



## **Connecticut Strategic Highway Safety Plan Implementation Phase Report**

January 2025

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Connecticut Department of Transportation

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<b>Contents .....</b>	<b>Error! Bookmark not defined.</b>
<b>Executive Summary .....</b>	<b>3</b>
<b>Acronyms and Abbreviations .....</b>	<b>4</b>
<b>1. Introduction .....</b>	<b>5</b>
1.1 SHSP Mission, Vision, & Goal.....	5
1.2 SHSP Leadership Structure .....	5
1.3 SHSP Implementation Phase Timeline .....	6
<b>2. Data Analysis Overview.....</b>	<b>7</b>
2.1 Safe System Approach, Traffic Safety Culture, Equity Considerations .....	7
2.2 Trend Analysis .....	7
2.2.1 Overall SHSP Goal.....	7
2.2.2 EA & ASA Crash Proportions .....	8
2.3 Historical Trend Analysis: Highway Safety Improvement Program (HSIP) Funding .....	8
2.4 Historical Trend Analysis: Highway Safety Plan (HSP) Funding .....	15
<b>3. Implementation Recommendations for a Five-Year Plan .....</b>	<b>20</b>
3.1 EA & ASA Team Recommendations.....	20
3.1.1 Pedestrian EA .....	21
3.1.2 Infrastructure EA .....	23
3.1.3 Behavioral EA .....	27
3.1.4 Additional Safety Areas .....	33
3.2 Steering Committee Endorsement .....	34
3.3 Executive Committee Endorsement.....	34
<b>4. Current Programs and Identified Gaps .....</b>	<b>35</b>
4.1 Current Projects and Programs .....	35
4.2 Identified Gaps .....	35
<b>5. Conclusion .....</b>	<b>35</b>
<b>Appendices .....</b>	<b>36</b>
<b>Appendix A: Implementation Tracking Databases .....</b>	<b>37</b>
<b>Pedestrian EA Implementation Tracking Database .....</b>	<b>37</b>
<b>Infrastructure EA Implementation Tracking Database .....</b>	<b>Error! Bookmark not defined.</b>
<b>Behavioral EA Implementation Tracking Database .....</b>	<b>Error! Bookmark not defined.</b>
<b>ASA Implementation Tracking Database .....</b>	<b>37</b>
<b>Appendix B: Executive Committee Questions and Comments.....</b>	<b>38</b>

## Executive Summary

This document provides an outline and summarization of the goals and outputs of the Implementation Phase of the 2022-2026 Connecticut (CT) Strategic Highway Safety Plan (SHSP) along with strategy recommendations to implement over the next five years.

Since the publication of the 2022-2026 CT SHSP in May 2022, the SHSP teams comprised of safety stakeholders with diverse backgrounds met regularly to prioritize implementation of the strategies from the plan. At each meeting, data trends were presented to assist with data driven decisions. Time was provided for open discussion to assess the strategies from the plan, ongoing strategies being implemented, as well as strategies recommended from other plans, such as the Regional Transportation Safety Plans (RTSP), Highway Safety Improvement Program (HSIP) Implementation Plans, and Highway Safety Plans (HSP). Challenges and barriers to overcome for successful implementation were also noted during discussions.

The teams used a Safe System Approach (SSA) as a basis for the recommendations and considered traffic safety culture principles, and equity. The Connecticut Road Safety Summit in May 2024 allowed for additional stakeholders to share their thoughts and ideas on strategies and implementation prioritization. All the strategies discussed, as well as prioritization and time frames for implementation, can be found in the tracking databases in the appendices of this report.

The CT SHSP provides the framework to collaborate and prioritize safety needs and investments with focus on three Emphasis Areas (EAs), and the Additional Safety Areas (ASA). This SHSP Implementation Plan will be used to assist Connecticut to achieve its goal of reducing fatalities and serious injuries on all public roads and the vision that all users of Connecticut's transportation system will arrive safely to their destinations.

