Yearly Speeding Fatalities	Vehicle Miles Traveled in 2019	Speeding Fatality/VMT Rate
CT	413	82.6	31,601	0.26
MA	499	99.8	64,890	0.15
ME	257	51.4	14,871	0.35
NH	297	59.4	13,828	0.43
RI	150	30	7,581	0.40
VT	128	25.6	7,346	0.35

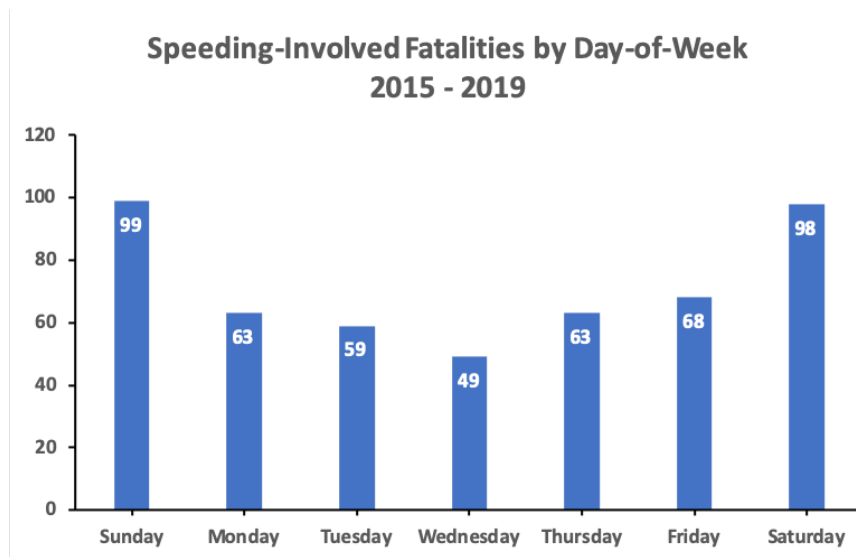
Even as the most populous state in New England, Massachusetts has the lowest per VMT speeding fatality rate. With a population nearly 50% less (3.5 million vs. 6.8 million), Connecticut had a fatality/VMT rate almost double Massachusetts'. It is a testament to the hard work that law enforcement professionals across the state do every day to ensure drivers are adhering to the posted speed limits and OGR's continuing efforts to educate drivers on the dangers of speeding.

When are speeding fatalities taking place in Massachusetts?

From 2015 to 2019, speeding fatalities took place most often during June and July. The two-month period accounted for 27% of all speed-related fatalities across the state. In general, warmer months (April - September) tended to have higher counts of speeding fatalities. These six months represented nearly 60% of all speed-related fatalities from 2015 to 2019.



By the day of the week, the weekend (Saturday/Sunday) accounted for 39% of all speed-related fatalities. If Friday is included in the calculus, the three-day period represented 53% of all speed-related crashes. The average number of speeding fatalities for the weekdays (Monday - Friday) was 60, while for the weekend (Saturday/Sunday), it was 99.



For time-of-day, speeding fatalities were more prevalent between the hours of 6 pm and 2:59 am. The nine-hour period accounted for nearly 60% of all speed-related fatalities from 2015 to 2019.

2015 - 2019			
Time Period	Speeding Fatalities	All Fatalities by Time	Pct. All Fatalities
12am - 2:59am	105	233	45%
3am - 5:59am	41	121	34%
6am - 8:59am	37	154	24%
9am - 11:59am	22	161	14%
12pm - 2:59pm	46	219	21%
3pm - 5:59pm	52	278	19%
6pm - 8:59pm	103	305	34%
9pm - 11:59pm	84	251	33%

In terms of total fatalities, 12 am to 2:59 am, and 6 pm to 11:59 were the top two time frames from 2015 to 2019. The two time periods accounted for 42% of fatalities. The number of speed fatalities per time frame as a percentage of all fatalities reported during the periods is provided in the chart above. With nearly half of its fatalities related to speeding, the hours between midnight and 3 am are the most prevalent times for drivers to speed

Combining time-of-day with day-of-week will provide an even clearer picture of what time and what days are the most dangerous in speeding fatalities. In the chart below, the darker the cell, the more speed-related fatalities during that period from 2015 to 2019.

Time Period	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
12am - 2:59am	20	15	8	8	9	11	34
3am - 5:59am	13	5	0	4	4	8	7
6am - 8:59am	6	9	3	7	3	3	6
9am - 11:59am	4	3	3	2	5	4	1
12pm - 2:59pm	8	2	8	6	8	5	9
3pm - 5:59pm	8	8	10	4	7	5	10
6pm - 8:59pm	24	11	13	5	14	22	14
9pm - 11:59pm	15	8	14	12	10	9	16

The higher speed-related fatalities during late evening and early morning reflect a likelihood that the traffic volume is lighter, allowing drivers to go faster. Another factor is impaired driving. From 2015 to 2019, there were 230 speed-related fatalities where the highest driver BAC in the crash was 0.08 or more. This represented 47% of all speed-related fatalities.

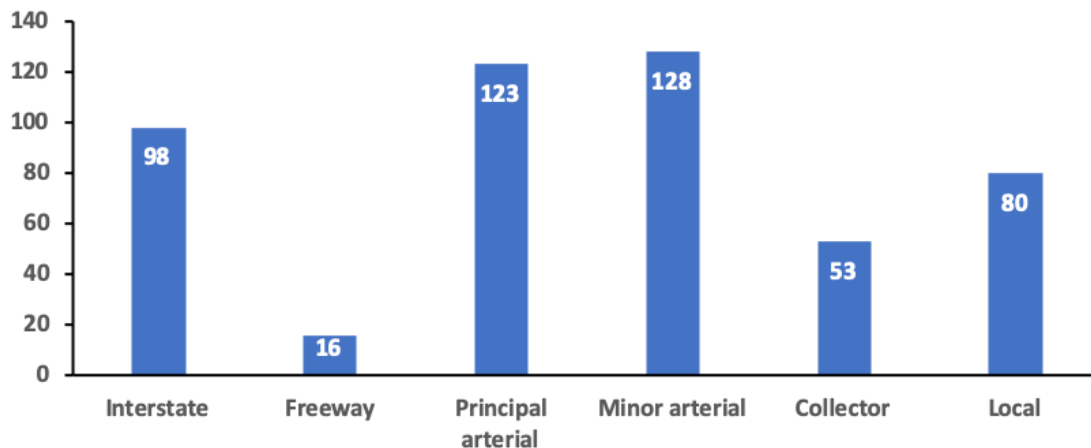
Time Period	Highest Driver BAC 0.08+	Total Speeding Fatalities	Pct. BAC 0.08+ in Speed Fatalities
12am - 2:59am	75	105	71%
3am - 5:59am	25	41	61%
6am - 8:59am	9	37	24%
9am - 11:59am	5	22	23%
12pm - 2:59pm	9	46	20%
3pm - 5:59pm	11	52	21%
6pm - 8:59pm	48	103	47%
9pm - 11:59pm	48	84	57%

The hours from 6 pm to 5:59 am accounted for 196 of the fatalities (85%). Of these fatalities, 118 took place over the three days of Friday (30), Saturday (42), and Sunday (46). For law enforcement conducting any overtime-funded enforcement activity, they should be prepared to confront impaired drivers when stopping speeding vehicles.

Where are speeding fatalities occurring?

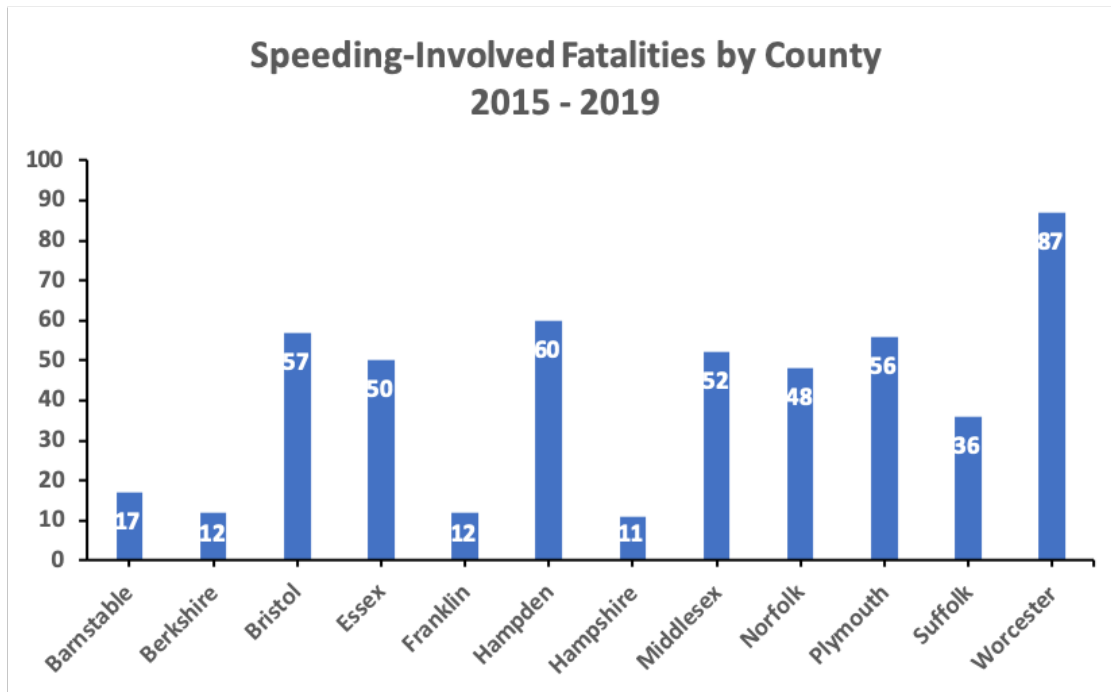
From 2015 to 2019, over half of speed-related fatalities took place along principal and minor arterial roadways. As a percentage of all traffic fatalities reported, principal arterial and minor arterial speed-related fatalities accounted for 23% and 28%, respectively, of all traffic fatalities reported on these two roadway types.

**Speeding-Involved Fatalities by Roadway Type
2015 - 2019**



While lower than principal and minor arterials, interstate speed-related fatalities reported a higher percentage of fatalities, with 35% of deaths (98 of 282) occurring on interstates attributed to speeding.

By county, Worcester led all counties with 87 speed-related fatalities reported from 2015 to 2019. Hampden and Bristol were second and third, respectively. These three counties accounted for 41% of all speed-related fatalities reported across the state.



By roadway type, Worcester County accounted for 21% of all speed-involved fatalities from 2015 to 2019. With four interstates running through the county - 90, 190, 290, and 395 - it is not surprising Worcester has had a high number of speeding fatalities.

Roadtype	Total Speeding Fatalities	Barnstable	Berkshire	Bristol	Essex	Franklin	Hampden	Hampshire	Middlesex	Norfolk	Plymouth	Suffolk	Worcester
Interstate	98	0%	1%	12%	12%	0%	13%	0%	12%	7%	11%	9%	21%
Freeways	16	0%	0%	13%	6%	0%	0%	0%	13%	19%	19%	13%	19%
Principal Arterial	123	6%	2%	4%	12%	3%	11%	4%	15%	15%	6%	7%	15%
Minor arterial	128	4%	2%	15%	10%	2%	12%	2%	9%	9%	12%	5%	18%
Collector	53	2%	9%	11%	2%	8%	9%	4%	8%	4%	21%	2%	21%
Local	79	5%	3%	15%	10%	1%	16%	1%	6%	8%	11%	10%	13%

At the local level, Hampden and Bristol accounted for 31% of all speeding-involved fatalities along local roads. For principal arterials, 45% of all speeding-involved fatalities on this road type occurred in three counties - Middlesex, Plymouth, and Worcester.

One factor that could explain the high percentage of fatalities along certain road types is driver impairment. Using FARS, the number of speed-involved fatalities with the highest driver BAC of 0.08+ by county was determined and divided by the number of speed-involved fatalities for each county. Below is a chart showing the number and percentage of each county's speed-related fatalities that involved a driver with BAC 0.08 or higher.

Number of Speed-Involved Fatalities with Highest Driver BAC 0.08+												
Roadtype	Barnstable	Berkshire	Bristol	Essex	Franklin	Hampden	Hampshire	Middlesex	Norfolk	Plymouth	Suffolk	Worcester
Interstate			6	5		5		5	3	7	7	11
Freeways								1	1		2	2
Principal Arterial	4		2	4	2	7	2	8	9	4	3	10
Minor arterial	2		12	4	1	5	2	5	5	9	3	14
Collector	1	2	4	1		3	2	2	2	1	6	4
Local	3		6	1		5		1	3	6	4	3
Total	10	3	30	16	4	26	6	21	22	32	19	44

Percentage of Speed-Involved Fatalities with Highest Driver BAC 0.08+												
Roadtype	Barnstable	Berkshire	Bristol	Essex	Franklin	Hampden	Hampshire	Middlesex	Norfolk	Plymouth	Suffolk	Worcester
Interstate			50%	42%		38%		42%	43%	64%	78%	52%
Freeways								50%	33%		100%	67%
Principal Arterial	57%		40%	27%	50%	50%	40%	44%	50%	57%	33%	53%
Minor arterial	40%		63%	31%	33%	33%	67%	45%	42%	60%	43%	61%
Collector	100%	40%	67%	100%		60%	100%	50%	50%	55%		36%
Local	75%		50%	13%		38%		20%	50%	67%	50%	30%
Pct. Of All Speed-Involved Fatalities	59%	25%	53%	32%	33%	43%	55%	40%	46%	57%	53%	51%

The first thing that stands out is that six of the twelve counties listed had 50% or more of their speed-involved fatalities involving a driver with a BAC of 0.08 or higher. This indicates there is a correlation between driving under the influence and speeding. Secondly, the high local percentages in Barnstable, Bristol, Norfolk, Plymouth, and Suffolk Counties suggest that the proximity between the place of last drink and residence is much closer than in other counties. This could mean two things: (1) impaired drivers are drinking in locations located along local roads (friend's house, corner bar, town park); or (2) the distance from the main strip of pubs and restaurants to a local residential road is minimal. Lastly, the data clearly shows that law enforcement should approach any speed-focused enforcement activities to detect impaired drivers.

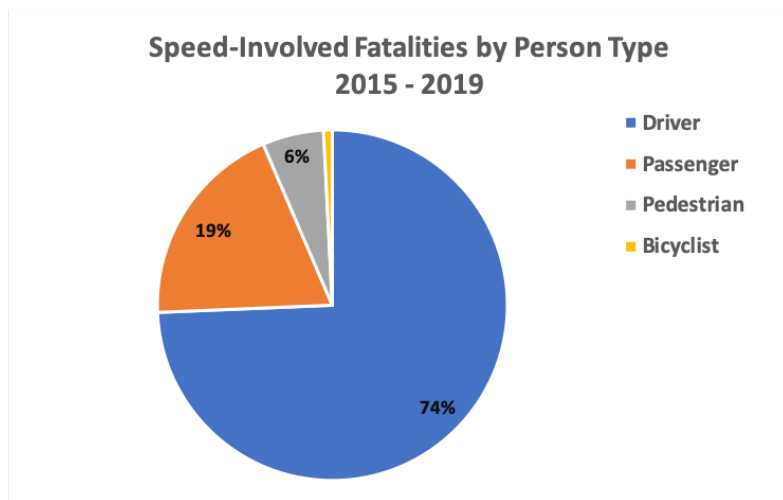
One last aspect of speed-involved fatalities and counties is the time of day when fatalities occur. As mentioned previously in Chapter 4 (Impaired Driving), more impaired driving fatal crashes occur between 6 pm and 3 am than any other period. With this in mind and the data shown in the chart below, it is not surprising that every county (of the twelve - Dukes/Nantucket not included because of low numbers) had more of its speed-involved fatalities during nighttime.

County	Total Speed-Related Fatalities	Daytime	Nighttime
Barnstable	17	41%	59%
Berkshire	12	42%	58%
Bristol	57	18%	81%
Essex	50	40%	58%
Franklin	12	42%	50%
Hampden	60	28%	70%
Hampshire	11	36%	55%
Middlesex	52	35%	65%
Norfolk	48	35%	63%
Plymouth	56	27%	73%
Suffolk	36	17%	81%
Worcester	87	37%	60%

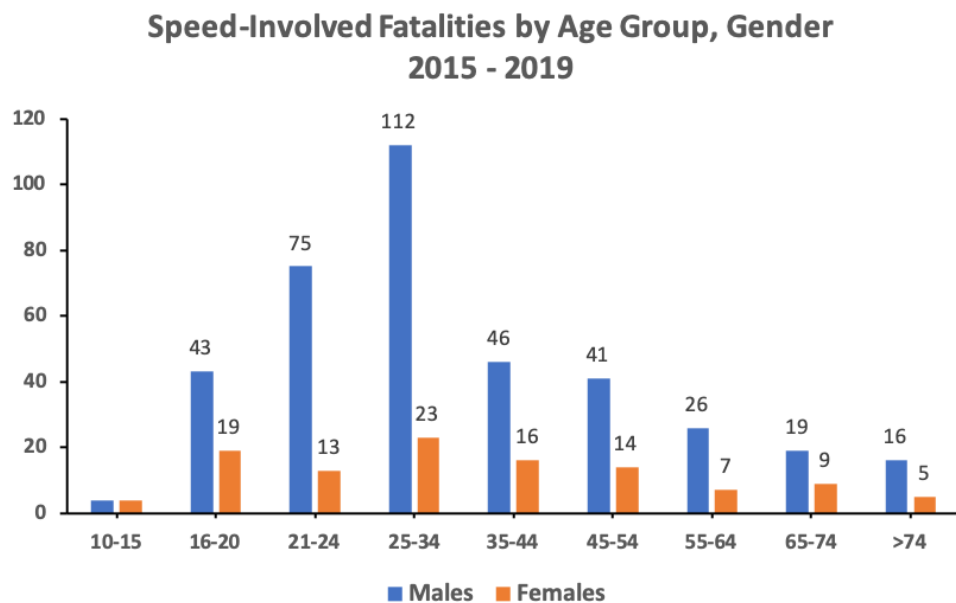
For counties such as Barnstable and Berkshire, a balanced enforcement approach would be appropriate. Law enforcement should plan overtime enforcements during both day and night shifts. As for counties like Bristol, Hampden, Plymouth, and Suffolk - all with 70% or more speed-involved fatalities occurring at nighttime - law enforcement should focus all overtime enforcement efforts on nighttime periods.

Who are the speed-involved fatalities?

Of the 499 speed-involved fatalities reported in Massachusetts, drivers accounted for nearly three-quarters of all fatalities. Males were 77% of all speed-involved fatalities.



Fatalities among ages 21 to 34 accounted for 45% of speed-involved fatalities. After rising with each age group from 16-20 to 25-34, males declined substantially with subsequent age groups. This may indicate a lowered appetite for speeding among male drivers as they get older.



By all accounts, speed-involved fatalities are primarily the domain of those under age 34, led chiefly by male drivers. Of the 308 male driver fatalities, 63% were from single-vehicle crashes. The top four first harmful events (FHE) were:

- Tree - 48 fatalities
- Curb - 32 fatalities
- Guardrail - 26 fatalities
- Utility Pole/Light Pole - 21 fatalities

While female drivers accounted for far less of the speed-involved fatalities, female drivers accounted for over half of all female speed-involved fatalities. Of the 60 female driver deaths, 55% were from single-vehicle crashes. The top four FHE are the same as it was for males:

- Tree - 7 fatalities
- Guardrail - 4 fatalities
- Curb - 3 fatalities
- Utility Pole/Light Pole - 3 fatalities

Even though the top FHEs for both male and female driver fatalities in a single-vehicle crash were the same, the type of vehicle used by the gender is much different. Of the 193 male driver fatalities, 53% were driving a passenger car at the time of death. For females, 74% of the 31 deaths for female drivers were in a passenger car. The big difference comes with motorcycles, and male drivers accounted for all speed-related fatalities in a single-vehicle crash on a motorcycle.

Drivers in Single-Vehicle Crashes		
Vehicle Type	Male	Female
Pass Car	103	23
Pickup Truck	13	1
SUV	23	7
Large Truck	3	0
Motorcycle	48	0
Unknown	3	0

One last element to examine regarding speeding-involved fatalities among drivers in a single-vehicle crash is restraint/helmet usage. As mentioned previously, 229 drivers (193 males, 31 female) died in a single-vehicle crash from 2015 to 2019 in which speeding occurred. Of these 229, the restraint/helmet use at the time of death is known for 195 drivers.

Vehicle Type	Restrained		Unrestrained	
	Male	Female	Male	Female
Passenger Cars/Light Trucks	27	9	97	15
Motorcycle	42	0	5	0

For drivers, both male and female, of passenger cars or light trucks, 75% were unrestrained at the time of death. For drivers of motorcycles, all males, lack of helmet, was found in only 11% of fatalities, a testament to Massachusetts' helmet law. In general, speeding and lack of proper restraint are highly likely for drivers, whether male or female, in a single-vehicle crash.

The key takeaways from this analysis of speeding-involved fatalities from 2015 to 2019 are:

- Speed-related fatalities are most frequent over the weekend (Friday-Sunday) and between 3 pm and 3 am.
- Focus on speeding enforcement and media messaging primarily during the four months of April - July, where 41% of all speeding-related fatalities occurred from 2015-2019.
- Southeastern Massachusetts (Bristol & Plymouth County) and Hampden County, and Worcester County are top areas for speeding fatalities, accounting for over half of all speeding fatalities from 2015-2019. These four counties also accounted for over half of all nighttime speeding fatalities. Media messaging will target these areas, while OGR will work with law enforcement within the four counties to prioritize overtime enforcement activity for nighttime.
- The target demographic for speeding drivers is males under age 35.
- The primary type of roadway for enforcement should be arterials, with activity happening between 6 pm - 2:59 am. For local roads, any enforcement should occur between 6 pm-11:59 pm. Any interstate patrols should be done between 12 am, and 3 am as drivers are more likely to be speeding on the highways when very little traffic is present.

Performance Measure for Speed Management

Number of Speed-Related Fatalities

FFY 2022 Target: 5% decline in the five-year average from 95 in 2020 to 90 by December 31, 2022

Planned Activities for FFY 2021

Speed and Aggressive Driving Media

ID: SC-22-01

Primary Countermeasure Strategy: Communication Campaign

Description of Planned Activity:

Develop and implement a statewide paid and earned media campaign to support the June 2022 speed mobilization. Based on state data, OGR will target communication efforts to male drivers under 35 years of age in the following counties: Bristol, Hampden, Plymouth, and Worcester. Earned media will augment the paid campaign while incorporating state laws and highlighting the work of state and local law enforcement agencies.

OGR will contract with a marketing and advertising agency to execute this paid media campaign. OGR will lead social media and press outreach efforts to garner earned media; both will be done in conjunction with paid media and the enforcement mobilization.

Internal policies will be followed, noting that all media and communications activities should support data-driven objectives and coordination with other activities and programs, particularly enforcement. Crash and citation data will be used not only for planning enforcement activities but also for determining the target audiences and media channels used to reach those audiences. NHTSA's guidelines will be followed for messaging, demographics, best practices, and target groups for each media campaign.

Countermeasure Strategy Justification: Communication Campaign

Stopping drivers exceeding the posted speed limit or driving too fast for current conditions is a part of the overall objectives for high-visibility speed safety media campaigns. These campaigns will support the speed and enforcement mobilizations conducted by both State and local police. Messaging will target a key demographic: occupants under age 34, which accounted for 62% of fatalities in a speed-related crash. The focus will be on metro areas surrounding Boston, Worcester, Springfield, and Southeastern Massachusetts (Plymouth and Bristol County). By prioritizing messaging and overtime enforcement in these critical areas, OGR is confident speeding fatalities will decline in FFY 2022.

SC-22-01 Speed and Aggressive Driving Media Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2021	NHTSA 402	Speed and Aggressive Driving (Paid Advertising)	\$450,000	\$0

MSP Speed Enforcement

ID: SC-22-02

Primary Countermeasure Strategy: High-Visibility Enforcement

Description of Planned Activity:

Funds will be provided to the MSP to conduct speed-related enforcement activities to decrease the incidence of speeding violations and reduce the rate of speed-related motor vehicle crashes along the Commonwealth’s major highways. In June, a planned speed enforcement mobilization will run with enforcement efforts conducted by local police departments participating in the Municipal Road Safety program. In addition to the June campaign, MSP will conduct sustained speed patrols throughout October 2021 and speed hotspot high-visibility patrols throughout the year. A supporting media campaign is planned to augment these enforcement efforts.

A limited portion of this program’s funds will be provided to the MSP for equipment purchases that include approximately 37 radar units. These speed measuring units will serve to enhance enforcement efforts towards the overall performance of the program.

Countermeasure Strategy Justification: High-Visibility Enforcement

High-visibility enforcement campaigns have been shown in the past to be effective in helping deter speeding and aggressive driving. OGR will work with selected subrecipients to target high incidence periods of speeding and aggressive driving in Massachusetts based on data analysis. For example, enforcement patrols should be more frequent during the 6 pm to 3 am period, which accounted for 60% of all speed fatalities from 2015-2019 and should be conducted over Friday, Saturday, and Sunday. This three-day period had over half of all fatalities from 2015-2019. Through this data-driven targeted approach, high-visibility enforcement will lead to lower speeding and aggressive driving behavior in 2022 and beyond.

SC-22-02 Speed Enforcement Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2020	NHTSA 402	Speed Enforcement	\$750,000	\$0

Program Management – Speed Management

ID: SC-22-03

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Provide enough staff to manage the programming described in this plan and cover travel, professional development expenses, conference fees, and postage and office supplies. All funding intended for supporting staff and will not be sub awarded.

Countermeasure Strategy Justification: Program Management

The day-to-day operation of OGR requires funding to allow staff to oversee the speed management safety program properly. Lack of oversight due to reduced or no funding could lead to increased speed-related fatalities and injuries on the roadways of Massachusetts.

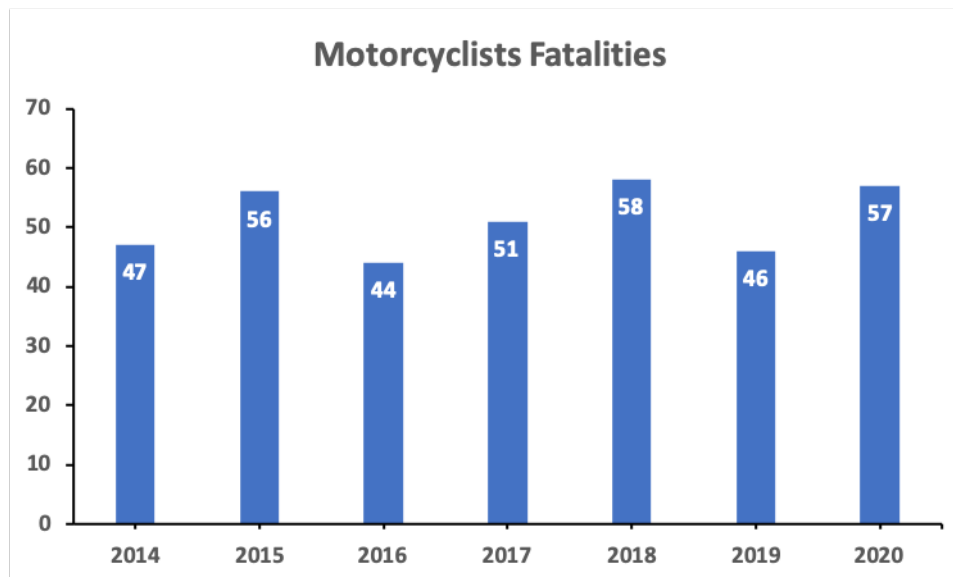
SC-22-03 Program Management – Speed Management Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2021	NHTSA 402	Speed Management	\$95,000	\$0

Program Area: Motorcyclist Safety

From 2015 to 2019, there were 25,644 motorcyclist fatalities across the United States out of the 183,684 traffic fatalities reported. Motorcyclists' deaths represented 14% of all traffic fatalities in the country. Like the United States, motorcyclist fatalities are 14% of all traffic deaths in Massachusetts. This percentage has remained relatively constant over the last three five-year periods - 2014 to 2018, 2015 to 2019, and 2016 to 2020.

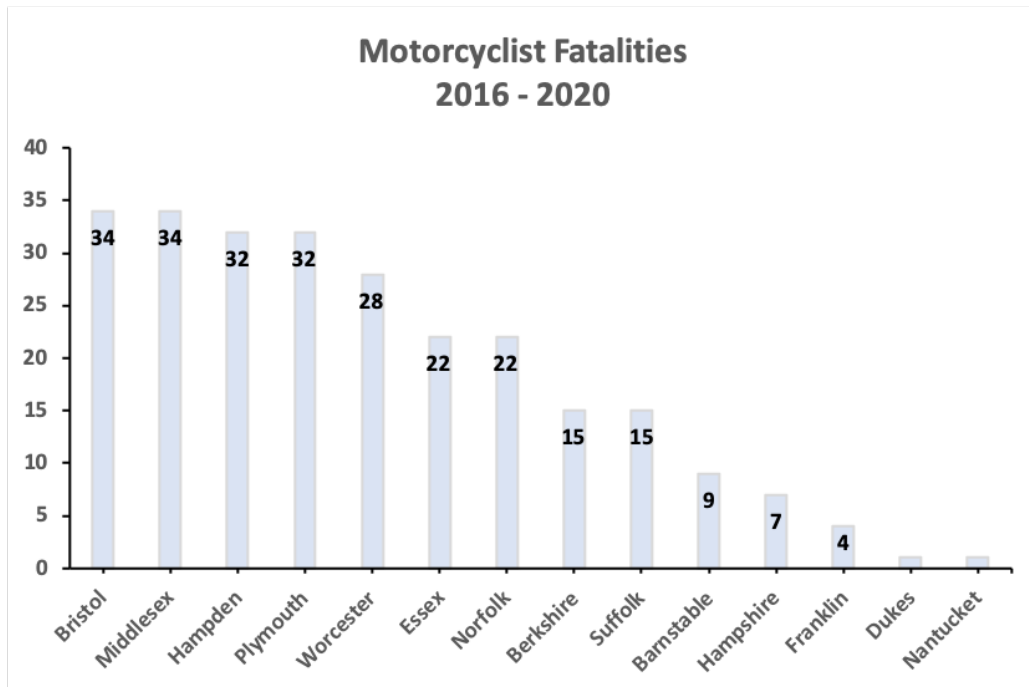
In 2020, motorcyclist fatalities rose 24% from 46 in 2019 to 57. Overall, the five-year total of motorcyclist fatalities for 2016-2020 is 256, one fatality higher than 2015-2019. While this jump may cause concern, motorcyclist fatalities have fluctuated from year to year since 2014 and have been unpredictable in projecting future outcomes.



From 2014 to 2020, the average number of motorcyclist fatalities was 51. Despite the unpredictability of forecasting motorcyclist fatalities, having two of the last three years at a higher count than the average is concerning. To ensure 2021 and 2022 have lower motorcyclist fatalities, OGR plans to increase efforts to improve motorcyclist safety on the Massachusetts roadways in FFY 2022.

Where are the motorcyclist fatalities?

Over half of all motorcyclist fatalities from 2016 to 2020 occurred in four counties: Bristol, Hampden, Middlesex, and Plymouth. By town, Boston (Suffolk) and Springfield (Hampden) had 15 motorcyclist fatalities between 2016 and 2020. For Boston, the city accounted for all of Suffolk County's motorcyclist fatalities; for Springfield, nearly 50% of the 32 deaths reported.



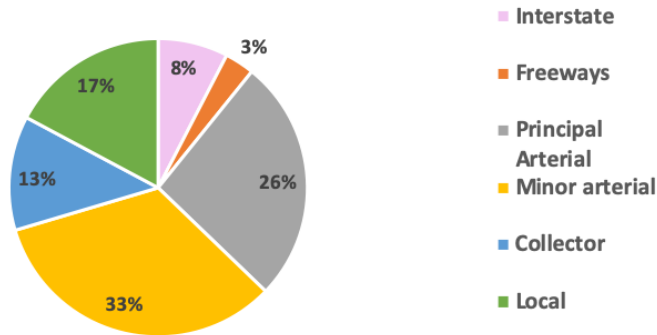
Below is a list of the top motorcyclist fatality community by county for 2016 to 2020:

- Barnstable - Bourne (2 fatalities)
- Berkshire - North Adams (3)
- Bristol - Fall River (9)
- Essex - Lynn (3)
- Franklin - Greenfield (2)
- Hampden - Springfield (15)
- Middlesex - Westford, and Woburn (4)
- Norfolk - Milton, Quincy, and Wrentham (3)
- Plymouth - Middleboro (5)
- Suffolk - Boston (15)
- Worcester - Worcester (10)

Hampshire County had seven motorcyclist fatalities, each in a different town: Amherst, Belchertown, Easthampton, Granby, Huntington, Ware, Westhampton.

In terms of roadway type, most motorcyclist fatalities took place along either principal or minor arterials. Minor arterial accounted for 83 deaths, while principal arterials were the location for 66 fatalities. The two roadway types represented nearly 60% of all motorcyclist fatalities from 2016 to 2020. Surprisingly, given the high speeds of travel, only 8% of deaths took place along interstates. Well over half of the interstate fatalities took place in either Middlesex or Suffolk County.

Motorcyclists Fatalities by Roadway Type 2016 - 2020



County	Interstate	Freeways	Principal Arterial	Minor arterial	Collector	Local
Barnstable	0	0	2	3	1	2
Berkshire	0	0	4	6	4	1
Bristol	2	3	2	14	3	8
Essex	1	1	6	4	2	8
Franklin	0	0	0	3	1	0
Hampden	2	0	13	8	5	4
Hampshire	0	0	2	2	2	1
Middlesex	6	1	8	9	2	7
Norfolk	2	0	9	7	1	2
Plymouth	1	2	9	11	5	4
Suffolk	4	1	1	7	1	1
Worcester	1	0	10	9	3	4

Of interest is the high number of motorcyclist fatalities in the neighboring counties of Bristol and Plymouth along roads of lesser traffic volume - minor arterial, collector, and local. 45 of 66 fatalities (86%) took place along these roadway types between the two counties.

Data suggests that motorcyclists are more likely to be involved in a crash with another motor vehicle than in a single-vehicle crash. From 2016 to 2020, 143 motorcyclist fatalities reported in the 12 counties listed in the chart above involved a collision with another motor vehicle. This represented 56% of all motorcyclist fatalities in Massachusetts.

Motorcyclists were more likely to collide with another vehicle in Barnstable, Hampshire, Norfolk, and Bristol and much less likely in Plymouth and Worcester. This shows that the need is more significant for driver awareness messaging about motorcyclists in the counties with high collision percentages and more motorcyclist awareness messaging about driving safety in counties with lower collision percentages.

County	Total MC Fatalities	MC Fatalities with Another MV	Pct. Fatalities w/ MV
Barnstable	9	7	78%
Hampshire	7	5	71%
Norfolk	22	15	68%
Bristol	34	21	62%
Essex	22	13	59%
Hampden	32	18	56%
Middlesex	34	19	56%
Berkshire	15	8	53%
Suffolk	15	8	53%
Franklin	4	2	50%
Plymouth	32	15	47%
Worcester	28	12	43%

When are motorcyclist fatalities occurring?

With no protection from the element or cold, motorcycling has typically been considered a warmer weather activity. From 2016 to 2020, the bulk of motorcyclist fatalities occurred between April and October. This seven-month period accounted for 89% of all motorcyclist fatalities.

Motorcyclists Fatalities by Five-Year Periods			
	2014-2018	2015-2019	2016-2020
January	0	1	2
February	2	2	3
March	3	4	8
April	20	21	20
May	24	26	29
June	41	44	46
July	54	50	43
August	46	41	38
September	23	27	27
October	25	21	24
November	14	13	12
December	4	5	4

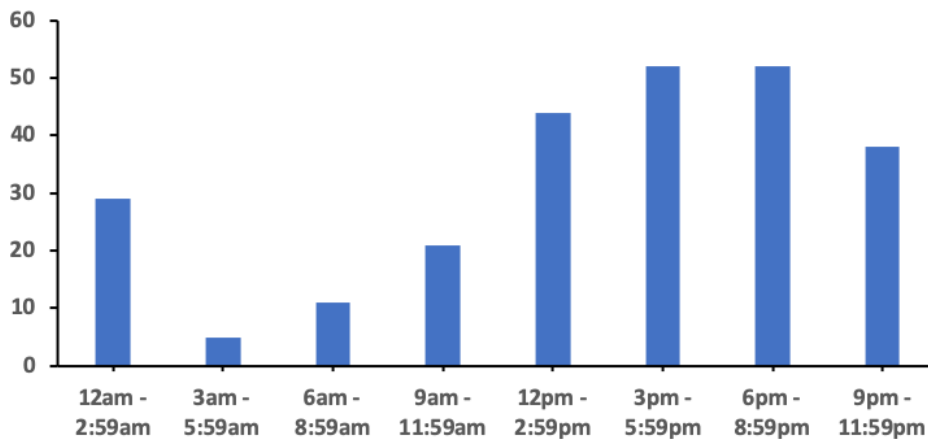
Interestingly, the number of motorcyclist fatalities has been slowly rising among the traditionally cold months (November to March). The number of deaths reported rose from 23 for 2014-2018 to 29 for 2016-2020. One factor could be the increase in temperatures in those months in recent years due to climate change. A review of the average temperature by month during 2014, 2017, and 2020 shows a gradual rise in the average temperature.

Average Temperature for Month			
Month	2014	2017	2020
January	27.25	35.24	38.14
February	29.17	36.13	37.96
March	33.14	33.88	41.63
November	42.55	44.20	47.99
December	38.28	30.44	36.19
Avg.	34.078	35.978	40.382

This may entail soon because OGR should begin considering messaging and enforcement activities related to motorcycles as a year-round endeavor instead of during the warmer months only.

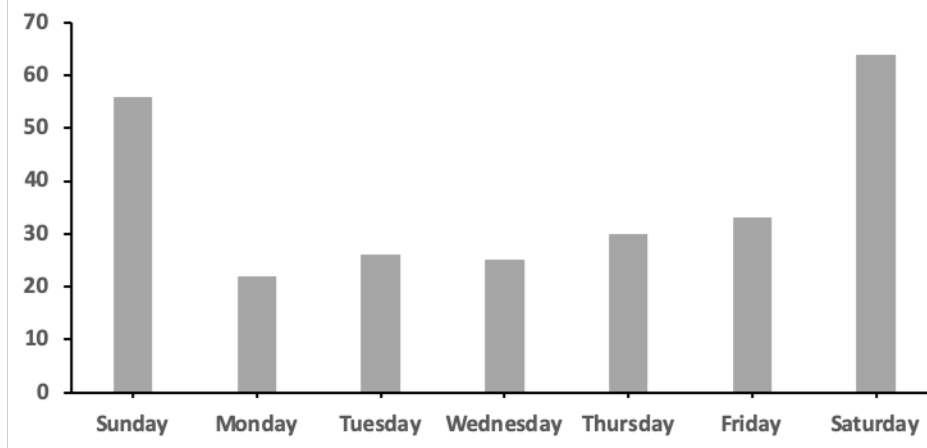
By the time of the day, motorcyclist fatalities were most frequent between 12 pm and 8:59 pm. Fatalities over this period accounted for nearly 60% of all motorcyclist fatalities from 2016 to 2020.

**Motorcyclists Fatalities by Time-of-Day
2016 - 2020**



By day-of-week, the weekend (Saturday/Sunday) accounted for 47% of all motorcyclist fatalities. If Friday is included, the three-day period represented 60% of deaths.

Motorcyclists Fatalities by Day-of-Week 2016 - 2020



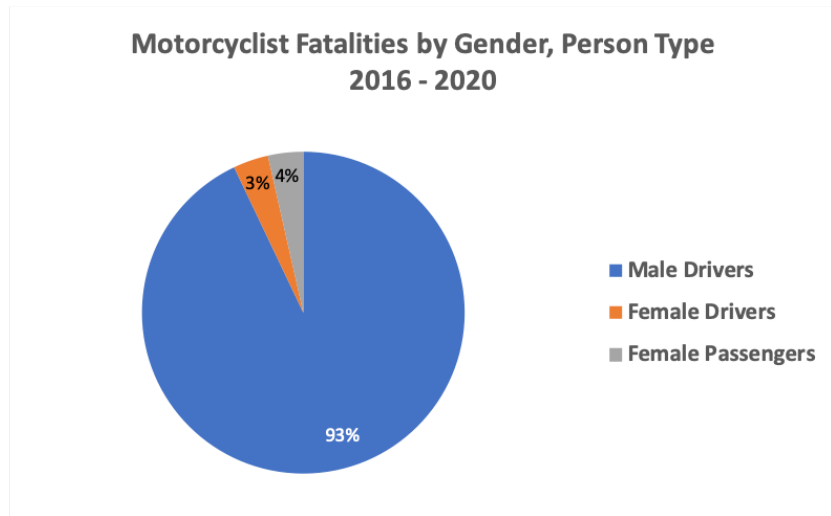
Combining the two measures - time and day - shows that the hours between 12 pm and 8:59 pm on Saturday had the three highest motorcyclist fatality counts.

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total
12am - 2:59am	10	2	2	2	2	5	6	29
3am - 5:59am	0	1	0	3	0	0	1	5
6am - 8:59am	1	1	1	1	3	2	2	11
9am - 11:59am	7	0	2	0	4	4	4	21
12pm - 2:59pm	10	2	5	5	2	1	19	44
3pm - 5:59pm	6	6	7	6	5	10	12	52
6pm - 8:59pm	11	4	5	3	9	7	13	52
9pm - 11:59pm	8	6	4	4	5	4	7	38
Unknown	3	0	0	1	0	0	0	4
	56	22	26	25	30	33	64	256

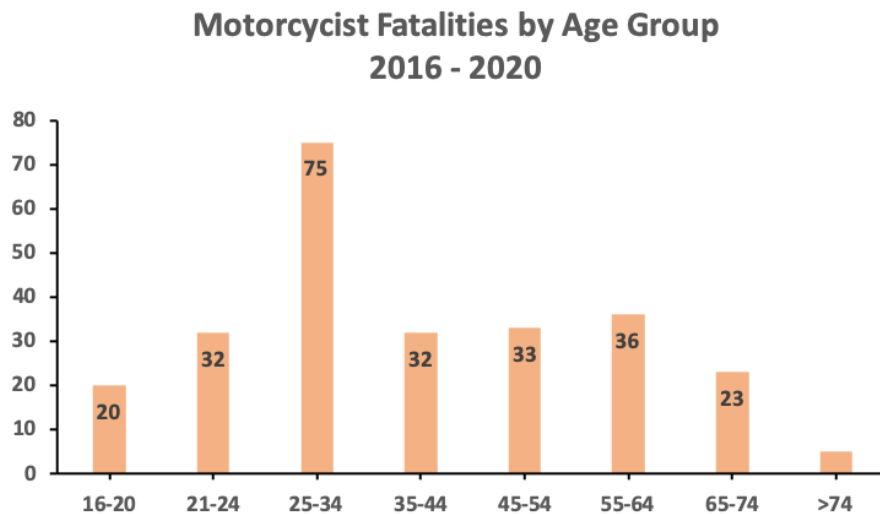
Any motorcyclist-oriented activity or messaging should be conducted over the Friday - Sunday period, focusing on the hours from 12 pm to 9 pm.

Who are the motorcyclist fatalities?

Motorcyclist fatalities are overwhelmingly male, with 237 of the 256 deaths and usually the motorcycle driver. Of the 246 driver fatalities reported, 237 were male, nine female, and one with gender not reported. While nine female passenger fatalities were reported, there were no male passenger deaths from 2016 to 2020.



By age, 30% of motorcyclist fatalities were between 25 and 34. Half of the 256 motorcyclist fatalities were under 35 years of age.