## Acronyms and Abbreviations

A	Serious Injury (Crash)
ASA	Additional Safety Area
CCSU	Central Connecticut State University
CMV	Commercial Motor Vehicle
COG	Council of Government
CSP	Connecticut State Police
CTDOT	Connecticut Department of Transportation
DUI	Driving Under the Influence
EA	Emphasis Area
EC	Executive Committee
FHWA	Federal Highway Administration
HFST	High Friction Surface Treatment
HSIP	Highway Safety Improvement Program
HSO	Highway Safety Office
HSP	Highway Safety Plan
K	Fatal (Crash)
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
RRFB	Rectangular Rapid Flashing Beacon
RTSP	Regional Transportation Safety Plan
SC	Steering Committee
SHSP	Strategic Highway Safety Plan
SSA	Safe System Approach
T2 Center	Connecticut Training and Technical Assistance Center
TE3	CTDOT Transportation Engineer III
VIP	Vendor-in-Place paving projects

# 1. Introduction

## 1.1 SHSP Mission, Vision, & Goal

In May of 2022, the 2022 – 2026 Connecticut SHSP was published. During the subsequent implementation phase of the CT SHSP, safety stakeholder collaboration was facilitated to support the mission of the SHSP and to help Connecticut reach its vision and goal for the SHSP further emphasizing Connecticut's commitment Towards Zero Deaths (TZD):

- **Mission:** Provide safe transportation systems by building on partnerships to coordinate and implement safety strategies with consideration of the Safe System Approach, traffic safety culture principles, and equitable values.
- **Vision:** All road users of Connecticut's transportation system will arrive safely to their destinations, achieving zero deaths.
- **Goal:** Achieve a 15% reduction or more based on the five-year rolling average of fatalities and serious injuries on all public roads in Connecticut by 2026.

## 1.2 SHSP Leadership Structure

The leadership structure of the SHSP allows for engagement amongst diverse groups of stakeholders to ensure ideas are heard and recommendations received. Figure 1 outlines the CT SHSP leadership structure. There are three Emphasis Area (EA) Teams focused on Infrastructure, Behavior, and Pedestrian, along with the Additional Safety Areas (ASA) Team. Above these teams sits the Steering Committee (SC) and at the top is the Executive Committee (EC).

The EA and ASA teams are comprised of members of the broader SHSP stakeholder group, with representation from education, enforcement, engineering, and emergency services and beyond. For this implementation phase, strategies were vetted through these teams. Team meetings were held to discuss the performance objectives, data analyses and strategies. The strategies to achieve SHSP goals were prioritized and recommended to the Steering and Executive Committees.

The SC represents a smaller group of higher-level managers and members from many of the same stakeholder agencies/organizations and act as liaisons to EA and ASA Team members. The SC provides direction to the EA and ASA teams regarding their proposed strategies through assisting with strategic management and oversight to ensure the proposed SHSP strategies for implementation are consistent with state goals and processes as well as federal rules and regulations. The SC is also the liaison to the EC.

The EC is comprised of the Commissioners of the Departments of Transportation, Motor Vehicles, Public Health, Education, and Emergency Services and Public Protection. The EC reviews recommendations from the SC and makes decisions on proposed approaches along with endorsing the EA and ASA team efforts. It also provides high-level coordination and oversight for policy, legislation, and agency collaboration, and plays an integral role in establishing and maintaining a statewide safety culture in Connecticut.