The last element of motorcyclist fatalities to cover is the use of a helmet in fatal crashes. From 2016 to 2020, there were 227 fatalities where the status of whether a helmet was worn or not was established. Unhelmeted fatalities were 9% of the 227 deaths, with males accounting for all but one.

Motorcyclist Fatalities by Known Helmet Usage (2016 - 2020)				
	Helmeted		No Helmet	
	Male	Female	Male	Female
Driver	192	7	19	0
Passenger	0	8	0	1
	192	15	19	1

Whether helmeted or not, the survival rate of a motorcyclist is low in a crash. From 2016 to 2020, 258 motorcyclists (drivers and passengers) were involved in a fatal crash in which the helmet status was known. This means 88% of the motorcyclists involved in a deadly crash did not survive impact, whether with another car or stationary object.

Some final data points on motorcyclist fatalities:

- Speed was a factor in 33% of motorcyclist fatalities from 2016 to 2020
- From 2015 - 2019, there were 83 motorcyclist driver fatalities in which the driver had a BAC of .08 or higher out of 247 driver fatalities reported. (*Note: 2016 to 2020 was not possible because of lack of alcohol data on both FARS and IMPACT*)
- Of the 83 alcohol-impaired driver fatalities, 59 died in single-vehicle crashes
- Of the 83 alcohol-impaired driver fatalities, 36 deaths involved speeding

For FFY 2022, OGR plans to focus on funding and enforcement activity based upon key takeaways regarding motorcycle fatal crashes and fatalities.

- For motorcycle safety outreach and messaging, the under 35 male crowd is the target demographic.
- Any messaging or enforcement activity related to motorcyclist safety should occur between April - October, which accounted for 89% of all motorcyclist fatalities.
- For messaging, raising driver awareness about motorcycles sharing the roadway with them, Bristol, Middlesex, Hampden, and Plymouth - the top counties with motorcycle crashes involving another motor vehicle - would be the primary focus.
- Any motorcycle enforcement activity should occur Saturday and Sunday, focusing on 12 pm to 6 pm.

Performance Measures for Motorcyclists

Number of Motorcyclist Fatalities

FFY 2022 Target: 4% decline in the five-year average from 51 in 2020 to 49 by December 31, 2022

Unhelmeted Motorcyclist Fatalities

FFY 2022 Target: 25% decline in the five-year average from 4 in 2018 to 3 by December 31, 2022

Planned Activities for FFY 2022

Motorcycle Media

ID: MC-22-01

Primary Countermeasure Strategy: Communication Campaign

Description of Planned Activity:

Develop and implement a media campaign in conjunction with the RMV's Motorcycle Rider Education Program (MREP) to educate motorcyclists about the importance of rider safety and the dangers of speeding and impaired riding. The campaign will target, at minimum, male riders between ages 25-34 and will be implemented throughout April-October when 89% of all motorcyclist fatalities occurred from 2016-2020. OGR will contract with a marketing and advertising agency to execute this media campaign while running social media in-house for sustained educational outreach.

Internal policies will be followed, noting that all media and communications activities should support data-driven objectives and in coordination with other activities and programs, particularly enforcement. Crash and citation data will be used not only for planning enforcement activities but also for determining the target audiences and media channels used to reach those audiences. NHTSA's guidelines will be followed for messaging, demographics, best practices, and target groups for each media campaign.

Countermeasure Strategy Justification: Communication Campaign

In 2020, motorcycle fatalities accounted for 17% of all motor vehicle-related deaths in Massachusetts, up from 14% in 2019. OGR will work with its media vendor and RMV to develop and promote an awareness campaign about motorcycle safety. The media for the campaign – online, radio, television, and/or outdoor billboards and electronic signs, will take place during the warmer months (April to September) to take advantage of the peak riding season in Massachusetts. It is this period of the year when nearly 90% of motorcyclist fatalities occur.

Not only will the media campaign be in full force during warmer months when motorcyclists are more likely to be on the roads, but any associated media also buy(s) will target the counties of Bristol, Hampden, Middlesex, and Plymouth. These counties represent 51% of the motorcycle crashes involving another motor vehicle from 2016 to 2020. Media targeting motor vehicle driver awareness of motorcycles on the roadway should be heavily invested in Bristol, which accounted for 15% of all motorcycle fatalities involving another motor vehicle.

Emphasis on younger motorcyclists (under 35 years of age) and speeding will also be incorporated into the media messaging. Those under 35 accounted for 50% (127 of 256) of motorcyclist fatalities from 2016-2020. More concerning is the fact that speeding was a factor in a third of those deaths.

OGR hopes to meet its stated FFY 2022 HSP motorcycle performance targets by targeting these counties and demographics by December 31, 2022.

MC-22-01 Motorcycle Media Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Motorcycle Safety (Paid Advertising)	\$100,000	\$0

Motorcycle Safety Program Enhancements

ID: MC-22-02

Primary Countermeasure Strategy: Communication Campaign

Description of Planned Activity:

Develop and implement a media campaign in conjunction with the RMV's Motorcycle Rider Education Program (MREP) to enhance driver awareness of motorcyclists and educate motor vehicle operators about the need to share the road. This campaign will run from April-October when 89% of all motorcyclist fatalities occurred from 2016 to 2020. State and local crash and fatality data will be examined to determine the target audience. OGR will contract with a marketing and advertising agency to execute these impaired driving media campaigns while running social media in-house for sustained educational outreach.

Internal policies will be followed, noting that all media and communications activities should support data-driven objectives and coordination with other activities and programs, particularly enforcement. Crash and citation data will be used not only for planning enforcement activities but also for determining the target audiences and media channels used to reach those audiences. NHTSA's guidelines will be followed for messaging, demographics, best practices, and target groups for each media campaign. We are planning to do media around impaired motorcycle operators using 402 funding only. 405f-funded media will be limited to "share the road messaging."

Countermeasure Strategy Justification: Communication Campaign

In FFY 2022, OGR will work with the RMV to help spread the importance of motorcycle safety while driving a motorcycle. For messaging, raising driver awareness about motorcycles sharing the roadway with them, Bristol, Middlesex, Hampden, and Plymouth - the top counties with motorcycle crashes involving another motor vehicle - would be the primary focus.

In the last five years (2016-2020), half of all motorcyclist fatalities have been among motorcycle riders under 35. OGR will work with RMV to target this age demographic to decrease fatalities among this age group.

This will lead to lower incidences of crashes involving motorcycles and help OGR meet the motorcycle performance measures completed by December 31, 2022.

MC-22-02 Motorcycle Safety Program Enhancements Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405f Motorcycle Safety	Motorcycle Safety	\$210,275	\$0

Program Management – Motorcycle Safety

ID: MC-22-03

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Provide sufficient staff to manage programming described in this plan and cover travel, professional development expenses, conference fees, and postage and office supplies. All funding intended for supporting staff and will not be sub-awarded.

Countermeasure Strategy Justification: Program Management

The day-to-day operation of OGR requires funding to allow staff to oversee the motorcycle safety program properly. Lack of oversight due to reduced or no funding could lead to increased motorcycle-related fatalities and injuries on the roadways of Massachusetts.

MC-22-03 Program Management – Motorcycle Safety Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Motorcycle Safety	\$51,000	\$0

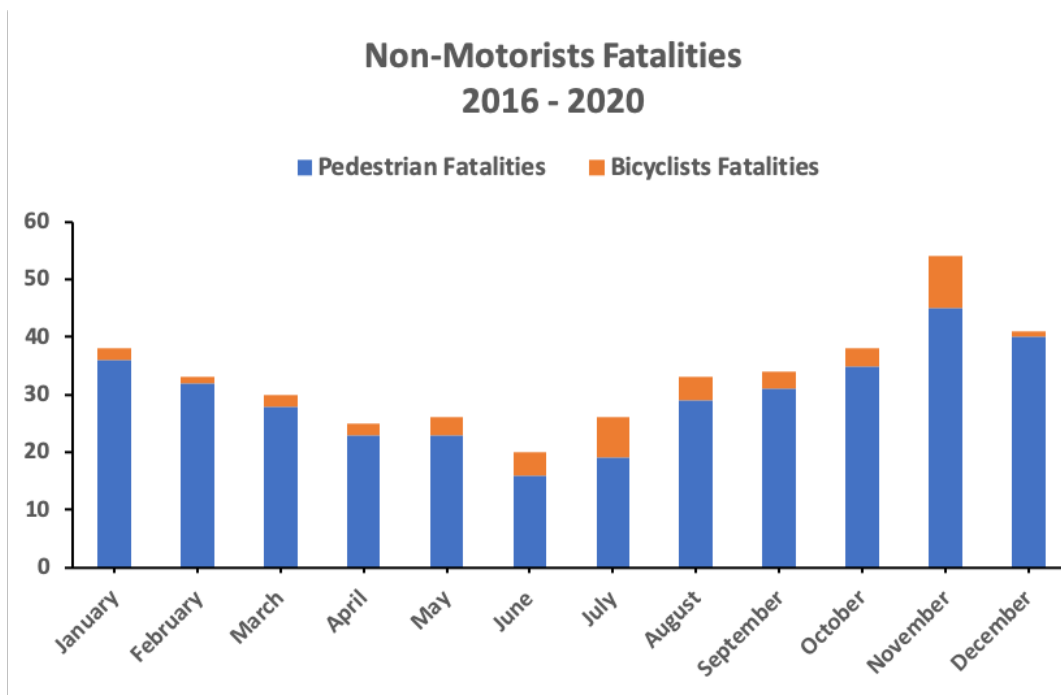
Program Area: Non-Motorists (Pedestrians and Bicyclists)

In the United States, non-motorist fatalities accounted for 19% of all traffic fatalities from 2015 to 2019. Of the 183,694 traffic fatalities during this time, there were 30,228 (16.5%) pedestrian fatalities and 4,188 (2.3%) bicyclist fatalities. At the same time, Massachusetts had 426 non-motorist fatalities out of 1,769 traffic deaths - representing 24% of all fatalities. Pedestrian deaths were 383 (21.7%), and bicyclist deaths were 43 (2.4%) from 2015 to 2019.

For 2020, Massachusetts reported 53 pedestrian fatalities and ten bicyclist fatalities for a total of 63 non-motorist deaths on the roadways, accounting for 18.3% of all traffic fatalities. This is a welcome decline from the 24% reported in the previous five-year period. Despite the decrease, the long-term impact of the COVID-19 pandemic remains to be seen as traffic volumes likely return to pre-virus levels in the next couple of years.

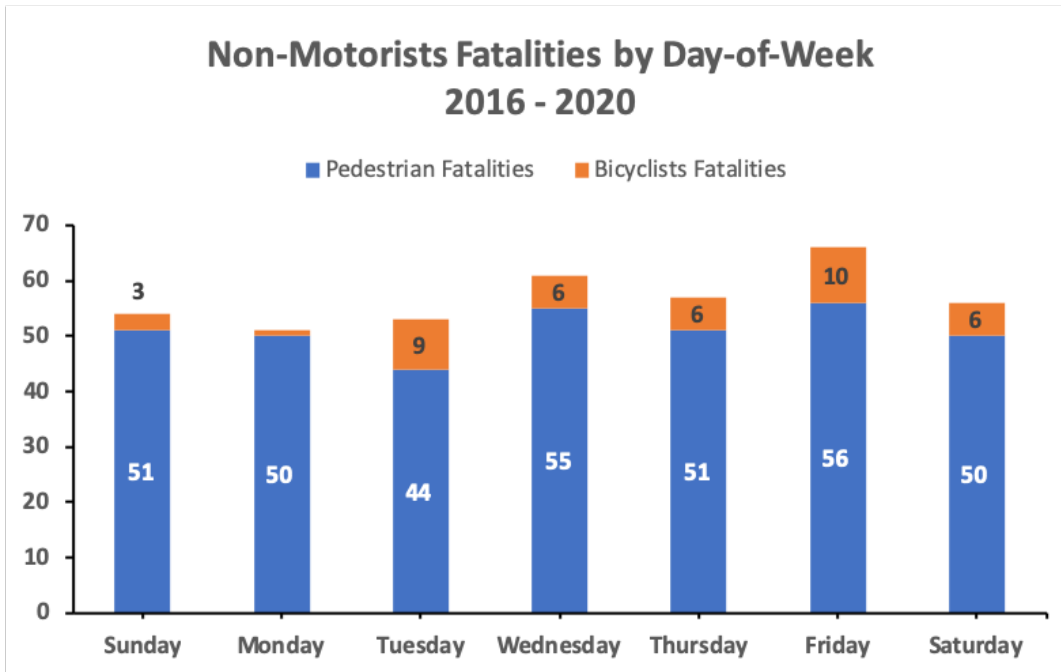
When are non-motorist fatalities occurring?

From 2016 to 2020, there were 357 pedestrian fatalities and 41 bicyclist fatalities in Massachusetts. During these five years, pedestrians accounted for 90% of all non-motorist fatalities. In general, pedestrian fatalities occur more often during colder months, and bicyclist fatalities happen more frequently during warmer months.

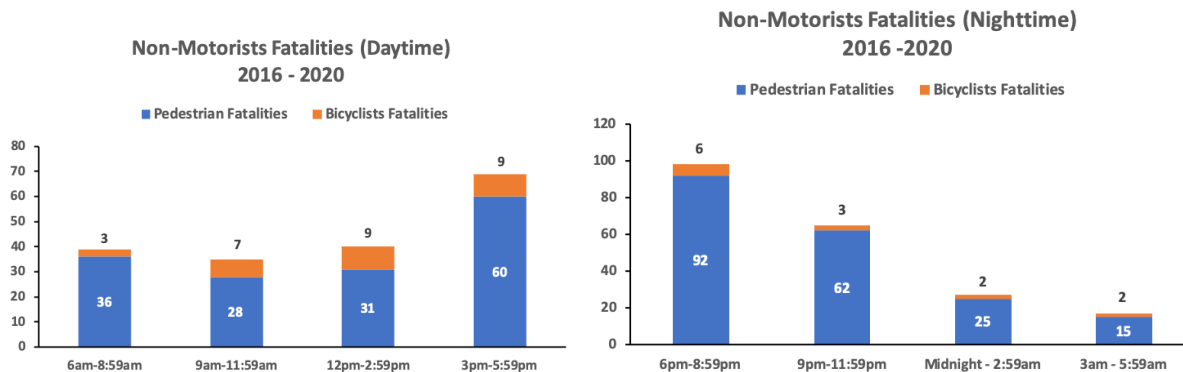


For both non-motorist person types, November was the most dangerous month, with 14% of all non-motorist fatalities reported. Overall, the months from October to January proved to have the most fatalities, with 43% of all non-motorist fatalities.

By day-of-week, non-motorist fatalities were reasonably consistent across the week, with Friday having a slightly higher percentage (17%) of all fatalities than other days of the week. The highest totals for both pedestrian and bicyclist fatalities for 2016 to 2020 were on Friday.



By time, nearly 60% of all non-motorist fatalities took place between 3 pm and 11:59 pm. Of these 232 fatalities, pedestrians accounted for 92%.



In comparing daytime to nighttime, bicyclist fatalities were more frequent between 9 am and 9 pm. Overall, any combined pedestrian/bicyclist enforcement by law enforcement should focus on activities between noon and midnight as those are the critical hours in which fatalities occur.

Where are non-motorist fatalities taking place?

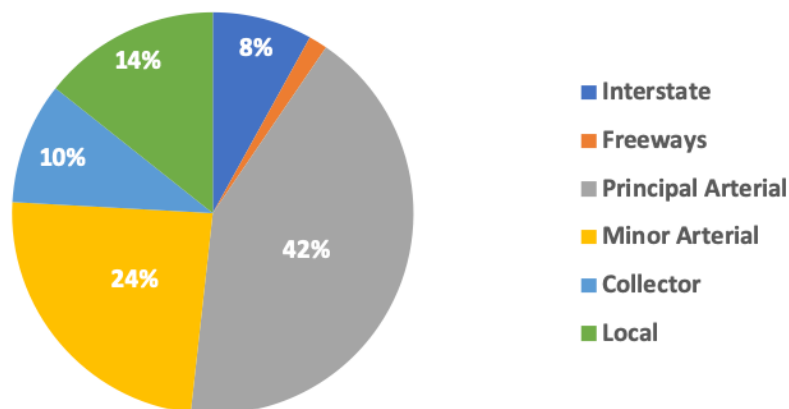
In terms of total non-motorist fatalities, Middlesex led all counties in Massachusetts with 74 deaths from 2016 to 2020, representing 19% of all non-motorist fatalities. As a percentage of all traffic fatalities, Suffolk led all counties, with half of all its traffic fatalities accounted for by non-motorists.

County	Pedestrian Fatalities	Bicyclist Fatalities	Total Non-Motorists Fatalities	Total Traffic Fatalities	Percent Non-Motorists of All Fatalities
Suffolk	56	5	61	122	50%
Middlesex	66	8	74	231	32%
Hampshire	11	1	12	41	29%
Norfolk	46	2	48	176	27%
Essex	27	7	34	172	20%
Bristol	36	4	40	222	18%
Hampden	29	4	33	193	17%
Worcester	39	2	41	249	16%
Barnstable	10	1	11	68	16%
Berkshire	10	1	11	69	16%
Plymouth	23	4	27	177	15%
Franklin	3	1	4	31	13%

With the highest population density per square mile (13,674) of all the counties in Massachusetts (based upon 2019 estimates), it is not surprising Suffolk had the highest percentage of fatalities attributed to non-motorists. Middlesex, Norfolk, and Essex, all in the top five in non-motorist fatalities, are 2nd, 3rd, and 4th in population density, respectively. Despite having a population density of 305 people per square mile, Hampshire has five colleges in the area - the University of Massachusetts - Amherst, Hampshire, Amherst, Mt. Holyoke, and Smith.

By roadway type, two-thirds of all non-motorist fatalities took place along principal and minor arterials. Local roads accounted for 14% of deaths.

**Non-Motorists Fatalities by Roadway Type
2016 -2020**



A breakdown of non-motorist locations at the time of death along principal arterials, minor arterials, and local roads is examined. These three roadway types accounted for 81% of all non-motorist fatalities.

Non-Motorist Fatalities (2016 -2020)			
Non-Motorist Location	Principal Arterial	Minor Arterial	Local
In roadway	77	45	18
Marked crosswalk at intersection	31	23	5
At intersection but no crosswalk	7	4	2
Sidewalk	5	5	2
Shoulder	4	5	0
Non-intersection crosswalk	5	2	0
Not in roadway	2	1	1

Of the 168 non-motorist fatalities along principal arterials, 46% took place in the roadway. For minor arterials, it was slightly higher, with 45 of 96 deaths (47%). Local roads had the lowest rate, with 18 of 57 fatalities (32%) occurring in the roadway, likely the result of slower speeds than principal and minor arterials.

18% of all non-motorist fatalities along principal arterials, minor arterials, and local roads took place at a marked crosswalk at an intersection. From 2016 to 2020, there were 66 non-motorist fatalities where the non-motorists were in a marked crosswalk at an intersection. Of these 66 fatalities, the driver contributing circumstance was provided in the report for 35 of those fatalities.

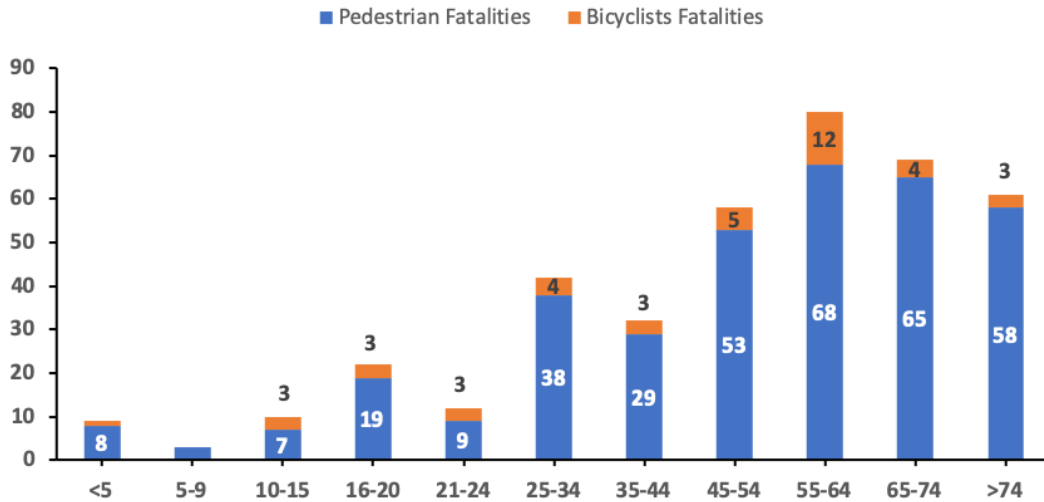
Driver Contributing Circumstances	
Inattention	12
Failure to yield right of way	7
No improper driving	4
Disregarded traffic signs, signals	3
Glare	2
Operating vehicle erratically	2
Other improper action	2
Exceeded speed limit	1
Physical impairment	1
Visibility obstructed	1

Driver inattention, a failure to pay attention, accounted for a third of all driver contributing circumstances. The reasons for that inattention are not recorded, but electronic distractions are assumed to be the primary issue. OGR plans to utilize social media and other media outlets to push the message of how important it is for drivers to focus on the road ahead at all times in FFY 2022. Also, OGR intends to work with Mass DOT to analyze fatalities and serious injuries in crosswalks to determine if engineering issues (poor lighting, faded crosswalk paint, lack of roadway reflectors, or broken crosswalk signals) were contributing factors.

Who were the non-motorist fatalities?

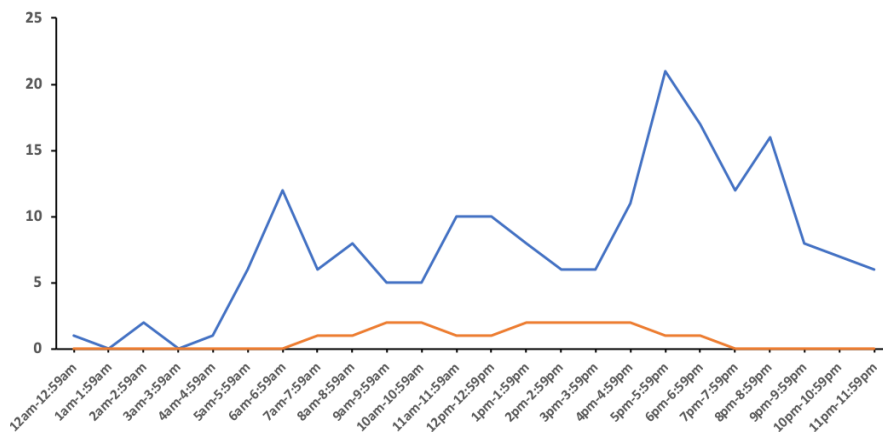
From 2016 to 2020, there were 395 non-motorist fatalities (of 398) that provided gender. Males accounted for two-thirds of all fatalities. By age group, non-motorist fatalities were skewed more towards older persons, with 52% of deaths attributed to a person age 55 or older.

**Non-Motorists Fatalities by Age Group
2016 - 2020**



Not only are pedestrian fatalities more frequent among older non-motorists, but bicyclist fatalities are as well. Nearly 50% of bicyclist fatalities were age 55 or older. Seeing the prevalence of older non-motorist fatalities, a look at the times when older non-motorist fatalities occur will help OGR and subrecipients better plan pedestrian and bicycle safety outreach activities in FFY 2022.

**55+ Non-Motorists Fatalities by Time-of-Day
2016 - 2020**



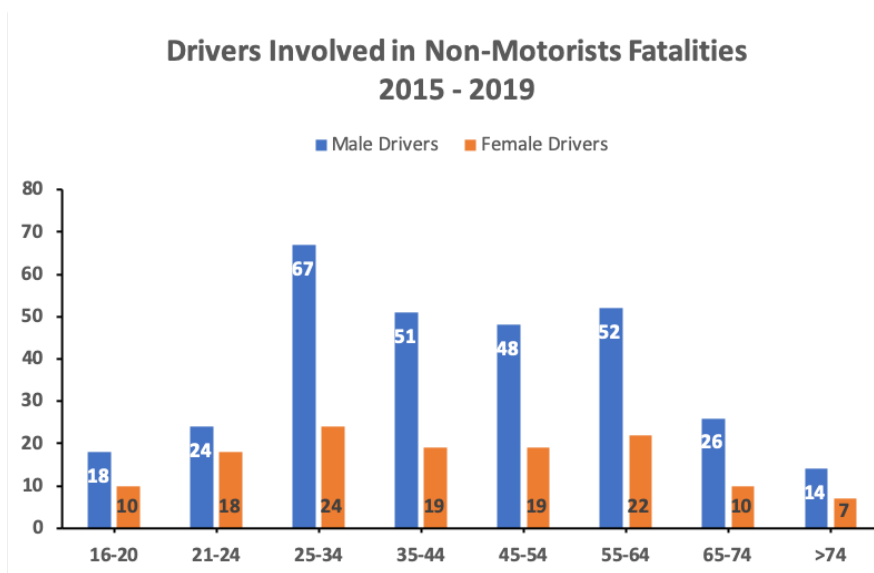
The chart above shows pedestrian fatalities for 55+ non-motorists spiking between 3 pm and 9 pm, while bicyclist fatalities occurred from 7 am to 6 pm. Interestingly, there was a drop in pedestrian fatalities between 2 pm and 3:59 pm after rising from 11 am to 1 pm. One possible reason is this age range is most

likely to have grandchildren, and that time frame coincides with when school ends, and they may be responsible for getting their grandchild off the bus or at school.

Who are the Drivers involved in Pedestrian Fatalities?

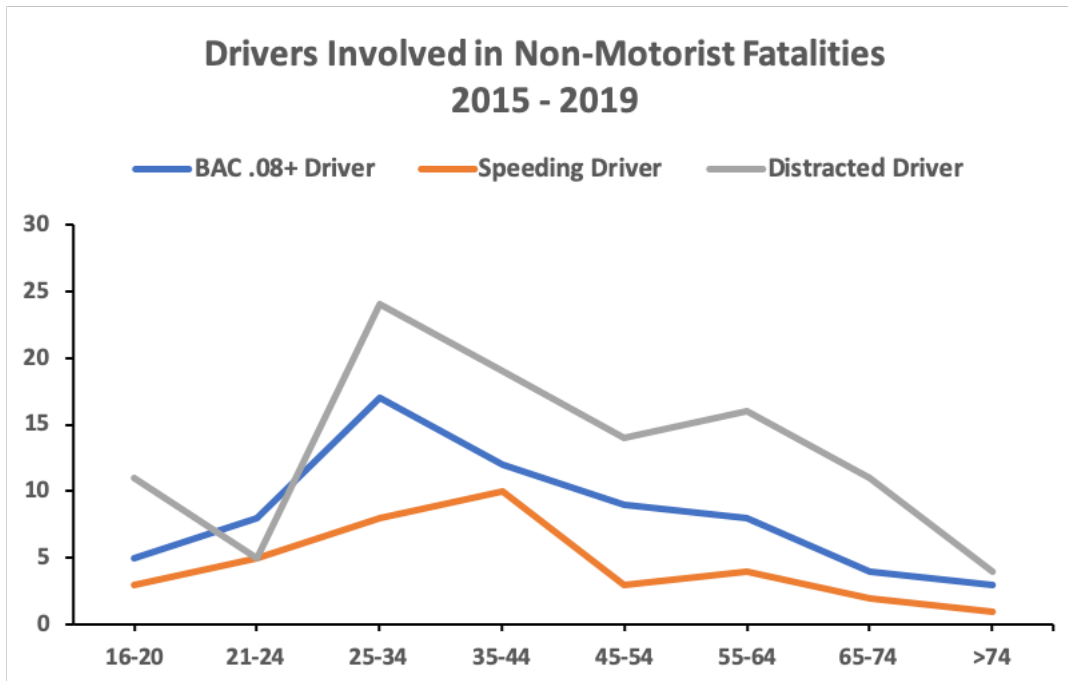
(Note: In this section, data from 2015 to 2019 was used to utilize BAC values currently available on FARS.)

From 2015 to 2019, there were 429 drivers involved in a fatal crash in which there was a non-motorist fatality. Males accounted for 70% of all drivers involved. The 25-34 age range had the highest number of drivers for both males and females, with 21% of all drivers.

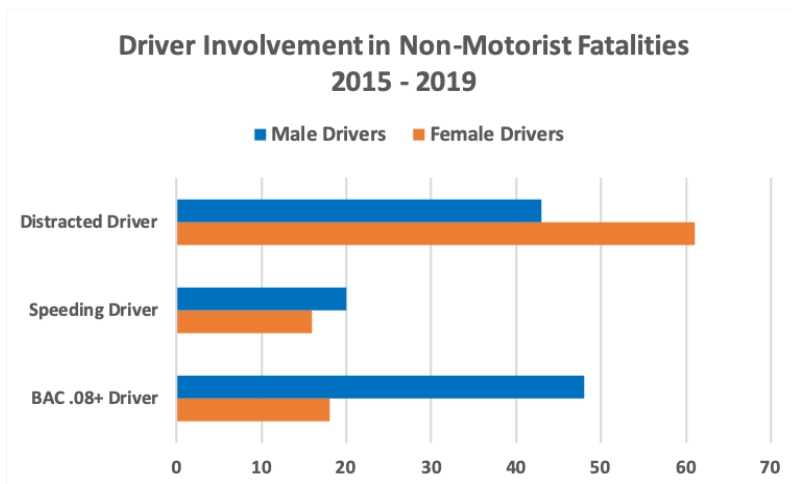


The 55-64 age group was the next group of drivers most involved in non-motorist fatalities, with 17% of all drivers.

Driver factors such as alcohol impairment, speeding, and distraction were elements that were involved in non-motorist fatality were examined. Alcohol impairment (BAC of 0.08 or higher) was found in 15% of drivers involved; speeding, 8% of drivers involved; and distracted drivers, 24% of drivers involved.



Distractions and impaired drivers were most frequent for the 25-34 age group. Even though the 16-20 age group had a much lower number of distracted drivers than the 25-34 age group, distracted drivers accounted for nearly 40% of all 16-20-year-old drivers involved in a non-motorist fatality. Males were more likely to drive impaired, while females were more often distracted in the non-motorist fatality.



For FFY 2022, OGR will incorporate the following key takeaways from the non-motorist fatality data presented in this section:

- With 50% of its fatalities from 2016-2020 attributed to non-motorists, Suffolk County should be a priority for both messaging and enforcement activities.
- Any media messaging might take two approaches:
 - Appealing to drivers to be aware of non-motorists sharing the road, especially when approaching a crosswalk

- Appealing to older non-motorists (55+) to be vigilant when using the roadways, especially when using a crosswalk.
- Incorporate distracted driving (inattention) into the messaging aimed at drivers between the ages of 25-34.

In support of National Pedestrian Safety Month (October 2021), OGR will raise awareness for pedestrian safety through social media and also ask statewide partners (local and State police, non-profit traffic safety organizations) to share key tips for pedestrian safety via their respective social media channels.

Performance Measures for Pedestrian and Bicyclist Safety

Number of Pedestrian Fatalities

FFY 2022 Target: 4% decline in the five-year average from 71 in 2020 to 68 by December 31, 2022

Number of Bicyclist Fatalities

FFY 2022 Target: 10% decline in the five-year average from 8 in 2020 to 7 by December 31, 2022

Planned Activities for FFY 2022

Pedestrian and Bicyclist Safety Media

ID: PS-22-01

Primary Countermeasure Strategy: Communication Campaign

Description of Planned Activity:

Develop and implement a pedestrian and bicyclist safety media campaign in conjunction with the Massachusetts Department of Transportation's Traffic Safety Division. The campaign will encourage all road users to share the road safely, educate the public on related traffic laws and safe practices, and promote the enforcement efforts of local police departments. The campaign will take place throughout the year and may focus on older adults aged 45+. Paid media will focus on major cities with the highest pedestrian fatalities, including Boston, Worcester, Springfield, Quincy, and Brockton.

OGR will contract with a marketing and advertising agency to execute this campaign. OGR will lead social media and press outreach efforts to garner earned media; both will be done in conjunction with paid media and the MRS enforcement periods.

Internal policies will be followed, noting that all media and communications activities should support data-driven objectives and in coordination with other activities and programs, particularly enforcement. Crash and citation data will be used not only for planning enforcement activities but also for determining the target audiences and media channels used to reach those audiences. NHTSA's guidelines will be followed for messaging, demographics, best practices, and target groups for each media campaign.

Countermeasure Strategy Justification: Communication Campaign

Whether by radio, television, outdoor displays, or social media, public outreach is necessary to spread the message of paying attention to the road ahead while behind the wheel. OGR sees media campaigns for pedestrian and bicyclist safety as having a two-fold impact. First, support messaging during Pedestrian Safety month (August) and Bicycle Safety month (May). And second, to continue reminding Massachusetts drivers of the importance of being aware of their surroundings as pedestrians and bicyclists can appear suddenly without warning.

OGR is expanding pedestrian and bicyclist safety efforts by incorporating laws protecting these vulnerable road users into the MRS Program. Media is needed to augment enforcement during the MRS periods and promote pedestrian safety among adults aged 45+ in big cities across the Commonwealth.

Through various mediums (social media, television, print, billboards, and radio), media outreach will reach a broad audience across all demographics with the limited funds available to OGR.

In 2020, non-motorist fatalities dropped from 82 in 2019 to 63. To build on this decline in non-motorist fatalities, OGR plans to launch a paid and earned media campaign during FFY 2022 to raise awareness among drivers, pedestrians, and bicyclists of the need to share the roadways responsibly. Pedestrian and bicyclist safety media campaigns will help lower the number of pedestrian and bicyclist fatalities in Massachusetts.

The campaign will use online and offline (radio, television, electronic signs) media to spread the message and conduct local police overtime enforcement activity concurrently. OGR will suggest focusing any overtime enforcement patrols on the hours between 12 pm and 11:59 pm, when nearly 70% of non-motorist fatalities occur.

PS-22-01 Pedestrian and Bicycle Safety Media Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Non-Motorist Safety (Paid Advertising)	\$370,000	\$0

Program Management – Pedestrian and Bicyclist Safety

ID: PS-22-02

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Provide sufficient staff to manage programming described in this plan and cover travel, professional development expenses, conference fees, and postage and office supplies. All funding intended for supporting staff and will not be sub awarded.

Countermeasure Strategy Justification: Program Management

The day-to-day operation of OGR requires funding to allow staff to oversee the pedestrian and bicyclist safety program properly. Lack of oversight due to reduced or no funding could lead to increased pedestrian and bicyclist fatalities and injuries on the roadways of Massachusetts.

PS-22-02 Program Management – Pedestrian and Bicyclists Safety Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Non-Motorist Safety	\$65,000	\$0

Program Area: Distracted Driving

Distracted motor vehicle operation occurs when a driver fails to pay full attention to the task of driving or operating a motorcycle and instead diverts his/her attention from the roadway. The use of hand-held and built-in electronic devices such as phones, tablets, infotainment systems, laptop computers, and GPS continues to be a significant risk to the safety and health of all road users. Compounding this problem is the continued exponential growth and use of Smartphone apps.

The attributes NHTSA includes as part of ‘driver distraction’ in crash reporting:

- By another occupant
- By a moving object in the vehicle
- While talking or listening, or manipulating a cell phone
- Adjusting audio or climate controls or other controls central to vehicle
- While using or reaching for a device or object
- Distracted by an outside person, object, or event
- Eating or drinking
- Smoking-related
- Inattention/Carelessness
- Lost in thought/daydreaming

Despite the vast array of driver distraction options to report, underreporting is an ongoing issue. Unless a driver, passenger, or witness to the crash confirms the distracted behavior, law enforcement must access cell phone records to verify usage at the point of impact or before a collision occurred, and that does not always happen. The actual number of distracted drivers involved in fatal motor vehicle crashes will likely never be known.

From 2015 to 2019, there were 14,982 fatal crashes involving a distracted driver out of 169,009 total fatal crashes across all fifty states in the Union. The percentage of distracted driver fatal crashes was 9%. With 204 fatal crashes of 1,675 during the same time frame, the percentage of fatal crashes involving a distracted driver in Massachusetts was 12%.

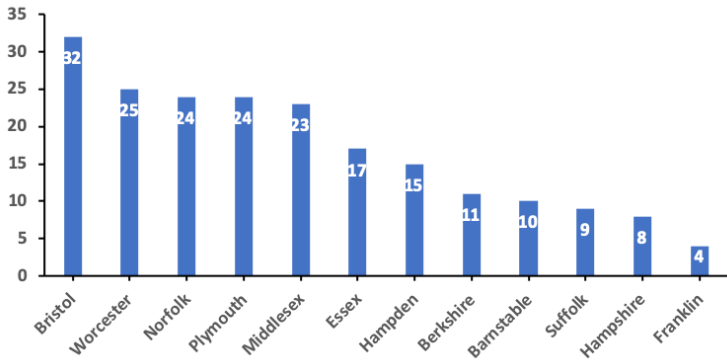
Massachusetts ranked 27th out of 50 states for fatal crashes involving a distracted driver. Texas led all states with 1,766 fatal crashes, and Rhode Island was last with eight fatal crashes. In terms of the percentage of total motor vehicle crashes, Massachusetts was 11th in the nation. New Mexico was tops with 38% of its fatal crashes involving a distracted driver. Mississippi was last with 1% of all deadly crashes.

Where are the fatal distracted driving crashes in Massachusetts?

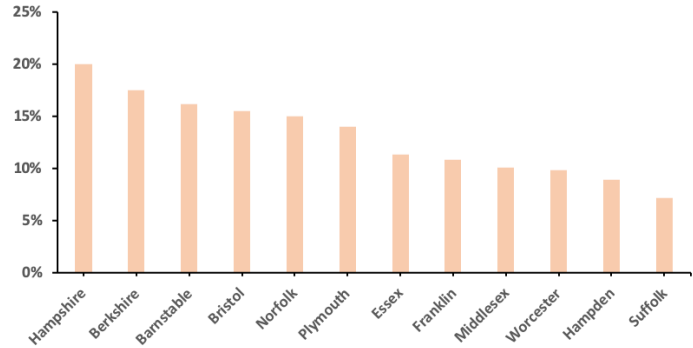
From 2015 to 2019, 63% of distracted driving fatal crashes occurred across five counties - Bristol, Worcester, Norfolk, Plymouth, and Middlesex. Of the 217 fatalities in a distracted driving involved crash, 137 took place in these top five counties.

As a percentage of all fatal crashes within the county, Hampshire led all counties with 20% of fatal crashes involving a distracted driver. Suffolk had the lowest rate, with 7% of all fatal crashes involving a distracted driver.

**Distracted Driving Fatal Crashes
2015 - 2019**



**Percent Distracted Driving Fatal Crashes
of All Fatal Crashes in County
2015 - 2019**



By roadway type, over half of fatal crashes involving a distracted driver took place along either principal arterial or minor arterial roads. Nearly half of local road fatal crashes took place in two counties - Bristol and Plymouth - adjacent to one another.

County	Interstate	Freeway	Principal Arterial	Minor Arterial	Collector	Local	Unknown
Barnstable	0	0	3	5	0	2	0
Berkshire	1	0	4	2	2	2	0
Bristol	4	3	5	8	4	7	1
Essex	6	0	4	4	2	1	0
Franklin	0	0	0	2	0	2	0
Hampden	6	0	2	5	1	1	0
Hampshire	0	0	7	0	1	0	0
Middlesex	8	2	4	5	3	1	0
Norfolk	3	0	7	7	4	3	0
Plymouth	2	2	5	8	3	4	0
Suffolk	0	1	6	2	0	0	0
Worcester	6	1	10	7	1	0	0
Total	36	9	57	55	21	23	1

All but one of Hampshire’s fatal crashes were along principal arterial roads. Three were along Route 9, the main road that runs east to west through the county. Worcester’s distracted driving fatal crashes are confined mainly to interstate and arterials.

The top communities for fatal distracted driving crashes from 2015 - 2019, accounting for 20%, are listed below.

- Dartmouth (Bristol County) - 7
- Boston (Suffolk) - 6
- Brockton (Plymouth) - 6
- Quincy (Norfolk) - 6
- Springfield (Hampden) - 5
- Taunton (Bristol) - 5
- Methuen (Essex) - 5

What type of crashes are occurring along the roadways?

Of the 204 distracted driving fatal crashes reported from 2015 to 2019, 62% did not involve a collision with another motor vehicle. Distracted drivers were most likely to collide with another motor vehicle along principal arterials than any other roadway type.

Roadway Type	Manner Of Collision					
	No Collision with MV	Rear-End	Head-On	Angle	Sideswipe	Unknown
Interstate	21	9	3	3	0	0
Freeways	7	2	0	0	0	0
Principal Arterial	30	6	7	9	4	1
Minor Arterial	34	2	9	10	1	0
Collector	17	0	2	2	0	0
Local	17	0	1	6	0	0
Unknown	1	0	0	0	0	0
Total	127	19	22	30	5	1

All rear-end collisions took place along arterials and interstates, likely a function of speeding and lack of distance to stop when behind another motor vehicle safely. Head-on and sideswipe fatal crashes were more frequent along arterials where intersections and the lack of roadway dividers exist, allowing vehicles to drift into oncoming traffic.

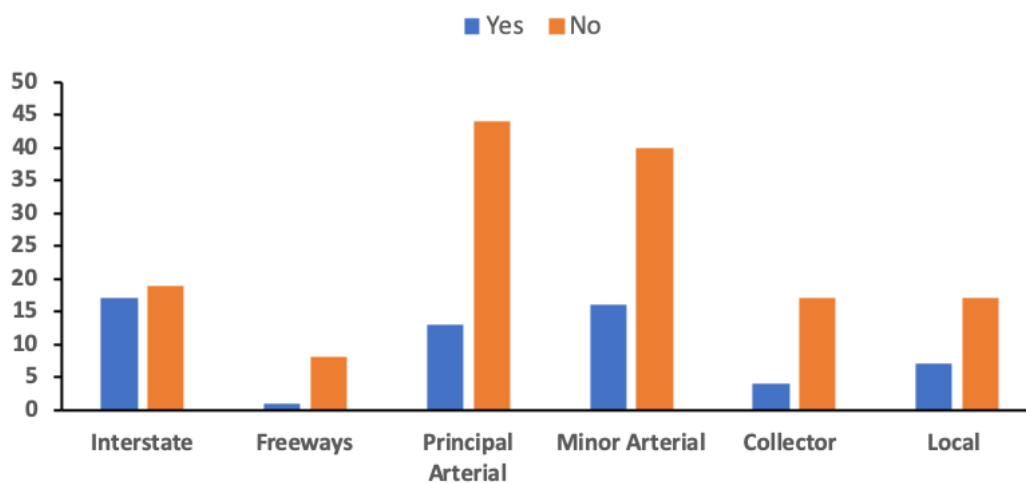
For crashes not involving another motor vehicle, pedestrians were the ‘first harmful event’ (FHE) reported in over 40% of fatal crashes. Below is a chart showing the top five FHE, which accounted for 73% of all distracted driving collisions that didn’t involve another vehicle.

First Harmful Event	Interstate	Freeways	Principal Arterial	Minor arterial	Collector	Local	Unknown	Total
Pedestrian	3	2	19	18	7	5	0	54
Tree (Standing Only)	3	1	2	0	0	6	0	12
Guardrail Face	5	0	3	0	1	0	1	10
Curb	1	0	1	5	2	1	0	10
Parked Motor Vehicle	1	1	1	3	0	1	0	7

Arterials accounted for nearly 70% of all fatal crashes with pedestrians, begging the question: “Are arterials built with non-motorists safety taken into account or simply aimed at moving more motor vehicles from Point A to Point B?” Although not provided on the chart, bicyclists were the FHE in three crashes, bringing the total for non-motorists to 57, representing 45% of all FHE in non-motor vehicle collisions involving a distracted driver.