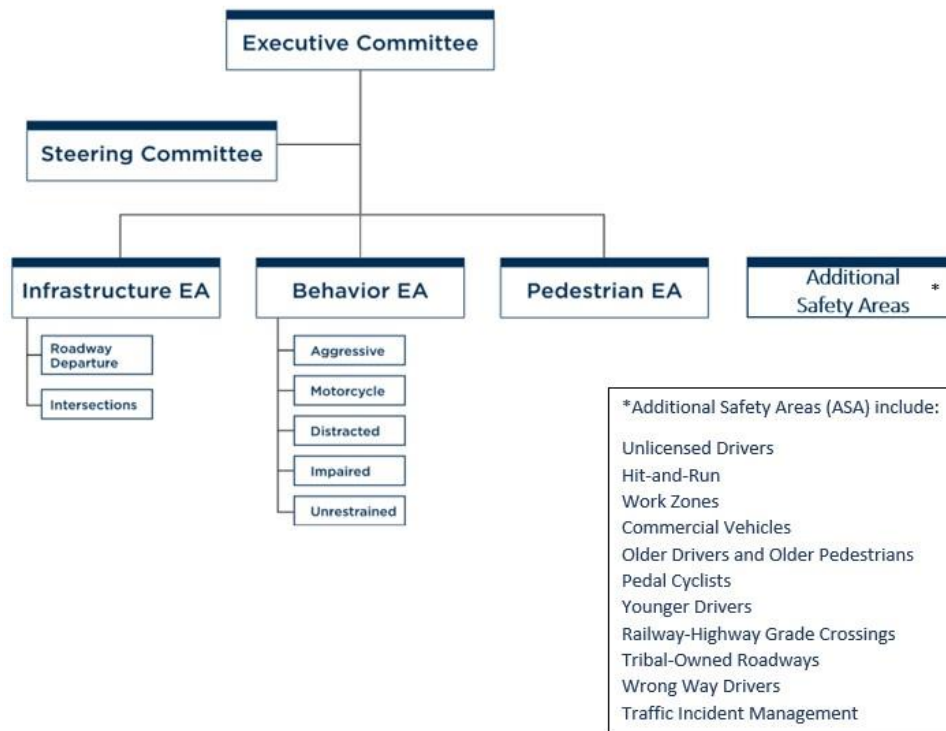


Figure 1. SHSP Leadership Structure

### 1.3 SHSP Implementation Phase Timeline

The SHSP committee meetings took place over the course of the Implementation Phase of the SHSP. Outlined in Figure 2 is a timeline of meetings from May 2023 through August 2024. The ASA Team and EC met twice, the SC met three times, and the EA Teams met four times to allow for collaboration and coordination to help implement the strategies in the SHSP.