Fatal crashes involving a distracted driver are more frequent along roadways with higher traffic volumes and higher posted speed limits than collectors or local roads. Nearly 80% of distracted driver-involved fatal crashes occurred on interstates and arterials in Massachusetts, all of which have 35 mph or higher speed limits. Given the speed limit, it follows that speeding would be a probable factor in fatal crashes.

Distracted Driving Fatal Crashes (2015 - 2019) Speeding Involved?



Overall, 29% (59 of 204) of all distracted driving fatal crashes involved speeding. Unsurprisingly, interstates had nearly half of their collisions involving speeding. For arterials, speeding was a factor in approximately one of every three fatal crashes.

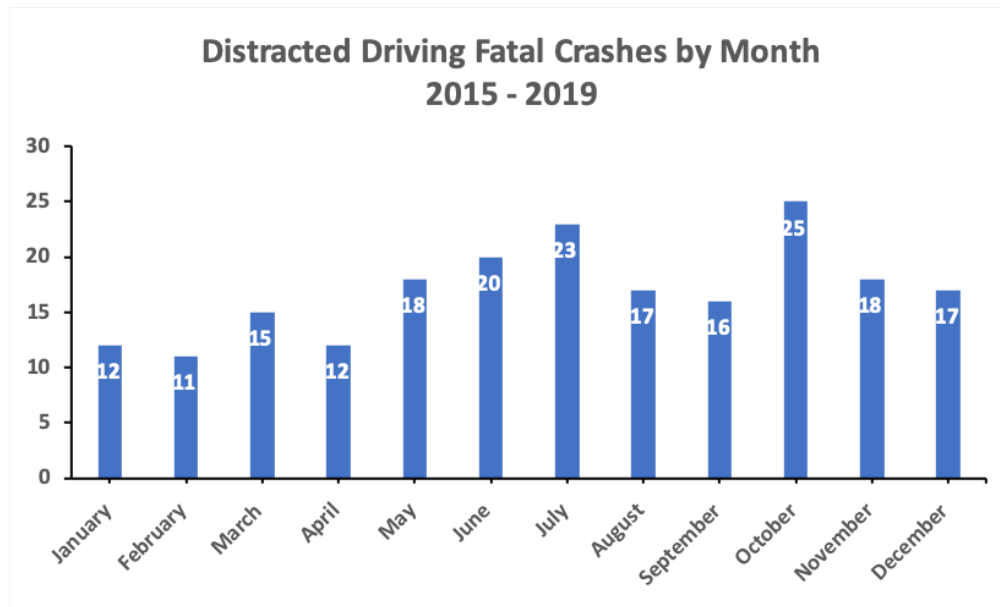
As mentioned previously, nearly two-thirds of distracted driver fatal crashes did not involve another motor vehicle. Of these non-MV collision crashes, 36 were found to have speeding as a factor. Six FHE accounted for 75% of the speed-involved non-MV collisions crashes as listed below:

First Harmful Event	Interstate	Freeway	Principal Arterial	Minor Arterial	Collector	Local	Unknown	Total
Guardrail Face	4	0	2	0	0	0	1	7
Tree (Standing Only)	2	1	1	0	0	3	0	7
Curb	1	0	0	1	2	0	0	4
Pedestrian	0	0	0	2	1	0	0	3
Parked Motor Vehicle	1	0	1	1	0	0	0	3
Embankment	0	0	2	1	0	0	0	3

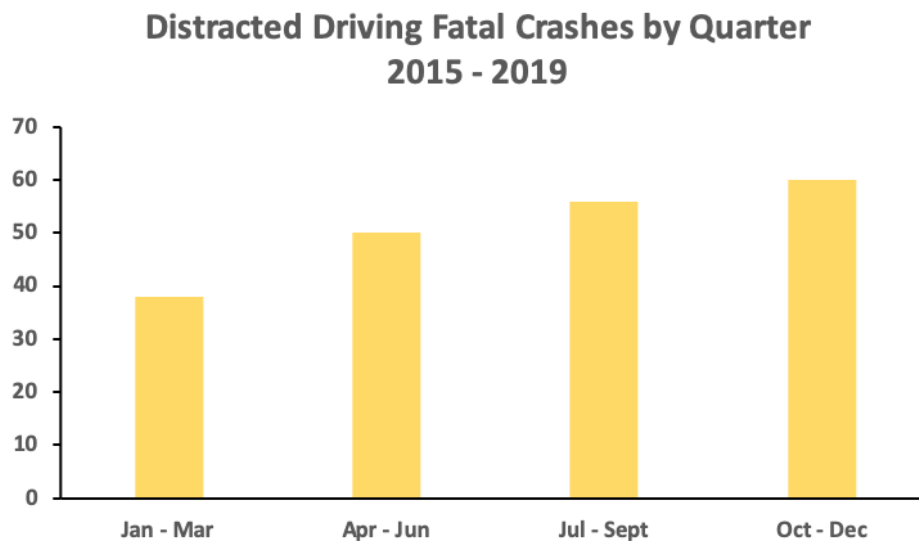
Pedestrians, which dominated FHE for non-MV collisions with well over half of all crashes, accounted for only 8% of the 36 reported speeding-involved non-MV collision fatal crashes. The takeaway is that speeding likely facilitated the vehicle's movement off the road before the driver could react to the oncoming guardrail, tree, curb, or embankment.

When do distracted driving fatal crashes occur?

From 2015 to 2019, fatal distracted driving crashes occur most often in October, July, and June. These three months accounted for a third of all fatal crashes with a distracted driver. February reported the lowest number of collisions. The three lowest crash totals took place within the first four months of the calendar year.



Interestingly, distracted driving fatal crash totals increased with each consecutive quarter. The total for Q1 (January - March) is nearly 40% less than the total for Q4 (October - December).

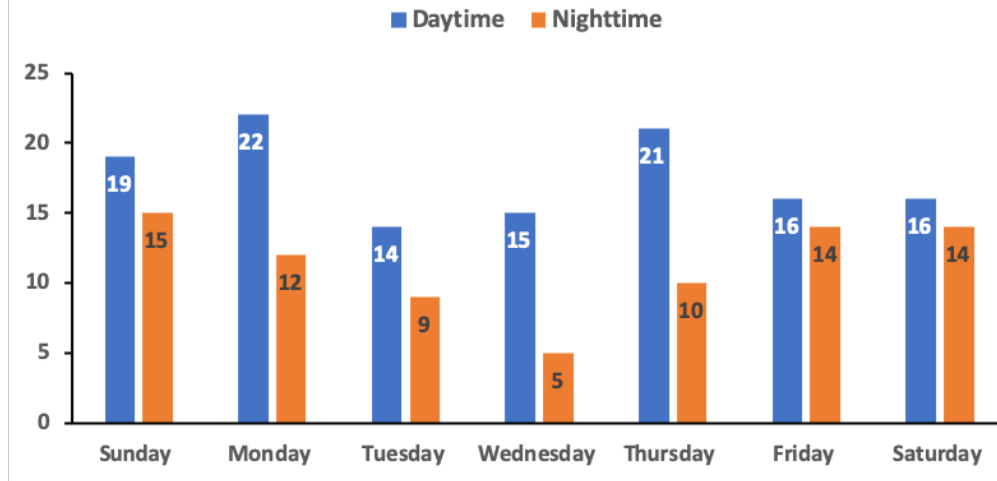


Warmer weather is certainly a factor as more non-motorists take to the roadways through spring and summer. As the season turns to fall and winter, holidays and the new school year getting underway are factors.

By day-of-week, Sunday and Monday accounted for 34% of all fatal crashes from 2015 to 2019. Unlike speeding and impaired driving, distracted driving fatal crashes occur more often during the week (Monday - Thursday) than the weekend (Friday - Sunday). Over half of the deadly crashes took place from Monday to Thursday.

When time-of-day (daytime/nighttime) is factored in, Monday to Thursday accounted for nearly 60% of all fatal daytime crashes, while Friday to Sunday represented 54% of all nighttime fatal crashes.

Distracted Driving Fatal Crashes by Time-of-Day 2015 - 2019



Digging a little deeper into time-of-day and examining three-hour periods against the roadway type, the fatal crash distracted driver found that 68% of all crashes occurred between 9 am and 9 pm. Nearly 80% of collisions during this time frame occurred on interstates and arterials.

Time-of-Day	Interstate	Freeway	Principal Arterial	Minor Arterial	Collector	Local	Unknown	Total
12am - 2:59am	4	1	4	2	2	3	0	16
3am - 5:59am	3	1	1	2	1	3	0	11
6am - 8:59am	4	2	3	3	3	4	0	19
9am - 11:59am	3	1	14	10	1	1	0	30
12pm - 2:59pm	5	2	10	9	6	5	0	37
3pm - 5:59pm	10	0	10	8	5	4	0	37
6pm - 8:59pm	1	2	9	17	2	2	1	34
9pm - 11:59pm	6	0	6	3	1	2	0	18
Unknown	0	0	0	2	0	0	0	2

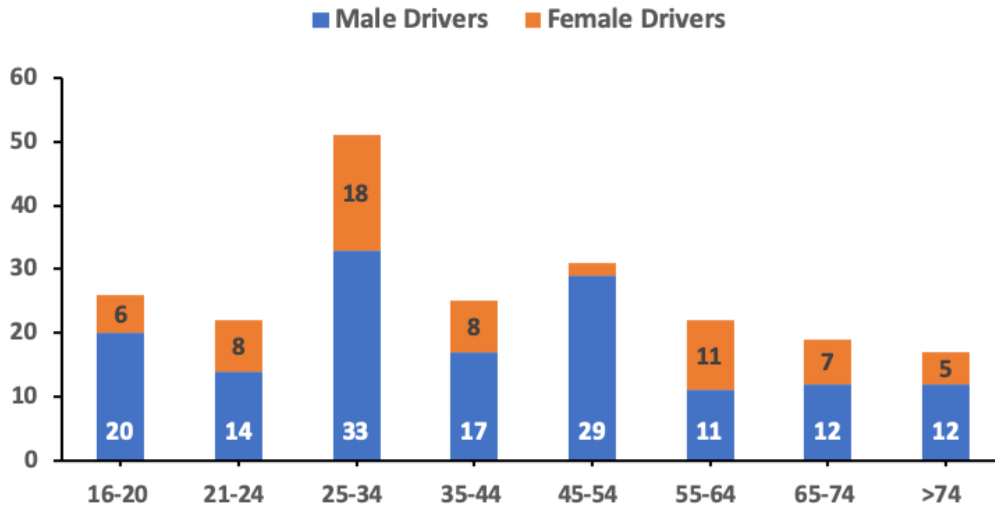
Based on the data presented regarding when distracted driving fatal crashes occur, it appears the critical period is from 9 am – 9 pm along interstate and arterials from Sunday to Thursday, especially during the second half of the calendar year (July - December).

Who are the drivers involved in the fatal crashes?

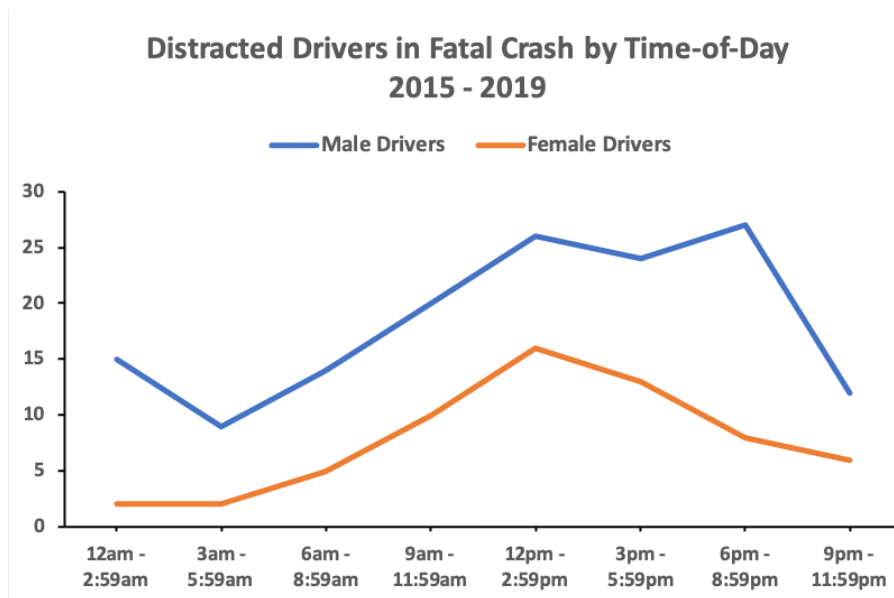
From 2015 to 2019, there were 213 distracted drivers involved in 204 fatal crashes involving a distracted driver. As the data suggests, several crashes involving multiple vehicles with more than one driver distracted at the time of impact.

Female distracted drivers represented a higher percentage of drivers than female drivers involved in fatal crashes. From 2015 to 2019, there were 2,354 drivers involved in fatal crashes in Massachusetts. Of these 2,354 drivers, 26% were female, and 73% were male. In comparison, 31% of distracted drivers in a fatal crash were female, and 69% were male.

Distracted Drivers in Fatal Crashes



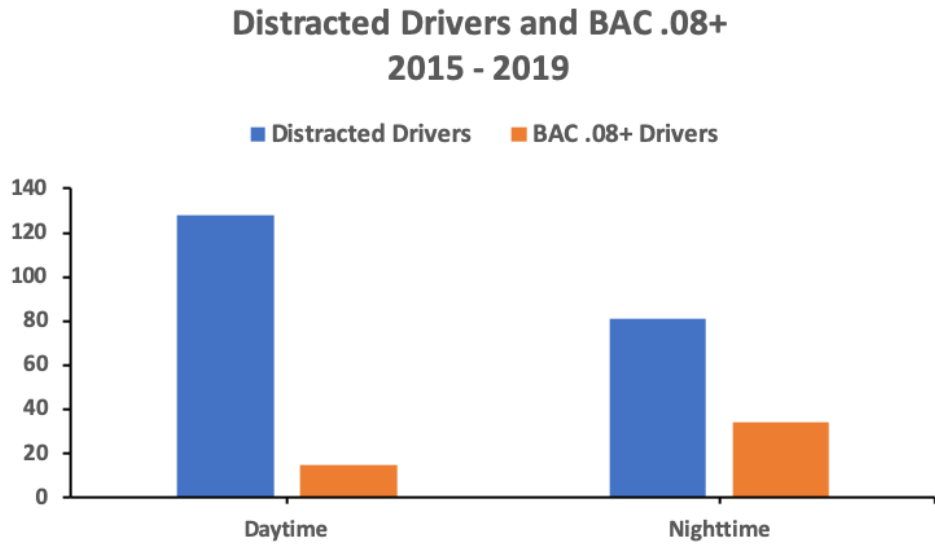
The 25-34 age group leads all age groups, with nearly a quarter of all drivers involved in a fatal crash. Male drivers were most prominent in the 16-20 and 45-54 age groups, accounting for 77% and 94% of all drivers in those age groups, respectively. While female drivers were not the majority in any age group, they were 50% of all 55-64 age group drivers.



By the time of day, both genders rose every three hours from 6 am to 3 pm, with the 12 pm to 2:59 pm time frame being the peak period for female drivers. Male drivers, however, dropped slightly between 3 pm and 6 pm and then hit their peak between 6 pm and 8:59 pm.

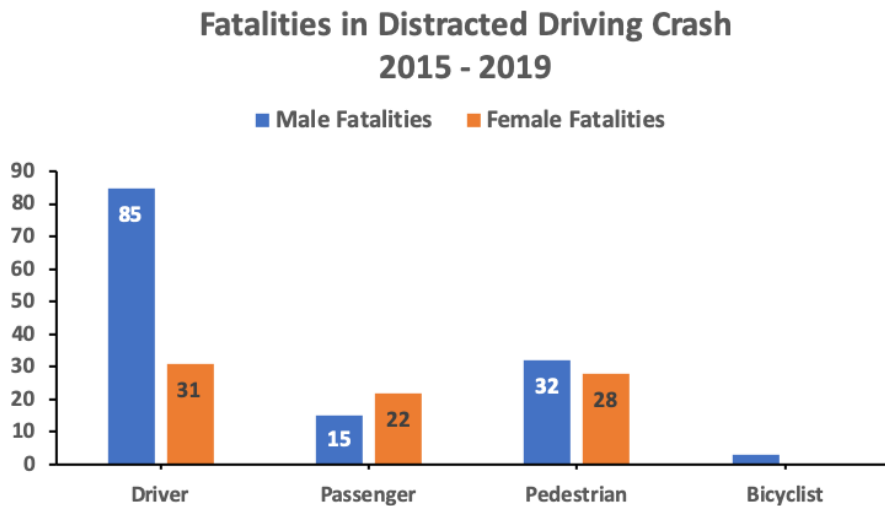
For female drivers, 60% of drivers (39 of 65) were involved in fatal crashes between 9 am and 5:59 pm. For male drivers, 52% (77 of 148) were involved in deadly crashes between 12 pm to 8:59 pm.

One last element of distracted drivers to examine is whether drinking was involved at the time of the crash. From 2015 to 2019, 50 distracted drivers were found with a BAC of .08 or higher. This accounted for 23% of all distracted drivers involved in a fatal crash. During daytime hours (6 am to 6 pm), alcohol was involved in only 12% of fatal crashes, but at nighttime (6 pm to 6 am), the percentage jumped to 42% of distracted drivers.



Who are the fatalities in distracted driving fatal crashes?

From 2015 to 2019, there were 216 fatalities reported in 204 fatal crashes involving a distracted driver. Over half were attributed to drivers and pedestrians, not passengers, who were the second-highest count for deaths. By gender, males accounted for 63% of all fatalities.



While male drivers were the majority for all driver fatalities, female passengers were higher than males. Pedestrians were relatively even between the genders.

Of the 85 male driver fatalities, 73 were the distracted driver in the crash - a rate of 86%. For female driver fatalities, 23 of the 31 deaths were reported as the distracted driver resulting in a lower rate than males, 74%. Single-vehicle crashes - no reported collision with another vehicle - were the case for 54 of the 96 (54%) distracted driver fatalities.

By age, the over 74 age group had the most fatalities, with 18.1% of all fatalities in a crash involving a distracted driver. Adding in the 65-74 age group, fatalities of those age 65 or older accounted for nearly a third of all fatalities. Furthermore, this age group accounted for 47% of all pedestrian fatalities. Of the 28 65+ pedestrian fatalities, 18 were at an intersection at the time of the crash. Physical issues that come with older populations, such as poor hearing, slower gait, and delayed reactions, may have been factors in these intersection-related fatalities.

Age Group	Fatalities by Person Type (2015 - 2019)				
	Driver	Passenger	Pedestrian	Bicyclist	Total
<5	0	1	0	0	1
5-9	0	0	1	1	2
10-15	1	1	3	0	5
16-20	12	7	5	0	24
21-24	12	5	5	0	22
25-34	21	5	5	0	31
35-44	12	2	2	0	16
45-54	18	4	5	0	27
55-64	11	3	6	0	20
65-74	14	3	10	2	29
>74	15	6	18	0	39

Determining if a driver was distracted at the time of the crash is extremely difficult for law enforcement investigators. Without eyewitnesses, a driver could easily lie about what he/she was doing before the crash to avoid any fines or penalties. A driver may honestly not recall what he/she was doing due to shock or a head injury. In general, the reported number of crashes involving distraction-affected drivers should be higher than it is.

Even though accurate reporting regarding distracted driving is complicated, the trends revealed through the data analysis section will help guide OGR’s focus of resources towards addressing these areas of concern. Critical takeaways for distraction-affected fatal crashes:

- Focusing enforcement efforts on the period between 9 am – 9 pm, Sunday to Thursday, along interstate and arterials
- The high mortality rate of pedestrian fatalities age 65 or older in distracted driving crashes is a cause for concern. Local police should prioritize enforcement patrols near or at crosswalks in the vicinity of neighborhoods with a high percentage of older residents
- With distracted driving crashes increasing with each quarter, prioritize outreach and enforcement for the second half of the year (July - Dec)
- Media messaging should target under 35 drivers through social media and over 35 drivers via traditional media (radio, television)

- OGR will seek to increase distracted driving enforcement applications from Bristol County, which had the highest total of crashes, and Hampshire and Berkshire County, which had the highest percentage of its total fatal crashes involving distracted driving.

Performance Measure for Distracted Driving

Number of Distraction-Affected Fatal Crashes

FFY 2022 Target: 6% decline in the five-year average from 31 in 2020 to 29 by December 31, 2022

Planned Activities for FFY 2022

Distracted Driving Media

ID: DD-22-01

Primary Countermeasure Strategy: Communication Campaign

Description of Planned Activity:

Develop and implement a statewide paid and earned media campaign to support attentive driving efforts during the April 2022 Distracted Driving mobilization. OGR will collaborate with the Massachusetts Registry of Motor Vehicles and MassDOT Highway Safety to promote awareness of the Commonwealth's "Hands-Free Law" while also messaging about the dangers of distracted driving and the importance of alert driving. OGR will also take into consideration national media buy recommendations when planning paid media. OGR will contract with a marketing and advertising agency to execute these paid impaired driving media campaigns. OGR will lead social media and press outreach efforts to garner earned media; both will be done in conjunction with paid media and the enforcement mobilization.

Internal policies will be followed, noting that all media and communications activities should support data-driven objectives and in coordination with other activities and programs, particularly enforcement. Crash and citation data will be used not only for planning enforcement activities but also for determining the target audiences and media channels used to reach those audiences. NHTSA's guidelines will be followed for messaging, demographics, best practices, and target groups for each media campaign.

Countermeasure Strategy Justification: Communication Campaign

Public outreach, whether by radio, television, outdoor displays, or social media, is necessary to spread the message of paying attention to the road ahead while behind the wheel. Media campaigns for distracted driving having a two-fold impact. First, they support and enhance the importance of attentive driving during the planned distracted driving enforcement mobilization periods. Second, they remind drivers of the dangers and illegality of using cell phones while behind the wheel.

OGR's FFY 2022 distracted driving media campaign will aim to increase awareness of and compliance with the semi-new "Hands-Free Law." Media efforts will augment enforcement to maximize deterrence efforts. OGR will provide all law enforcement partners access to earned media resources, including a local press release template, social media graphics, and PSAs to ensure a consistent and far-reaching message.

Distracted driving media campaigns can help lower the number of distraction-affected fatal crashes by encouraging drivers to be more aware of the dangers of taking their focus off the road in front of them. Through various mediums (social media, television, print, billboards, and radio), media outreach will reach a broad audience across all demographics with the limited funds available to OGR.

DD-22-01 Communication Campaign Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Distracted Driving (Paid Advertising)	\$500,000	\$0

MSP Distracted Driving Enforcement

ID: DD-22-02

Primary Countermeasure Strategy: High Visibility Cell phone/Text Messaging Enforcement

Description of Planned Activity:

The Massachusetts State Police (MSP) will conduct distracted driving law enforcement during April 2022, using internal RAMS data to determine the appropriate days, times, and locations. The preliminary timeline for this project will be based on data and guidance from NHTSA and other distracted driving events. The April campaign will coincide with the distracted driving mobilization period conducted by local police departments participating in the Municipal Road Safety grant program.

Countermeasure Strategy Justification: *High Visibility Cell phone/Text Messaging Enforcement*

The objective of this countermeasure is to deter electronics use by increasing the perceived risk of a ticket. The high visibility approach combines law enforcement with paid and earned media campaigns supporting the enforcement activity. Enforcement officers will seek out drivers actively using or looking at their phones while driving, either through assigned patrols or having a ‘spotter’ reporting usage to an officer at a location further up the road. During FFY 2022, State Police will participate in a coordinated effort to make the general public aware of the dangers of distracted driving and increase the awareness of the risk of receiving a ticket for violating the law regarding electronic device usage while driving.

MSP employs several trusted high-visibility strategies such as spotter techniques, roving marked and unmarked cruisers, and SUVs, as well as stationary vehicles. Not only does distracted driving come in many forms, but the direct result of that distraction may cause other offenses such as operating at inappropriate speeds, slow reaction time, and failure to maintain a vehicle within its proper lane. Therefore, these reckless and violating behaviors will receive special attention during the enforcement period.

High visibility enforcement activities are an effective countermeasure to increase awareness among drivers and passengers. OGR sees the combination of enforcement and education through a targeted media campaign as the best use of funding to impact a high percentage of the driving population in Massachusetts.

DD-22-02 MSP Distracted Driving Enforcement Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Distracted Driving	\$395,000	\$0

Program Management – Distracted Driving

ID: DD-22-03

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Provide enough staff to manage programming described in this plan and cover travel, professional development expenses, conference fees, and postage and office supplies. All funding intended for supporting staff and will not be sub awarded.

Countermeasure Strategy Justification: Program Management

The day-to-day operation of OGR requires funding to allow staff to oversee the distracted driving safety program properly. Lack of oversight due to reduced or no funding could lead to increased distracted driving-related fatalities and injuries on the roadways of Massachusetts.

DD-22-03 Program Management – Distracted Driving Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Distracted Driving	\$75,000	\$0

Program Area: Traffic Records

Traffic records data are vital to the analysis necessary for successful highway safety planning and programming. In coordination with our partners, our agency uses traffic records data to identify problem areas, develop and implement appropriate programs, and evaluate the effectiveness of these programs.

Massachusetts operates a complete set of systems to receive, store, and manage traffic records information. The following agencies manage these systems:

MassDOT/RMV

- Crash
- Driver history
- Vehicle registration

Merit Rating Board

- Operator driving history records consisting of at-fault crash claim records, comprehensive claim records, out-of-state incidents as well as civil and criminal traffic citation information

Massachusetts Trial Court

- Adjudication information.

MassDOT Office of Transportation Planning

- Road inventory file

Massachusetts Department of Public Health and the Center for Health Information and Analysis

- Emergency medical services/injury surveillance-related information systems.

As required by NHTSA's Section 405c grant program, Massachusetts has an active two-tiered Traffic Records Coordinating Committee (TRCC) supported by a Traffic Records Program Coordinator located within the Office of Grants and Research's Highway Safety Division. The Executive-level TRCC, chaired by the EOPSS Undersecretary of Forensic Science and Technology, was established through the coordinated efforts of its member organizations. The ETRCC is comprised of agency heads or senior personnel who set the vision and mission for a Working-level TRCC. The Working-level TRCC is the primary means by which communication is facilitated and perpetuated between the various users and collectors of data. Owners and custodians of the data systems make up the Commonwealth's traffic records systems. These TRCCs foster understanding among stakeholders and promote safety data in identifying problems and developing effective countermeasures to improve highway safety. Both committees seek to improve the accessibility, accuracy, completeness, uniformity, integration, and timeliness of the six traffic records systems in Massachusetts: Citation/adjudication, crash, driver, EMS/injury surveillance, roadway, and vehicle. This is primarily accomplished by having the TRCCs ensure that all Section 405-c funds received by Massachusetts are used for eligible, prioritized projects to enhance these systems.

The FFY 2022 Section 405c application and FFY 2022 Strategic Plan for Traffic Records Improvements contain details on the current capabilities and challenges of the Massachusetts traffic records systems. These also describe the progress made to date on projects. The FFY 2022 Strategic Plan for Traffic Records was submitted in June 2021.

Although Traffic Records' performance targets are not among the core performance measures required by NHTSA, these targets (shown below) allow the TRCC to monitor progress made and provide critical statistics for inclusion in the yearly Strategic Plan.

Performance Measures for Program Area

Performance Target #1 – Decrease the percentage of Massachusetts State Police-submitted crash reports with invalid or incomplete entries in Accepted with Warning (AWW) fields (utilizing criteria by RMV with Crash Data System data in UMassSafe Data Warehouse) from 3.7% as of 8/31/19 to 2.78% by 12/31/21. Provide mid-project progress toward the target as of 5/31/21.

Performance Target #2 – Exceed the January to December 2020 benchmarks for the RMV FARS Unit - for timeliness, completeness, and quality - by 1% for January to December 2021.

Performance Target #3 – By 6/30/22, DCJIS will install approximately 170 mobile printers for police vehicles and provide related training at an estimated 20 departments new to MACCS.

Performance Target #4 – Increase the number of Massachusetts driver records integrated with Massachusetts crash and injury surveillance (hospital case mix) data from 38,000 as of 7/1/21 to 152,000 by 9/30/22.

Performance Target #5 – A completeness/validity measurement of the field ‘cited’ in CDS driver data will be improved by 20% from a baseline of 36.9% (64,241/173,957 drivers) for 1/1/20-12/31/20 to 44.3% for 7/1/21-6/30/22.

Performance Target #6 – Increase the number of ambulance trip records successfully transmitted to the NEMSIS national repository from the Massachusetts Ambulance Trip Record Information System (MATRIS) from 0 as of 3/31/21 to 800,000 by 3/31/22

Performance Target #7 - Increase the number of trauma centers and community hospitals submitting mandatory trauma reporting to the new trauma registry within 90 days of quarter closure from 0 as of 3/31/21 to 20 by 3/31/22.

Countermeasure Strategies to be Implemented

Traffic records-related planned activities aim to make core highway safety data accessible, accurate, timely, integrated, uniform, and complete. The countermeasures in NHTSA’s *Countermeasures That Work, 9th Edition*, do not apply to traffic records projects. The TRCCs and the Highway Safety Division work with entities using Section 405-c funding to ensure their projects have documentable benchmarks/performance measures that result in effective countermeasure strategies.

These are the six ‘countermeasure’ strategies that apply to traffic records projects for FFY 2022:

1. Improves timeliness of a core highway safety database
2. Improves integration between one or more core highway safety databases
3. Improves completeness of a core highway safety database
4. Improves accuracy of a core highway safety database
5. Improves accessibility of a core highway safety database
6. Improves uniformity of a core highway safety database

Each strategy is straightforward and self-explanatory. The TRCC will not approve any project that does not aim to improve the traffic records system in one of these ways.

Planned Activities for FFY 2022

MSP Crash Report Training

ID: TR-22-01

Countermeasure Strategy: Improves completeness of a core highway safety database

Description of Planned Activity:

This project continues in FFY 2021 to improve crash report training for Massachusetts State Police (MSP) recruits at the training academy and current troopers through in-service training. MSP is being assisted in this project by the University of Massachusetts's traffic safety research program, UMassSafe. The project began with a review of current MSP crash report training done by other states, prior research available through the MA Crash E-Manual, and interviews with state crash data stakeholders. New curriculum development will follow, leading to a version for use at the academy with recruits and one for in-service training with current troopers with an online option. This project will enhance the accuracy, completeness, timeliness, and uniformity attributes of the crash data system of Massachusetts. This project will improve the data quality control program for the crash data system as called for in the 2019 Massachusetts Traffic Records Self-Assessment. This task will support traffic records performance target #1.

TR-22-01 MSP Crash Report Training Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405c Data Program	Traffic Records Improvement	\$77,850	\$0

Fatality Analysis Reporting System (FARS)

ID: TR-22-02

Countermeasure Strategy: Improves completeness of a core highway safety database

Description of Planned Activity:

NHTSA will continue to be provided by the Registry of Motor Vehicles (RMV) with motor vehicle-related fatality data from Massachusetts for the national FARS and FastFARS through a dedicated RMV position. This FARS Analyst position will be supported with NHTSA as well as state funding. The Massachusetts FARS Manual will continue to be enhanced. This project will enhance the accuracy and completeness attributes of the crash data system of Massachusetts. This project will improve the data quality control program for the crash data system, as recommended in the 2019 Massachusetts Traffic Records Self-Assessment. This task will support traffic records performance target #2.

TR-22-02 FARS Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA Cooperative Agreement	FARS	\$40,000	\$0

Motor Vehicle Automated Citation and Crash System (MACCS)

ID: TR-22-03

Countermeasure Strategy: Improves completeness of a core highway safety database

Description of Planned Activity:

To continue efforts since 2017 to achieve statewide use of MACCS, the Department of Criminal Justice Information Services (DCJIS) will acquire approximately 170 mobile printers for police vehicles and provide associated training to assist an additional estimated 20 departments joining MACCS. In part with input from law enforcement users, DCJIS will also make further software improvements to MACCS. DCJIS's state-funded MACCS Program Coordinator will coordinate both efforts. Before project expenses by DCJIS, OGR will submit to NHTSA for approval an associated request letter and Buy America Act statement. This project will enhance the accuracy, completeness, integration, timeliness, and uniformity attributes of Massachusetts' citation/adjudication and crash data system. This project will improve the data quality control program for the citation/adjudication and crash data systems as called for in the 2019 Massachusetts Traffic Records Self-Assessment. This task will support traffic records performance target #3.

TR-22-03 MACCS Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405c Data Program	Traffic Records Systems	\$199,090	\$0

Traffic Records Projects

ID: TR-22-04

Countermeasure Strategy: Improves completeness of a core highway safety database

Description of Planned Activity:

An Availability of Grant Funding (AGF) will be issued to provide FFY 2022 Section 405(c) funding on a competitive basis to quantifiable and measurable projects to improve the accessibility, accuracy, completeness, integration, timeliness, and/or uniformity (a performance attribute) of one or more of the following six core traffic records systems: crash data system, roadway inventory file, vehicle registration, driver history, citation/adjudication, and injury surveillance system. Improving these systems will enhance the ability to identify priorities for local, state, and federal traffic safety programs. Permissible projects could also evaluate the effectiveness of efforts to improve these six core traffic records systems; link these systems with other state or federal data systems; and enhance the ability of stakeholders to observe and analyze local, state, and national trends in crash occurrences, rates, outcomes, and circumstances. Only units of state and local government or not-for-profit organizations with a public purpose would be eligible to apply for funding. All funded projects must help to meet at least one unmet recommendation(s) from the Commonwealth’s 2019 Traffic Records Assessment. Preference will be given to projects that have a minimum of one benchmark and one performance measure that will demonstrate at least one quantitative improvement to a performance attribute of a minimum of one of the state’s six core traffic records systems. This quantitative improvement must be demonstrated with supporting information covering a 12-month performance period, starting anytime between April 1 and July 1, 2021, and comparable to a prior, contiguous benchmark period of one year. AGF responses would be reviewed by an OGR-selected AGF review committee and the Executive-level Traffic Records Coordinating Committee. Those projects approved for funding would then be submitted to NHTSA and then EOPSS for review and approval.

Each resulting project will support one or more of the FFY 2022 performance targets listed above or a new one if necessary.

TR-22-04 Traffic Records Projects Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405c Data Program	405c Data Program	\$1,300,910	\$0

Integration and Analysis of Crash, Injury Surveillance & Driver Data

ID: TR-22-05

Countermeasure Strategy: Improves integration between one or more core highway safety databases

Description of Planned Activity:

The MA Department of Public Health will integrate 2016 - 2018 driver license/history data for crashes with previously integrated data from the MA Crash-Related Injury Surveillance System (MA CRISS) that has crash and hospital case-mix data. After linking these data sources, linkage rates, data quality, and data representativeness will be assessed. A report will be produced to show exploratory analysis of the new integrated driver-crash-hospital mix data, and this report will be shared with traffic records stakeholders. This project will enhance the accessibility and integration of the crash, driver, and injury surveillance/EMS data systems of Massachusetts. This project will improve the capacity to integrate data as called for in the 2019 Massachusetts Traffic Records Self-Assessment.

The budget will cover personnel (\$74,600), fringe (\$28,587), and indirect costs (\$9,430).

This task will support traffic records performance target 4.

TR-22-05 Integration/Analysis of Crash, Injury, Driver Data Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405c Data Program	405c Data Program	\$112,617	\$0

Improving Traffic Safety Analysis Data Quality Assessment and Driver/Vehicle Data Integration

ID: TR-22-06

Countermeasure Strategy: Improves accuracy of a core highway safety database

Description of Planned Activity:

This project will conduct a data quality assessment of the crash, driver, and vehicle datasets in Massachusetts to determine the strengths and limitations of each and how they can be more effectively integrated for simultaneous analysis. A data management report will be developed to summarize the assessment findings and recommended follow-ups. This project will increase the accuracy, completeness, integration, and uniformity of the crash, driver, and vehicle systems. This project will improve the data quality control program for the driver data system and enhance the traffic records systems' capacity to integrate data as called for in the 2019 Traffic Records Self-Assessment. The University of Massachusetts-Amherst traffic safety research program (UMassSAFE) will be the subrecipient of funding for this project.

The budget will cover personnel (\$77,967.26), fringe (\$29,826.46), indirect (\$66,993.28), consultant (\$4,500) and travel costs (\$300).

This task will support traffic records performance target 5.

TR-22-06 Improving Traffic Analysis Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405c Data Program	405c Data Program	\$293,041	\$0

Massachusetts Ambulance Trip Record Information System (MATRIS) NEMSIS V3.5 Upgrade

ID: TR-22-07

Countermeasure Strategy: Improves accuracy of a core highway safety database

Description of Planned Activity:

The National Emergency Medical Service Information System (NEMSIS) requires all state and ambulance service e-patient care record systems to migrate from NEMSIS V3.4 to V3.5 by 12/31/22. MA Department of Public Health (MDPH) will use a vendor to update its MATRIS system to accept data submissions using the new version, migrate earlier version data in the system, and work with the current 15 different vendors of ambulance services so they can adopt the latest version. This project will increase the accuracy, completeness, integration, and uniformity of the injury surveillance/EMS system. This project will improve the data quality program and the interfaces with the injury surveillance/EMS system as called for in the 2019 Traffic Records Assessment.

This task will support traffic records performance target 6.

TR-22-07 MATRIS NEMSIS V3.5 Upgrade Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405c Data Program	405c Data Program	\$213,000	\$0

Massachusetts Trauma Registry Data Timeliness, Uniformity, and Custom Reporting

ID: TR-22-08

Countermeasure Strategy: Improves completeness of a core highway safety database

Description of Planned Activity:

Custom variables need to be added to the new web-based Trauma Registry to accommodate national and state standards. This custom reporting will allow for real-time and trauma center and community hospital-specific evaluation of the completeness and timeliness of submissions to the registry. This project will increase the accuracy, completeness, timeliness, and uniformity of the injury surveillance/EMS system. This project will improve the data quality program for the injury surveillance/EMS system as called for in the 2019 Traffic Records Assessment. The MA Department of Public Health (MDPH) will be the subrecipient of funding for this task.

It is estimated that \$40,000 of the budget will be for contractors.

This task will support traffic records performance target 7.

TR-22-08 Massachusetts Trauma Registry Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405c Data Program	405c Data Program	\$110,000	\$0

Program Management – Traffic Records

ID: TR-22-09

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Provides enough staff to manage programming described in this plan and covers travel, professional development expenses, conference fees, and postage and office supplies. All funding is intended for supporting staff and will not be sub-awarded.

Countermeasure Strategy Justification: Program Management

The day-to-day operation of OGR requires funding to allow staff to oversee the traffic records program properly. Lack of oversight due to reduced or no funding could lead to increased speed-related fatalities and injuries on the roadways of Massachusetts.

TR-22-09 Program Management – Traffic Records Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Traffic Records Management	\$190,000	\$0

Program Area: Police Traffic Services

The overarching goal of Police Traffic Services is to help reduce traffic fatalities across the state through specialized training, enforcement, education, and awareness programs. Better educated law enforcement members, prosecutors, and judiciary personnel will improve approaches to traffic safety. It will also help address legal issues such as integrating testimony of Drug Recognition Experts into courtrooms and pulling over suspected OUI alcohol or drug-impaired drivers.

The FFY 2022 Planned Activities for Police Traffic Services encompass a well-rounded approach to reducing crashes. This plan includes specialized police training, supporting the activities of a Law Enforcement Liaison and a Traffic Safety Resource Prosecutor, training for prosecutors and judges, and local and state police High Visibility Enforcement.

Through these planned activities, OGR aims to lower traffic fatalities across the Commonwealth.

Performance Measure for Police Training Services

Number of Traffic Fatalities

FFY 2022 Target: 2% drop in the five-year average from 354 in 2020 to 347 by December 31, 2022.

Planned Activities for FFY 2022

MPTC – Municipal Police Training

ID: PT-22-01

Primary Countermeasure Strategy: Police Training Supporting Enforcement

Description of Planned Activity:

This program will provide funding to MPTC to conduct up to 30 classes for municipal police departments to improve enforcement of laws on current traffic safety issues such as speeding, pedestrian and bicyclist safety, and distracted driving. Courses provided will include Traffic Crash Investigation, Advanced Traffic Crash Investigation, Crash Reconstruction Investigation, Speed Measurement, Radar Operator, and LiDAR training. MPTC will offer training with the newly released Speed Measurement Training Manuals from NHTSA. Training courses will take place at police departments across the Commonwealth throughout the year.

Countermeasure Strategy Justification:

Police Training Supporting Enforcement

Funding for MPTC will allow the agency to offer numerous training classes for municipal police departments and increase the number of officers eligible to become instructors and maintain their certifications. Increased knowledge by law enforcement on these critical topics will lead to improved and more focused policing by officers, whether on patrol or assisting with a traffic checkpoint. With this knowledge, officers will be more effective and efficient when engaging in traffic checkpoints,

enforcement patrols, and crash scene reporting. This training, in turn, will help improve the quality of crash reports being submitted to RMV and increase the safety of all roadway users.

PT-22-01 Municipal Police Training Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Police Traffic Services	\$335,000	\$335,000

LEL – Law Enforcement Liaison

ID: PT-22-02

Primary Countermeasure Strategy: Police Training Supporting Enforcement

Description of Planned Activity:

Provide funding to support an LEL and associated activities, including expenses for travel to attend meetings, training, and conferences supporting traffic safety issues, including but not limited to impaired and distracted driving and occupant protection. National conferences may include the International Association of Chiefs of Police Conference and the Lifesavers Conference. Funding will also cover the cost of local travel as needed to meet with local law enforcement and other traffic safety stakeholders. Countermeasure Strategy Justification: Police Training Supporting Enforcement Funding for the LEL position will help OGR better communicate with local police departments and other traffic safety stakeholders. All agencies with traffic safety concerns will be on the same page regarding shared goals by improving communication channels. Furthermore, OGR will be better positioned to assist local and MSP with traffic fatality data to help drive enforcement patrols and messaging in their respective communities.

This task supports the 2020 Occupant Protection Assessment recommendation to implement and support a Law Enforcement Liaison to champion occupant protection throughout the Commonwealth.

Countermeasure Strategy Justification: *Police Training Supporting Enforcement*

Funding for the LEL position will help OGR better communicate with local police departments and other traffic safety stakeholders. All agencies with traffic safety concerns will be on the same page regarding shared goals by improving communication channels. Furthermore, OGR will be better positioned to assist local and MSP with traffic fatality data to help drive enforcement patrols and messaging in their respective communities.

PT-22-02 Law Enforcement Liaison Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Police Traffic Services	\$ 95,000	\$95,000

MDAA TSRP

ID: PT-22-03

Primary Countermeasure Strategy: Prosecutor/Law Enforcement Training

Description of Planned Activity:

Funds will be used to support the Massachusetts District Attorneys Association's (MDAA) Traffic Safety Resource Prosecutor (TSRP) activities. These activities include conducting training and conferences, providing technical assistance, and creating and maintaining vehicular crime resources for prosecutors and law enforcement.

The vehicular crime database/resource is for prosecutors and law enforcement to utilize in the court of law. Providing a database of vehicular crimes will assist prosecutors in handling cases, especially those involving impaired driving.

The main objectives of this program are to:

1. Support the activities of a staff attorney dedicated to training, educating, and offering technical support to prosecutors throughout the state.
2. Strengthen and expand training for the prosecution regarding the investigation and prosecution of distracted or impaired driving and vehicular fatality cases.
3. Develop and update distracted or impaired driving training programs and resources.