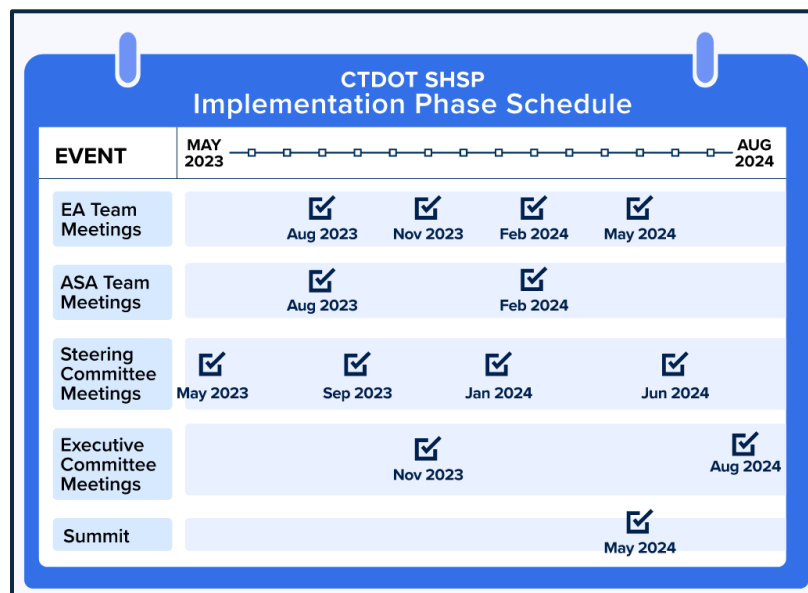


Figure 2. Timeline of SHSP Implementation Phase Meetings

## 2. Data Analysis Overview

### 2.1 Safe System Approach, Traffic Safety Culture, Equity Considerations

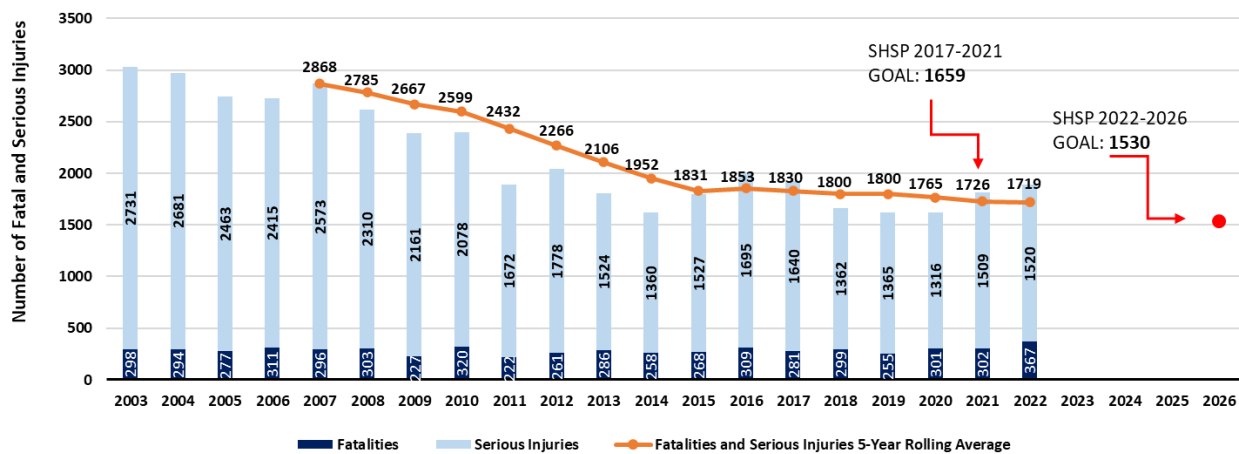
Key considerations for the Implementation Phase of the SHSP included integrating the principles of the Safe System Approach (SSA), promoting traffic safety culture, and providing equity considerations while emphasizing the mission, vision, and goal of the SHSP. These metrics were integrated into the data analysis through gathering fatal (K) and serious injury (A) crash data from the Connecticut Crash Data Repository to evaluate progress toward meeting the SHSP objectives as well as identifying crash trends in Connecticut to guide prioritization of strategy implementation.

### 2.2 Trend Analysis

#### 2.2.1 Overall SHSP Goal

The overarching goal of the Connecticut SHSP is to achieve a 15% reduction or more of fatal and serious injury crashes based on the five-year rolling average from 2022 to 2026, with the current goal at 1,530 or less by 2026. Figure 3 shows the trend of fatal and serious injury crashes from 2003 to 2022. Overall, the five-year rolling average of fatal and serious injury crashes in Connecticut has declined from 2007 to 2022, with a slight spike in 2016. The goal of 1,659 from the 2017-2021 SHSP was not achieved. It will take shared responsibility, a proactive approach and many other SSA strategies to help achieve and surpass the 2022 – 2026 SHSP goal.

Figure 3. Connecticut Fatal and Serious Injury Crashes & SHSP Goals (2003 – 2022)



Source: Connecticut Crash Data Repository

## 2.2.2 EA & ASA Crash Proportions

The EA crash proportions based on the analysis of fatal and serious injury crashes in Connecticut from 2018-2022 are outlined in Figure 4, with the highest percentage of fatalities starting from the left. Roadway departure, aggressive driver, and impaired driver crashes account for the highest percentages of fatalities and serious injuries. It is to be noted the crash percentages in Figure 4 add up to greater than 100% since many EAs and ASAs overlap, as crashes can be caused by multiple factors.

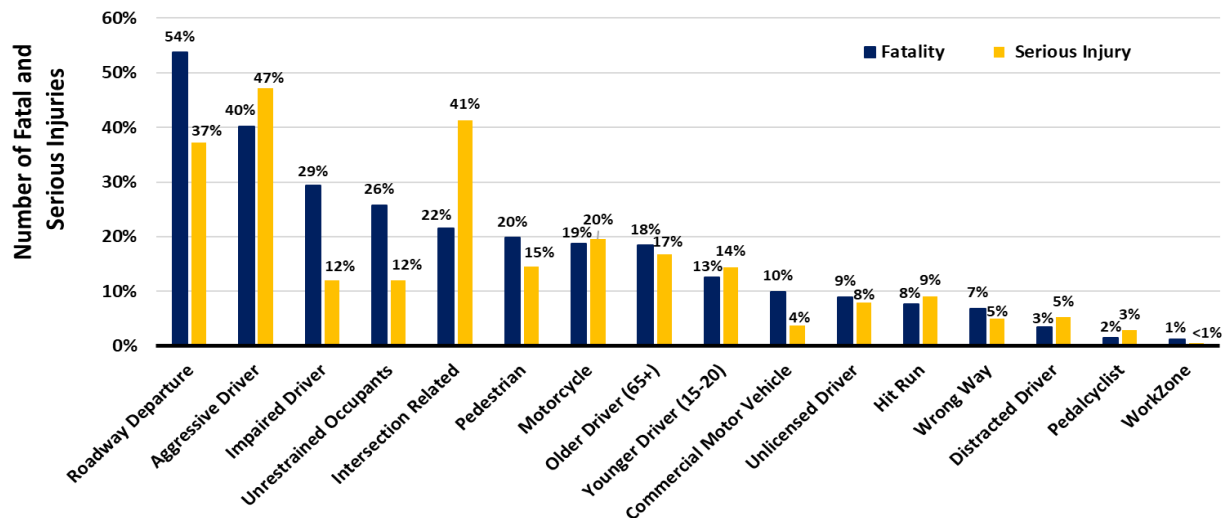


Figure 4. EA Crash Proportions (2018 - 2022)

## 2.3 Historical Trend Analysis: Highway Safety Improvement Program (HSIP) Funding

The SHSP is used to help guide investment decisions made during the Highway Safety Improvement Program (HSIP) process, ensuring allocation goes toward projects that focus on safety countermeasures that support the SHSP goal of reducing fatalities and serious injuries on all public roads. The following subsections present the historical investment planning and allocations of HSIP funding based on the HSIP Annual Reports (obligated funds) categorized by Emphasis Area, Systemic vs. Spot projects, and Local vs. State Jurisdiction projects and detailed analysis of Infrastructure and Pedestrians EAs.

Prior analysis revealed that HSIP funding is predominantly allocated to two key areas: infrastructure improvements (focusing on intersection-related and roadway departure projects) and pedestrian safety initiatives. Given the significant investment in these critical safety domains, the following subsections provide a detailed examination of how these funds are distributed and the specific types of projects they support.



## HSIP Funding by Emphasis Area

HSIP funding allocations reflect the program's commitment to addressing both established and emerging safety priorities while maintaining alignment with SHSP goals. Infrastructure improvements consistently receive the highest funding allocation priority across historical HSIP investments, as shown in Figure 5. The completed HSIP Annual Report (2020-2022) indicates significant investment in Safety Data Initiatives as the second-highest priority. Marginal percentages of funding are allocated to Behavioral and ASAs, although the state's HSP includes funding for robust highway safety programs targeting driver behavior and many of the ASAs, which is why only a small amount of HSIP funds are allocated to these areas.