Some of the planned training that the TSRP will provide:

- Standardized Field Sobriety Legal Section – Fall/Winter 2021
- Collaborative work with outside agencies – 2021-2022
- Drugged Driving for Law Enforcement and Prosecutors – Fall 2021
- OUI Trial Advocacy for Prosecutors – Spring 2022
- The Basics of Crash Reconstruction – Spring 2022
- Advanced OUI Crash Reconstruction – Summer 2022
- Identifying Marijuana Impairment – Spring/Fall 2022
- Motor Vehicle Training Webinars – 2021-2022

- Sum and Substance Training Series – Winter 2021-2022

Additional responsibilities dealing with impaired driving and motor vehicle-related issues include:

Train the Commonwealth's prosecutors and, subject to resources, other professionals in the criminal justice field, including law enforcement officers and the judiciary

Electronically alert prosecutors, law enforcement, and other criminal justice professionals to changes in statutory and case law regarding motor vehicle crimes

Maintain a database of vehicular crimes-related expert witness transcripts

Create and maintain the vehicular crimes pages and resources on MDAA's Mass.gov public website and its secure intranet site, MDAA.net

Continue to update the Massachusetts Prosecutors OUI Manual

Monitor legislation in conjunction with MDAA's Special Counsel

Provide technical assistance to prosecutors and, subject to resources, law enforcement officers, the judiciary, and other state and local agencies

Act as a liaison between prosecutors and other stakeholder entities, including the Executive Office of Public Safety and Security, Mothers Against Drunk Driving, the Massachusetts Judicial Institute, the MPTC, and the Administrative Office of the Trial Court

Countermeasure Strategy Justification: Prosecutor/Law Enforcement Training

Although there is not a specific countermeasure strategy for TSRPs defined in the "Countermeasures That Work, Ninth Edition, 2017 (CTW)" publication, NHTSA recognized the value of these positions and developed a manual to assist new TSRPs (NHTSA, 2007b). This publication is referenced in the CWT.

A TSRP conducts training and provides technical assistance to prosecutors and law enforcement personnel to utilize in the court of law. The TSRP helps increase stakeholders' knowledge in the adjudication of impaired driving cases, whether at a roadside stop or in court.

PT-22-03 MDAA TSRP Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Matching Amount	Local Benefit
2022	405d Impaired Driving	Police Traffic Services	\$171,330	\$42,833	\$0

MSP Law Enforcement Liaison (LEL)

ID: PT-22-04

Primary Countermeasure Strategy: Police Training Support Enforcement

Description of Planned Activity:

Provide funds to MSP for training and travel-related expenses for the LEL to attend meetings, training, and national conferences in support of significant traffic safety issues, including but not limited to impaired and distracted driving, occupant protection, and drug recognition expert training.

National conferences will include the International Association of Chiefs of Police (IACP) Conference in the Fall of 2021 and the Lifesavers Conference in the Spring of 2022. Funding will also be used to cover the cost of local travel for the LEL to attend meetings and training with local law enforcement and other traffic safety stakeholders.

This task supports the 2020 Occupant Protection Assessment recommendation to implement and support a Law Enforcement Liaison to champion occupant protection throughout the Commonwealth.

Countermeasure Strategy Justification: Police Training Support Enforcement

Funding for the MSP LEL position will help OGR better communicate with MSP and develop a shared vision of improving traffic safety. Furthermore, the MSP LEL will mitigate the flow of information between the six MSP Troops and OGR, which will lead to a more detailed understanding of the traffic safety issues occurring on the state highways and roads of the Commonwealth. Funding will also lead to enhanced communications between LELs, MSP, and OGR, resulting in greater cooperation and collaboration in improving traffic safety across Massachusetts.

PT-22-04 MSP LEL Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Police Traffic Services	\$15,000	\$0

MSP Young Drivers Education

ID: PT-22-05

Primary Countermeasure Strategy: School Programs

Description of Planned Activity:

Funds will be provided to the MSP to educate young drivers and the general public on the importance of wearing a seatbelt and the dangers of impaired driving. MSP will conduct up to 20 demonstrations of the

Rollover Simulator and SIDNE vehicle (Simulated Impaired Driving Experience) at high schools, on weekends, and at highly populated events in Massachusetts. Accompanying the rollover vehicle demonstrations and when feasible, the MSP will provide a hands-on interactive display that will highlight the dangers of impaired driving.

A portion of the funds will provide for the purchase of interactive education materials and let officers give safe driving presentations at mandated driver education classes.

Countermeasure Strategy Justification: School Programs

Massachusetts ranks as one of the lowest in the United States for seatbelt usage. Conducting information and education sessions at schools has been shown to increase seat belt use and an overall understanding of the importance of restraints while driving or riding in a vehicle.

For FFY 2022, funding is being provided to MSP to travel to various high schools across the state to conduct vehicle simulations to educate the public, or more specifically, young drivers (those under 20 years of age), on the necessity of wearing a seat belt anytime one is in a moving vehicle.

PT-22-05 MSP Young Drivers Education Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Police Traffic Services	\$55,000	\$

Municipal Road Safety (MRS)

ID: PT-22-06

Primary Countermeasure Strategy: High-Visibility Enforcement

Description of Planned Activity:

Competitive grant awards will enable local police departments the flexibility to participate in various traffic safety elements that all aim to reduce fatalities, injuries, and economic losses from motor vehicle crashes on local roads in Massachusetts. In providing flexible options for municipalities, the MRS program allows departments to focus on equity issues within their communities. For FFY 2022, the Pedestrian and Bicyclist (Ped&Bike) Safety element has been added to the program. Therefore, the MRS program will offer up to five elements to choose from: Traffic Enforcement, Traffic Equipment, Ped&Bike Enforcement, Ped&Bike Safety Items, and Non-Enforcement Traffic Safety Activities. All grant applications will be rated along with various criteria, and awards will be based on the highest average score across all application reviewers. An amendment will be submitted to NHTSA with specifics on selected subrecipients, and individual award amounts once the competitive grant process is completed.

Examples of trainings planned include, but not limited to: ARIDE, ARIDE instructor, SFST, and LiDAR certification. Examples of non-enforcement activities include, but not limited to: Fatal Vision presentations at colleges and high schools, discussions with high school students regarding the dangers of speeding and driving under the influence, and for younger demographics, bike rodeos, bike and pedestrian safety presentations at local elementary schools.

This planned activity will also support overtime enforcement for the following national safety mobilizations during FFY 2022:

- **Click It or Ticket (CIOT)** – May 23, 2022 to June 5, 2022
- **Drive Sober or Get Pulled Over (DSGPO)**
 - Winter Holiday – December 17, 2021 to January 1, 2022
 - Labor Day – August 19, 2022 to September 5, 2022
- **Distracted Driving (DD)** – April 4, 2022 to April 11, 2022

The MRS grant program will allow all 351 local police departments to apply for funding. The application and review process will not occur until after July 1, 2021. Once completed, OGR will provide NHTSA with a list of subrecipients and amount awarded to each one. Based on prior year participation in OGR enforcement programs, OGR expects well over 130 municipalities to be involved during FFY 2022. Of these municipalities, many will represent one of six counties that accounted for 70% of all unrestrained motor vehicle occupant fatalities that occurred from 2016 to 2020. Those counties are:

- Bristol
- Hampden
- Middlesex
- Norfolk
- Plymouth
- Worcester

Countermeasure Strategy Justification: High-Visibility Enforcement

High-visibility enforcement (HVE) campaigns have been shown in the past to be effective in helping deter dangerous driving behaviors such as impaired driving, distracted driving, speeding, and not wearing seat belts while riding in a motor vehicle. Similarly, HVE serves as a deterrent in pedestrian and bicyclist safety enforcement efforts. OGR will work with selected subrecipients to target high incidence periods of fatal crashes involving dangerous driving behaviors and focus on pedestrian problem areas using the latest data. Through this data-driven targeted approach, high-visibility enforcement will improve driving, pedestrian, and bicyclist safety behaviors in 2022.

PT-22-06 Municipal Road Safety Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Police Traffic Services	\$6,522,863	\$5,277,357

MSP Sustained Traffic Enforcement Program (STEP)

ID: PT-22-07

Primary Countermeasure Strategy: Sustained Enforcement

Description of Planned Activity:

In support of impaired driving and occupant protection laws, this task will provide funds to the MSP to deploy sustained and selective “zero tolerance” traffic enforcement overtime patrols through the STEP program. The activity will occur on the day/time/location identified using MSP RAMS data. This activity will be conducted to augment local police department efforts within the same general location whenever reasonably possible. Along with local police departments, MSP STEP enforcement patrols will provide maximum visibility for deterrent purposes and saturate target areas taking immediate and appropriate action on all motor vehicle violations. The funding for the MSP allows for increased enforcement throughout the year instead of only during mobilization periods. This funding will help MSP conduct overtime enforcement focusing on impaired driving, seat belt usage, child passenger safety infractions, speed, and aggressive and dangerous driving. The result will improve traffic safety for both motorists and non-motorists along the roadways of Massachusetts.

Countermeasure Strategy Justification: Sustained Enforcement

Impaired drivers are detected and arrested through regular traffic enforcement and crash investigations and special impaired driving checkpoints and saturation patrols. Another enforcement tactic is integrating impaired driving enforcement into special enforcement activities focused on other offenses such as speeding or lack of seat belt usage. In Massachusetts, the Sustained Traffic Enforcement Program (STEP) provides MSP with the funding to take this integrated enforcement approach to traffic safety. This funding will help MSP tackle high crash and fatality rates for both motorists and non-motorists across the Commonwealth.

The funding for MSP STEP participants allows for increased enforcement throughout the year instead of only during mobilization periods. This funding will help MSP conduct overtime enforcement to improve traffic safety for both motorists and non-motorists along the roadways of Massachusetts.

With MSP conducting increased enforcement throughout FFY 2022, not only will the number of impaired driving fatalities drop but also the number of unrestrained fatalities and speed-related fatalities. Data has shown that impaired drivers and passengers are most likely not to wear a seat belt and to be involved in a speed-related fatal crash.

Based on data analysis of unrestrained fatalities by county, MSP will be advised to prioritize enforcement activities within the six Massachusetts counties to accounted for 70% of all unrestrained fatalities from 2016 to 2020: Bristol, Hampden, Middlesex, Norfolk, Plymouth, and Worcester. These six counties were also responsible for over 70% of speed-related fatalities during the five-year period of 2015 to 2019.

PT-22-07 MSP STEP Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	405d Impaired Driving	Police Training Services	\$295,000	\$0
2022	402	Police Training Services	\$220,000	\$0

Program Management – Police Training Services

ID: PT-22-08

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Provide enough staff to manage programming described in this plan and cover travel, professional development expenses, conference fees, and postage and office supplies. All funding intended for supporting staff and will not be sub awarded.

Countermeasure Strategy Justification: Program Management

The day-to-day operation of OGR requires funding to allow staff to oversee the police training services program properly. Lack of oversight due to reduced or no funding could lead to increased fatalities and injuries on the roadways of Massachusetts.

PT-22-08 Program Management – Police Training Services Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Police Training Services	\$385,000	\$0

Program Area: Community Traffic Safety Projects

The overarching goal of Community Traffic Safety Projects is to help reduce traffic fatalities across the state through education and awareness programs launched by selected subrecipients. Competitive grant awards will support non-profit organizations and local governmental agencies in implementing community-based traffic safety programs tailored to the geographical area and the high-risk demographics of their respective town, community, or region.

OGR sees an opportunity to introduce new and more effective behavioral changes to road users by empowering communities to craft customized, data-driven, educational, and awareness efforts. These changes may lead to a reduction in crashes, fatalities, and injuries in Massachusetts.

Performance Measure for Community Traffic Safety Projects

Number of Traffic Fatalities

FFY 2022 Target: 2% drop in the five-year average from 354 in 2020 to 347 by December 31, 2022

Planned Activities for FFY 2022

Community Traffic Safety Projects

ID: CP-22-01

Primary Countermeasure Strategy: Communication Campaign

Description of Planned Activity:

This program will fund educational community-based projects that raise awareness of state traffic laws, allow for the development of transportation safety equity programs and best practices for all road users. Through a competitive grant process, funds will be awarded to non-profit organizations and non-law enforcement municipal agencies for data-driven traffic safety awareness projects. These projects will focus on impaired driving, occupant protection, distracted driving, and/or pedestrian and bicyclist safety, and local transportation safety equity.

All grant applications will be rated on various criteria, and awards will be based on the highest average score across all application reviewers. Once the process is completed, an amendment will be submitted to NHTSA and then EOPSS for review and approval. The amendment will provide specifics on each selected subrecipient, their proposed project, and respective award amount.

Those projects approved for funding would then be submitted to NHTSA and then EOPSS for review and approval.

The programs will generally be focused on raising awareness of road safety, training, and changing social attitudes and behaviors to reduce vehicle crashes and their associated fatalities, serious injuries, and economic losses on the state's roadways.

This program will not provide any funds for law enforcement or law enforcement agencies, although OGR will encourage applicants to develop partnerships with law enforcement agencies to achieve project goals.

Countermeasure Strategy Justification: Communication Campaign

This planned activity aims to lower traffic fatalities and injuries and support OGR’s impaired driving, occupant protection, and non-motorist safety goals. The educational and awareness projects that selected subrecipients will develop will complement statewide media safety campaigns and supplement local law enforcement efforts.

CP-22-01 Community-Based Traffic Safety Program Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402 & 405h	Community Traffic Safety Projects	\$1,000,000	\$550,000

Program Management – Community Traffic Safety Projects

ID: CP-22-02

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Provide enough staff to manage programming described in this plan and cover travel, professional development expenses, conference fees, and postage and office supplies. All funding intended for supporting staff and will not be sub awarded.

Countermeasure Strategy Justification: Program Management

The day-to-day operation of OGR requires funding to allow staff to oversee the community traffic safety program properly. Lack of oversight due to reduced or no funding could lead to increased fatalities and injuries on the roadways of Massachusetts.

CP-22-02 Program Management – Community Traffic Safety Projects Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Local Benefit
2022	NHTSA 402	Community Traffic Safety Projects	\$85,000	\$0

Program Area: Planning & Administration

This section covers the Planning and Administrative programming required to faithfully execute the planned activities detailed in the FFY 2022 Highway Safety Plan. Funding is needed to support OGR staff for day-to-day operations and comply with all Federal and State regulations.

Administration of Statewide Traffic Safety Programs

ID: PA-22-01

Primary Countermeasure Strategy: Highway Safety Office Program Management

Description of Planned Activity:

Funding to plan, implement, monitor, and evaluate programs and projects detailed in the FFY 2022 Highway Safety Plan (HSP), produce the FFY 2021 Annual Report (AR), as well as create the FFY 2023 HSP. Provide required staff salaries, professional development, travel, office space, equipment, materials, and fiscal support. Funds will support SHSO staff and will not be sub awarded.

It must be noted that the significant increase in P&A costs from the previous fiscal year is due to increased personnel. During the most recent NHTSA program management review, it was recommended that OGR hire additional fiscal staff to dedicate more administrative support for NHTSA-funded awards. OGR has acted on this recommendation, creating several new positions within fiscal over the last twelve months. In doing so, these positions also will share in the overall agency costs. Increasing the P&A for FFY 2021 will ensure the newly added fiscal staff is charged appropriately for the percentage of time spent on each grant-funded award.

Project staff: Jeff Larason, Kevin Stanton, Corine Pryme, Diane Perrier, Rita Taylor, Denise Brown, Susan Burgess-Chin, Annette Powell, and Maria Soto-Santa

PA-22-01 Administration of Traffic Safety Programs Planned Funding

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Matching Amount	Local Benefit
2022	NHTSA 402	Planning and Administration	\$1,327,000	\$1,327,000	\$0

Appendix A: Financial Summary of Planned Activities

Project #	Planned Activity	2022 HSP Budget	Funding Source	Local Benefit	Match
AL-22-01	Impaired Driving Media	\$ 2,750,000	405d		
AL-22-02	MSP Sobriety Checkpoint & Saturation Patrols	\$ 2,500,000	405d		\$ -
AL-22-03	MA Trial Court- Judicial Education Program	\$ 18,135	405d		\$ 4,550
AL-22-04	MSP-OAT Breath Test Operator (BTO) Training	\$ 290,000	405d		
AL-22-05	MSP Drug Recognition Expert (DRE) Training	\$ 255,000	405d		
AL-22-06	MPTC- Law Enforcement SFST Training Program	\$ 210,000	405d		
AL-22-07	MPTC - Drug Evaluation and Classification Program	\$ 757,812	405d		
AL-22-08	ABCC - Underage Drinking Compliance Checks Program	\$ 97,500	405d		\$ 24,375
AL-22-09	ABCC - Enforcement Program to Prevent the Sale of Alcohol to Intoxicated Persons	\$ 97,500	405d		\$ 24,375
AL-22-10	Stakeholders Conferences	\$ 35,000	402	\$ 35,000	
AL-22-11	Program Management- Impaired Driving	\$ 185,000	402		
CP-22-01	Community Traffic Safety Projects	\$ 450,000	405h		
CP-22-01	Community Traffic Safety Projects	\$ 550,000	402	\$ 550,000	
CP-22-02	Program Management- Community Traffic Safety Projects	\$ 85,000	402		
DD-22-01	Distracted Driving Media	\$ 500,000	402		
DD-22-02	MSP Distracted Driving Enforcement	\$ 395,000	402		
DD-22-03	Program Management- Distracted Driving	\$ 75,000	402		
MC-22-01	Motorcycle Safety Media	\$ 100,000	402		
MC-22-02	RMV- Motorcycle Safety Program Enhancements	\$ 210,275	405f		
MC-22-03	Program Management- Motorcycle Safety	\$ 51,000	402		
OP-22-01	Occupant Protection Media	\$ 600,000	405b		
OP-22-02	MSP CIOT Enforcement Campaign	\$ 550,000	405b		
OP-22-03	Car Seat Distribution Program	\$ 425,000	402	\$ 425,000	
OP-22-04	Child Passenger Safety Administration and Training	\$ 350,000	405b		
OP-22-05	Statewide Seat Belt Observation Survey	\$ 205,718	405b		
OP-22-06	MSP CPS Program	\$ 140,000	405b		
OP-22-07	Program Management- Occupant Protection	\$ 165,000	402		
PA-22-01	Administration of Statewide Traffic Safety Program	\$ 1,327,000	402		\$ 1,327,000
PS-22-01	Pedestrian and Bicyclist Safety Media	\$ 370,000	402		
PS-22-02	Program Management- Ped & Bicyclist Safety Program	\$ 65,000	402		
PT-22-01	MPTC- Municipal Police Training	\$ 335,000	402	\$ 335,000	
PT-22-02	Law Enforcement Liaison (LEL)	\$ 95,000	402	\$ 95,000	
PT-22-03	MDAA/TSRP	\$ 109,000	405d		\$ 27,250
PT-22-03	MDAA/TSRP	\$ 62,330	402	\$ 62,330	\$ 15,583
PT-22-04	MSP- LEL	\$ 15,000	402		
PT-22-05	MSP Young Drivers Education Program	\$ 55,000	402		
PT-22-06	Municipal Road Safety (MRS) Program	\$ 5,277,357	402	\$ 5,277,357	
PT-22-06	Municipal Road Safety (MRS) Program	\$ 1,245,506	405h		
PT-22-07	MSP Sustained Traffic Enforcement Program	\$ 295,000	405d		
PT-22-07	MSP Sustained Traffic Enforcement Program	\$ 220,000	402		
PT-22-08	Program Management- Police Traffic Services	\$ 385,000	402		
SC-22-01	Speed Media	\$ 450,000	402		
SC-22-02	MSP Speed Enforcement	\$ 750,000	402		
SC-22-03	Program Management- Speeding and Aggressive Driving	\$ 95,000	402		
TR-22-01	MSP Crash Report Training	\$ 77,850	405c		
TR-22-02	Fatality Analysis Reporting System (FARS)	\$ 40,000	FARS Co-Op		
TR-22-03	Motor Vehicle Automated Citation and Crash System	\$ 199,090	405c		
TR-22-04	TR 2022 projects TBD by AGF	\$ 1,300,910	405c		
TR-22-05	Integration and Analysis of Data	\$ 197,500	405c		
TR-22-06	Improving Traffic Safety Analysis	\$ 293,041	405c		
TR-22-07	MATRIS NEMSIS V3.5 Upgrade	\$ 213,000	405c		
TR-22-08	Massachusetts Trauma Registry Data	\$ 110,000	405c		
TR-22-09	Program Management- Traffic Records	\$ 190,000	402		
		\$ 25,820,524		\$ 6,779,687	\$ 1,423,133

Appendix B: TSEP & HVE Strategies

Evidence-based Traffic Safety Enforcement Program (TSEP)

Listed below are planned activities for FFY 2022 that, based on data analysis of fatal crashes, fatalities, and injuries from 2016 to 2020, constitute the TSEP for Massachusetts. Each planned activity involves enforcement of varying degrees by local and state police agencies. The overarching goal is to make the roadways safer for all road users, whether a driver, passenger, motorcyclist, pedestrian, or bicyclist.

Unique Identifier	Planned Activity Name
AL-22-02	MSP Sobriety Checkpoints and Saturation Patrols
DD-22-02	MSP Distracted Driving Enforcement
OP-22-02	MSP CIOT Enforcement
PS-22-02	Local Police Pedestrian & Bicyclist Safety Enforcement Program
PT-22-06	Municipal Road Safety
PT-22-07	MSP Sustained Traffic Enforcement Program (STEP)
SC-22-02	MSP Speed Enforcement

The identification of traffic safety issues for the FFY 2022 HSP was made using data analysis of numerous traffic safety data elements including, but not limited to, causes, counties, time-of-day, month, day-of-week, road type, gender, and age group. Each of the planned enforcement activities for FFY 2022 will reduce fatal crashes and fatalities for Massachusetts' traffic safety performance measures.

From 2016 to 2020, Massachusetts reported 1,770 motor vehicle-related fatalities and 13,193 incapacitating injuries along its roadways. This total marks a 1% decline in deaths from 1,787 for 2014-2018; and a 6% drop in serious injuries from 14,078 for 2014-2018.

Of the 14 counties in Massachusetts, eight accounted for 88% of all fatalities and serious injuries reported during the five years of 2016 – 2020. These counties – Bristol, Essex, Hampden, Middlesex, Norfolk, Plymouth, Suffolk, and Worcester, will be a focus for OGR for FFY 2022. These eight counties represent 91% of the population in Massachusetts.