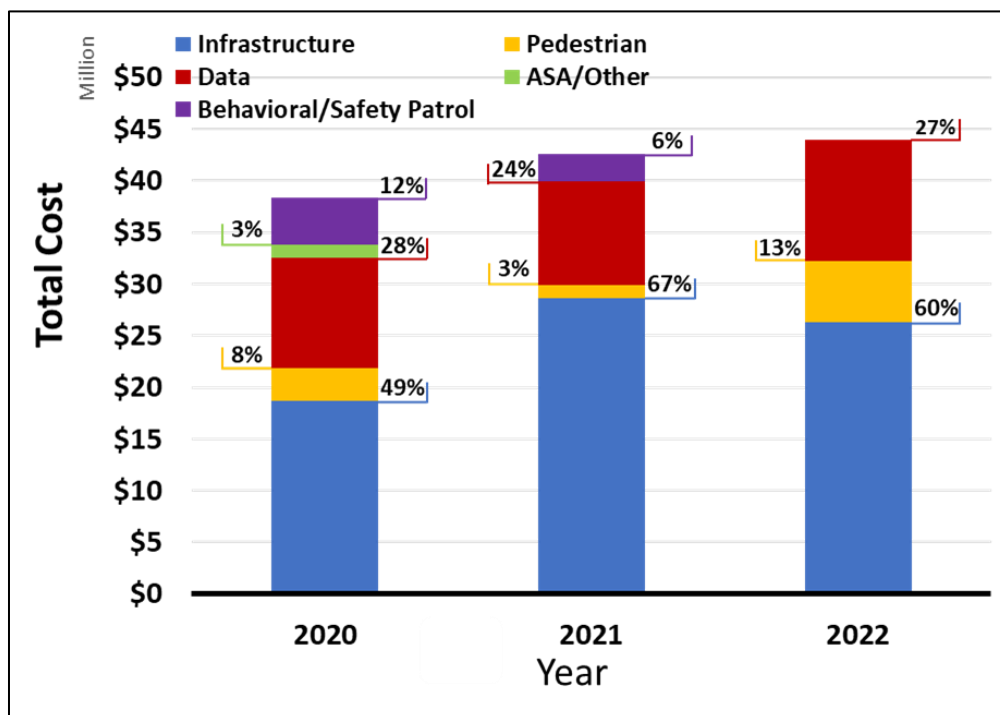


Figure 5. HSIP Annual Report Funding by Emphasis Areas

## HSIP Funding of Systemic vs. Spot Projects

A notable shift in HSIP investment strategy emerges when examining the balance between systemic and spot improvement approaches, reflecting an evolution from reactive to proactive safety measures. This transition is particularly evident as systemic improvements, which address multiple locations with similar risk factors, have gained prominence over traditional spot improvements that target specific high-crash locations, as shown in Figure 6.

The transformation in funding allocation from 2020 to 2022 reveals a fundamental reimagining of safety infrastructure investment. In 2020, the program balanced its approach with 45% in Spot Improvements and 28% in Data/Planning/Training. While 2021 saw a temporary surge in Spot Improvements to 59%, the dramatic shift in 2022 to 93% Systemic Improvements signifies more than a mere change in spending patterns – it represents a sophisticated evolution toward preventive safety management. This new approach recognizes that addressing similar risk factors systematically across the transportation network, rather than waiting for crash data to identify hot spots, can yield more comprehensive and cost-effective safety benefits.