To increase the impact of enforcement, OGR will recommend subrecipients consider the following general observations from the analysis of crash data from 2016 to 2020:

- Warmer months (April-September) tend to have more fatalities than colder months (October-January).
- July is the top month for fatalities, with the summer months (June - August) accounting for 35% of traffic fatalities.
- By day, the three-day period of Friday, Saturday, and Sunday accounted for 49% of all fatalities from 2016 to 2020. Monday and Tuesday had the lowest amount of deaths.
- Two-thirds of all crash fatalities occurred between 3 pm and 3 am. Enforcement activity by State and local police should prioritize overtime patrols during these 12 hours.
- More than half of all traffic fatalities took place along principal and minor arterial roads, followed by local (18%) and interstate (17%).
- Males accounted for nearly 70% of all traffic fatalities in Massachusetts.
- Two-thirds of traffic fatalities were drivers, followed by pedestrians (20%), passengers (13%), and bicyclists (2%). Enforcement activity should involve locations with a high level of driver-pedestrian interaction, such as busy intersections along main streets in the community.
- By age group, fatalities were highest among those aged 25-34. This group accounted for 19% of all traffic fatalities.
- Over half of all pedestrian fatalities were age 55 or older, marking the third straight year where pedestrian fatalities among this age grouping had increased. Since 2018, the percentage of 55+ pedestrian fatalities have risen from 50% to 52% to 54%.

For the most part, these general trends in fatalities and fatal crashes can help law enforcement plan patrols. But for specific (i.e., impaired, pedestrian, etc.) enforcement activities, there are some slight differences in target periods. Planned enforcement activities (PT-21-06, PT-21-07) will benefit from applying these trends to overtime patrols.

For impaired driving-focused planned activities (AL-21-02), enforcement patrols should be most frequent on principal and minor arterial roads between the hours of 6 pm and 3 am on Friday, Saturday, and Sunday. The target age group for impaired drivers is drivers age 34 or younger. This age group accounted for 50% of all impaired drivers involved in a fatal crash.

For distracted driving-focused enforcement (DD-21-02), law enforcement should target locations where a high density of residents is age 55 or older. Over half of distracted driving fatalities were pedestrians in this age group. Targeting intersections or crosswalks in the proximity of 55+ residential developments within their respective community may be beneficial.

Over two-thirds of distracted driving crashes occur between 9 am and 9 pm and happen most frequently between Friday and Monday. This four-day period accounted for 63% of all distracted driving-related crashes reported. Monday had the highest crash total, with 35 of 204 distracted driving fatal crashes.

For pedestrian-focused enforcement (PS-21-02), the critical months for enforcement patrols aren't warmer ones but rather colder months. From October to March, nearly 70% of all pedestrian fatalities occurred. With the rise in older pedestrian fatalities (55+), local police should increase enforcement patrols between 6 am and 3 pm. For younger pedestrians, patrols should shift to the hours between 3 pm and 3 am.

For unrestrained enforcement (OP-21-02), drivers accounted for 81% of all unrestrained fatalities, and over half of those fatalities took place on Friday, Saturday, and Sunday. The peak times for enforcement of unrestrained drivers for subrecipients would be between 6 pm, and 6 am, emphasizing 12 am to 6 am. During this time frame, 43% of all the fatalities reported over the six hours involved an unrestrained fatality.

Lastly, speed enforcement (SC-21-02) should be conducted most often during two, two-month periods: June-July and October-November. Over 40% of speed-related fatalities happened during these four months. Fifty-eight percent of all speed-related crashes occurred between 6 pm, and 3 am, with Saturday and Sunday being the two highest days. Alcohol is a factor in speeding-related fatalities as 47% involved a driver with a BAC of .08 or higher. Enforcement patrols during the late evening and early morning hours over the weekend should be aware of a higher possibility of pulling over a speeding driver that is also alcohol-impaired.

These general and Planned Activity-specific suggestions for scheduling enforcement patrols will help subrecipients better target driver behaviors. OGR is confident that when local police apply such guidelines to plan enforcement activity, it will have a net positive effect on the safety of all roadway users.

Deployment of Resources

When determining key areas to fund for FFY 2022, OGR utilizes data and stakeholder feedback to ascertain the types and severity of the problems and identify where the most significant impacts in terms of reducing crashes, injuries, and fatalities can be made. With numerous charts, graphs, and tables provided in the FFY 2022 HSP, all Planned Activities are supported by data and justify the need for funding to reduce traffic crashes, fatalities, injuries, and economic loss across the Commonwealth.

Subrecipients are primarily selected based on competitive grant applications that are data-driven and evidence-based. Each applicant is encouraged to provide data on the level of crashes and fatalities within their respective community or region.

The Commonwealth of Massachusetts evidence-based traffic safety enforcement methodology will also include enforcement of traffic laws on impaired driving, seat belt usage, and pedestrian safety, coupled with numerous sobriety checkpoints held throughout the state. The combined efforts among local and state law enforcement agencies and non-profit organizations will help promote traffic safety and increase public awareness of pedestrians on the roads and the risk of impaired driving and failure to wear a seat belt.

Based on the data in this section, OGR will recommend local police departments and MSP make more informed decisions about where and when to deploy resources.

Effectiveness Monitoring

A two-pronged approach to oversight will be employed to ensure projects remain focused on their respective objectives – namely, decreasing traffic safety-related crashes, fatalities, and injuries. First, OGR will conduct ongoing post-award assessments of each grant-funded agency. The assessments will ensure all grant requirements are met, and fund expenditures are accounted for properly.

OGR will make site visits to keep enforcement agencies from lagging in their efforts and ensure subrecipients are making efforts to reach the desired objectives of their grant-funded project. These visits will ensure that subrecipients adhere to the grants' requirement and identify towns or cities that experience increases in crash fatalities to see what the subrecipient is (or is not doing) to address the problem.

During FFY 2022, program coordinators plan to conduct site visits, either virtual or in-person, across the Commonwealth. All visits will be documented through a standard reporting form, and copies of the completed reports placed in the grant files.

Furthermore, all grant-funded agencies will be required to regularly report covering activities, hours of enforcement, and expenditures. HSD aggregates data collected from these monthly reports to detect any trends, whether positive or negative. If necessary, changes to the program may be made.

Based upon the reporting data collected from grant-funded agencies, HSD reserves the right to reduce or stop funding if a subrecipient has shown a failure to adhere to the grant's requirements.

High-visibility enforcement (HVE) strategies

As required by NHTSA, Massachusetts is providing information regarding planned High-Visibility Enforcement activities for FFY 2022.

Planned HVE strategies to support national mobilizations:

Countermeasure Strategy
High Visibility Enforcement
Short-term, High Visibility Seat Belt Law Enforcement

HVE planned activities that demonstrate the State's support and participation in the National HVE mobilizations to reduce alcohol-impaired and/or drug-impaired operation of motor vehicles, distracted driving, and increase the use of seat belts by occupants of motor vehicles:

Unique Identifier	Planned Activity Name
AL-21-02	MSP and Local Police Sobriety Checkpoints & Saturation Patrols
DD-21-02	MSP Distracted Driving Enforcement
PT-21-06	Municipal Road Safety (MRS)
SC-21-02	MSP Speed Enforcement
OP-21-02	MSP Occupant Protection CIOT Enforcement

Appendix C: Equity in Traffic Safety

According to the U.S. Department of Transportation, adverse health effects related to the transportation system can fall hardest on vulnerable community members, such as low-income residents, minorities, children, persons with disabilities, and older adults. Households in low-income areas typically own fewer vehicles, have longer commutes, and have higher transportation costs.

Inadequate or substandard infrastructure in low-income and minority communities can prevent people from using public transit or personal vehicles and make walking and biking unsafe for those relying on these modes of transportation. This impact can lead to higher incidences of crashes involving pedestrians and cyclists.

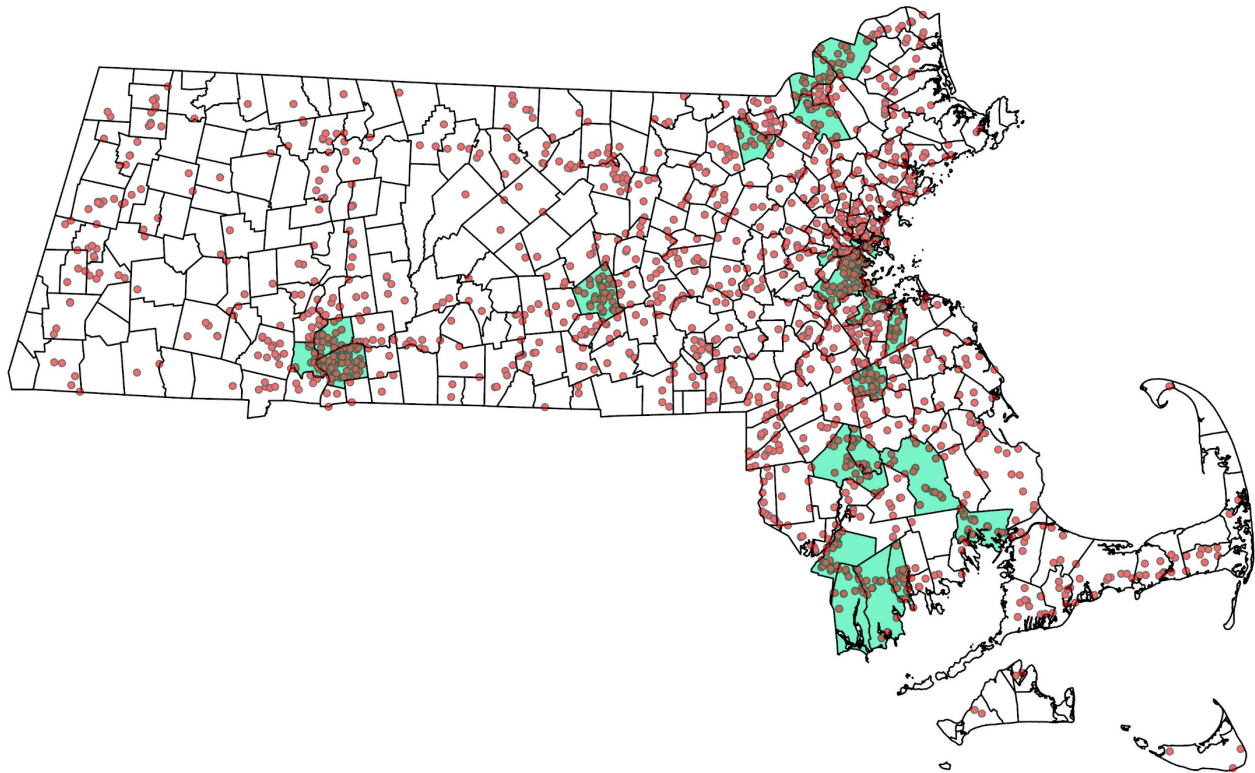
Transportation equity ensures all community residents can access and utilize all transportation modes safely and effectively on a day-to-day basis. This lack of equity can come from an unequal or uneven appropriation of resources and funding across a community. With this inequity comes the increased dangers for users of the roadways within the underserved community.

For the FFY 2022 HSP, NHTSA wanted states to investigate transportation equity and its relation to the programs and funding planned for the upcoming FFY. The overarching goal of OGR-HSD is to reduce the number of fatalities on the roadways of Massachusetts down to zero. This equity analysis will focus on the top towns for deaths as a starting point to identify possible underserved communities.

In the last five years (2016 - 2020), the total traffic fatalities for each of the 351 communities in Massachusetts were listed in high-to-low order. Once in descending numerical order, the towns that accounted for a third (33%) of all traffic fatalities were selected. These twenty towns represented 28% of the total population of Massachusetts (1.9 million of 6.9 million). While a higher percentage of all traffic fatalities could have been covered, examining a third of all fatalities provides a sample size that represents the cities and towns across the state.

City	Total Traffic Fatalities	City	Total Traffic Fatalities
BOSTON	110	TAUNTON	19
SPRINGFIELD	72	WEST SPRINGFIELD	17
WORCESTER	44	HAVERHILL	17
BROCKTON	41	METHUEN	17
FALL RIVER	32	WESTPORT	17
QUINCY	28	DARTMOUTH	17
CHICOPEE	25	WEYMOUTH	17
NEW BEDFORD	23	ANDOVER	17
MIDDLEBOROUGH	21	RAYNHAM	16
WAREHAM	20	CHELMSFORD	16

Below is a map showing the top twenty towns (light green fill) with all fatality locations from 2016-2020 represented by red dots.



The map shows that fatalities are more prevalent in eastern Massachusetts, with clustering of towns in northeastern and southeastern parts of the state and the state capital. Springfield, in western Massachusetts, is a hotbed of fatalities as it is where I-90 (Mass Pike) and I-91 (North/South) cross. The same situation with Worcester in the central part of the state as I-190, I-290, and Route 9 runs through the city.

Next, for each of the twenty communities, data related to income, race/ethnicity, and age were compiled. This data was taken from the U.S. Census website. These data elements help give a clearer picture of the underserved populations living within each municipality listed. The data elements are as follows:

- Median Household Income
- Percent in Poverty
- Racial Breakdown by Percentage (Black, Asian, Latino/Hispanic)
- Percent Another Language Spoken at Home
- Percent of Population under Age 18
- Percent of Population Age 65 or older

The next page lists twenty towns sorted into order by the lowest median household income to highest median household income and the other measures mentioned above.

The median household income is a meaningful measure of traffic safety within a community. The five highest median income towns (Andover, Chelmsford, Raynham, Weymouth, Dartmouth) were among the

City	Population Estimate (2019)	Total Traffic Fatalities	Median Household Income	Percent in Poverty	Percent Black	Percent Asian	Percent Latino	Percent Other Language Spoken at Home	Percent Under Age 18	Percent Age 65 or older
SPRINGFIELD	153,606	72	\$39,432.00	26.9%	20.9%	2.7%	45.0%	39.1%	24.8%	12.6%
FALL RIVER	89,541	32	\$43,503.00	19.7%	5.9%	1.9%	10.5%	36.4%	20.7%	16.6%
NEW BEDFORD	95,363	23	\$46,321.00	20.3%	7.0%	1.5%	20.8%	36.8%	22.9%	15.1%
WORCESTER	185,428	44	\$48,139.00	20.0%	13.3%	7.4%	21.9%	34.6%	18.8%	13.6%
CHICOPEE	55,126	25	\$53,225.00	13.8%	5.2%	2.4%	21.0%	21.5%	20.0%	18.4%
WEST SPRINGFIELD	28,517	17	\$55,053.00	11.3%	3.2%	4.0%	10.6%	22.1%	20.4%	15.9%
BROCKTON	95,708	41	\$58,469.00	14.8%	45.6%	2.0%	11.1%	46.7%	25.0%	13.1%
TAUNTON	57,464	19	\$62,865.00	14.2%	8.8%	1.9%	9.0%	20.9%	22.6%	15.1%
WAREHAM	22,745	20	\$65,825.00	10.4%	2.7%	0.6%	3.6%	7.7%	18.0%	21.2%
HAVERHILL	64,014	17	\$69,426.00	12.5%	3.6%	1.3%	23.2%	21.9%	23.1%	12.7%
BOSTON	692,600	110	\$71,775.00	18.9%	25.2%	9.7%	19.8%	37.7%	15.9%	11.5%
METHUEN	50,706	17	\$77,484.00	9.2%	4.3%	4.1%	29.5%	36.1%	20.9%	16.0%
QUINCY	94,470	28	\$77,562.00	11.3%	5.1%	30.4%	3.1%	38.7%	14.6%	16.7%
WESTPORT	16,034	17	\$79,895.00	5.8%	0.1%	0.2%	1.7%	14.7%	17.3%	25.4%
MIDDLEBOROUGH	25,463	21	\$83,631.00	7.3%	1.7%	0.9%	2.4%	3.8%	19.1%	18.9%
DARTMOUTH	34,188	17	\$84,220.00	6.8%	3.2%	2.5%	3.1%	19.1%	15.3%	20.3%
WEYMOUTH	57,746	17	\$84,942.00	6.0%	5.6%	6.8%	3.8%	15.6%	17.9%	17.9%
RAYNHAM	14,470	16	\$100,938.00	5.5%	1.7%	0.9%	2.0%	6.7%	21.1%	18.8%
CHELMSFORD	35,391	16	\$116,111.00	3.6%	0.9%	9.2%	3.3%	14.0%	20.7%	18.8%
ANDOVER	36,356	17	\$151,334.00	4.1%	2.7%	14.7%	4.9%	20.3%	24.2%	14.8%

towns with the lowest total fatalities. These five towns had average total fatalities of 17. In contrast, the five lowest median income towns (Springfield, Fall River, New Bedford, Worcester, Chicopee) had an average total fatality of 39.

The chart below compares the average for each data element between communities with \$60,000 or less median income to communities with \$80,000 or more in median income to get a better sense of the difference across the data elements that income impacts.

Median Income of Community	Number of Towns	AVG Fatais	AVG Poverty	AVG Pct Black	AVG Pct Asian	AVG Pct Latino	AVG Other Language Spoken	AVG Percent Under 18	AVG Percent 65+
60k or less	7	36	18%	14.4%	3.1%	20.1%	33.9%	21.8%	15.0%
80k or more	6	17	6%	2.6%	5.8%	3.3%	13.3%	19.7%	18.3%

The municipalities with a median income of \$60,000 or less had double the average fatalities than towns with \$80,000 or more median income. Elsewhere, except for Asians and 65+, the median income communities with \$60,000 or less had a much higher average than the \$80,000 or higher towns.

Based on the evidence presented thus far, the lower median income communities have a much higher level of traffic fatalities, poverty, minority population, and other language spoken in the home compared to higher median income towns. These low-income communities are the ones in the most need of funding involving traffic safety programs. To gauge if OGR-HSD has been funding these high-risk/low-income cities more than lower-risk/higher-income towns, the amount of funding across three popular local police enforcement grant programs for FFY 2018, FFY 2019, and FFY 2020 were calculated for each town.

City	Total TE Funding Awarded FFY18 - FFY20	Total Ped/Bike Funding FFY18 - FFY20	Total STEP Funding FFY18 - FFY20	Total Funding FFY18-20
SPRINGFIELD	\$ 221,503	\$ 6,000	\$ 190,851	\$ 418,354
FALL RIVER	\$ 44,800	\$ 12,100	\$ 113,706	\$ 170,606
NEW BEDFORD	\$ 44,800	\$ 19,625	\$ 78,134	\$ 142,559
WORCESTER	\$ 216,798	\$ 13,625	\$ 186,632	\$ 417,055
CHICOPEE	\$ 37,000	\$ -	\$ 86,527	\$ 123,527
WEST SPRINGFIELD	\$ -	\$ -	\$ -	\$ -
BROCKTON	\$ 43,200	\$ 5,640	\$ 116,383	\$ 165,223
TAUNTON	\$ 32,950	\$ 16,750	\$ 124,090	\$ 173,790
WAREHAM	\$ -	\$ -	\$ -	\$ -
HAVERHILL	\$ 42,196	\$ 19,292	\$ -	\$ 61,488
BOSTON	\$ 233,965	\$ 14,000	\$ 155,985	\$ 403,950
METHUEN	\$ 34,120	\$ 18,727	\$ -	\$ 52,847
QUINCY	\$ 43,200	\$ 19,625	\$ 124,090	\$ 186,915
WESTPORT	\$ 25,705	\$ 5,931	\$ -	\$ 31,636
MIDDLEBOROUGH	\$ 4,800	\$ -	\$ -	\$ 4,800
DARTMOUTH	\$ 30,950	\$ 5,625	\$ -	\$ 36,575
WEYMOUTH	\$ 37,000	\$ 8,966	\$ -	\$ 45,966
RAYNHAM	\$ -	\$ -	\$ -	\$ -
CHELMSFORD	\$ -	\$ 8,750	\$ -	\$ 8,750
ANDOVER	\$ 31,963	\$ 3,735	\$ -	\$ 35,698

From FFY 2018 to FFY 2020, OGR-HSD had funded at least one program for all but three of the top twenty communities for traffic fatalities from 2016 to 2020. The three that did not receive funding is likely due to either:

- (1) The town (police department) did not apply for traffic enforcement or pedestrian/bicyclist enforcement funding.
- (2) The town did not qualify for STEP (Sustained Traffic Enforcement Program) due to low fatalities, low fatality rate, or a low number of serious injury crashes.

It must also be pointed out that these three communities - West Springfield, Wareham, and Raynham - would not be considered high-risk, low-income places. The average number of fatalities across the three towns is 17. While West Springfield has a median income of \$55,053, the total percentage of minorities (black/Asian/Latino) and percent in poverty is the lowest among the seven municipalities with a median income of \$60,000 or less. Wareham and Raynham had a minority total of 6.9% and 4.6%, respectively, and the percent in poverty was 10.4% and 5.5%, respectively.

Using the \$60,000 or less and \$80,000 or more communities as a point of comparison again:

Median Income of Community	AVG Total Funding FFY18 - FFY20
60k or less	\$ 205,332
80k or more	\$ 21,965

The difference in funding is stark between the two median income groups. The \$60,000 or less group of towns received funding over nine times what went to the communities with \$80,000 or more median income.

The key takeaway from this initial equity analysis is that OGR-HSD has worked hard to ensure communities in need and at the lower end of the median income scale receive funding to help improve traffic safety and reduce traffic fatalities.

References

Cover page image source: Photo by [Cameron Venti](#) on [Unsplash](#)

Data Sources used throughout this report:

FARS (Fatality Analysis Reporting System) data located at <https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars>

MassDOT (Department of Transportation) data at <https://apps.impact.dot.state.ma.us/cdp/home>

FHWA (Federal Highway Administration) data at <https://www.fhwa.dot.gov/policyinformation/statistics.cfm>

U.S. Census data at <https://www.census.gov/quickfacts/fact/table/US/PST045219>

Merit Rating Board (MRB) provided data related to State and local police violations issued in Massachusetts. There is no online data location, as the data is issued internally.

FARS data were used for all fatality-related data provided in this report. MassDOT was used for serious injury data, and FHWA was primarily for Vehicle Miles Traveled (VMT), vehicle registration, and lane miles data. U.S. Census data was used for population figures.