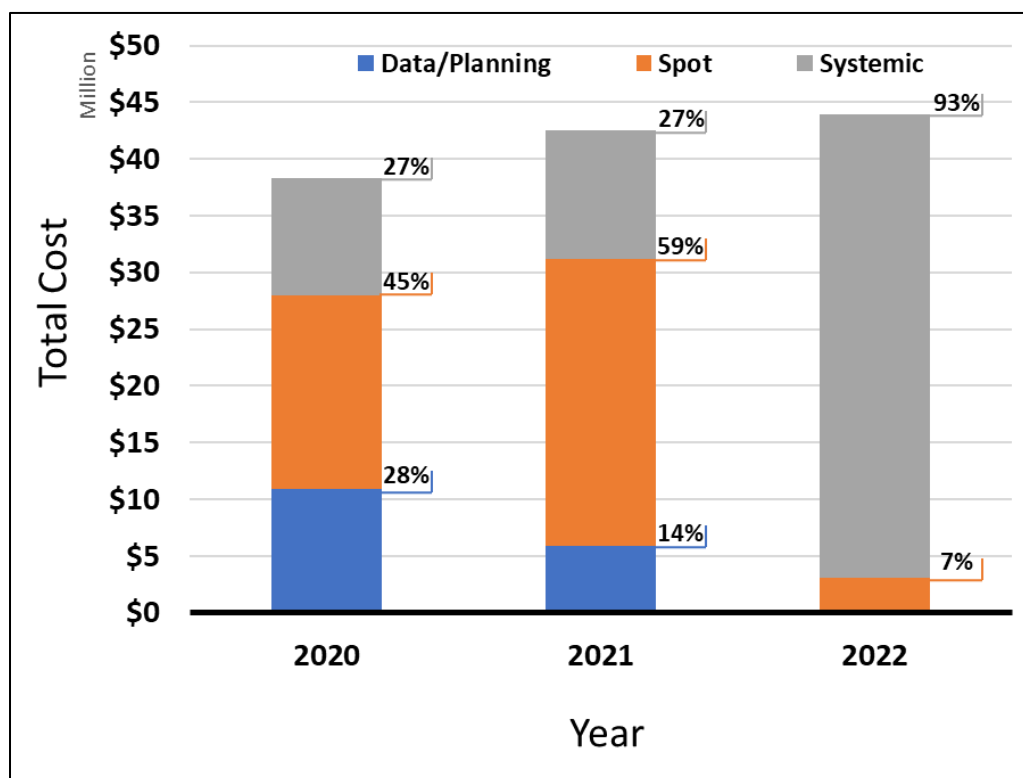


Figure 6. HSIP Annual Report Fundings by Systemic vs. Spot Improvement Projects

## HSIP Funding of Local vs. State Jurisdiction Projects

The distribution of HSIP investments between local and state projects reveals how safety improvements are obligated across different jurisdictional levels. As illustrated in Figure 7, from 2020 to 2022, State Jurisdiction project funding increased, while Local Jurisdiction projects and Data/Planning initiatives funding did not. In 2020, the percentage of HSIP obligations was 47% State, 25% Local, and 28% Data/Planning/Training projects while in 2021, the state funding increased to 82% and in 2022 the state funding was 100%. The local jurisdiction funding obligations during this period were mainly to initiate planning studies. These studies are ongoing and necessary to gather more data and lessons learned to determine local systemic projects to be programmed in the future. Although not depicted in Figure 7, obligated funding in 2023 to local jurisdictions was 8%. As more studies are completed, the percentage of HSIP obligations for projects under local jurisdiction will increase.

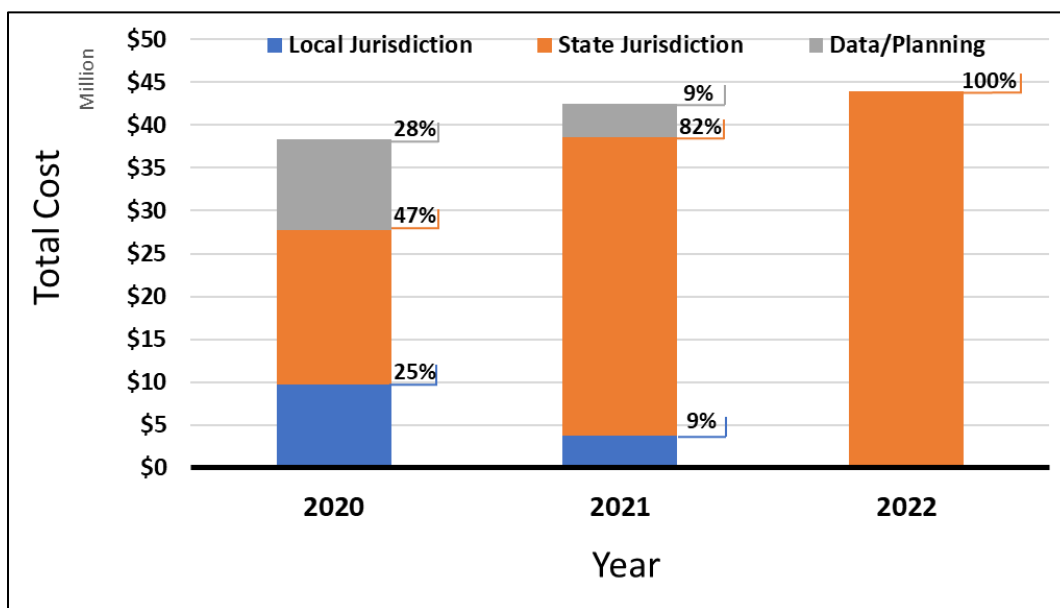


Figure 7. HSIP Annual Report Funding by Local vs. State Jurisdiction Projects

## Intersection-Related Project Obligations

Intersections represent critical points in the transportation network where multiple traffic movements converge, creating inherent conflict points that pose significant safety challenges for all road users. As these locations account for a substantial portion of severe injury crashes and fatalities, strategic investment in intersection safety improvements remains a key priority in transportation safety management.

Figure 8 provides a detailed breakdown from the HSIP Annual Report, showing yearly funding allocations for both local and state road Intersection-Related Projects along with their specific project types. This centralization of resources aligns with the implementation of diverse safety improvements, where Intersection Signing/Traffic Control (41.6%) and Traffic Control Modernization (36.3%) constitute a majority of the investments, reflecting a strategic focus on enhancing intersection safety through technological and infrastructural upgrades. The substantial investment in Roadway Widening (11.5%) and Active Grade Crossing Equipment (4.4%) further demonstrates a comprehensive approach to addressing intersection safety challenges. This distribution suggests a coordinated, state-level strategy that prioritizes systemic improvements in traffic control and management systems while maintaining flexibility for specific geometric and auxiliary lane modifications where needed.

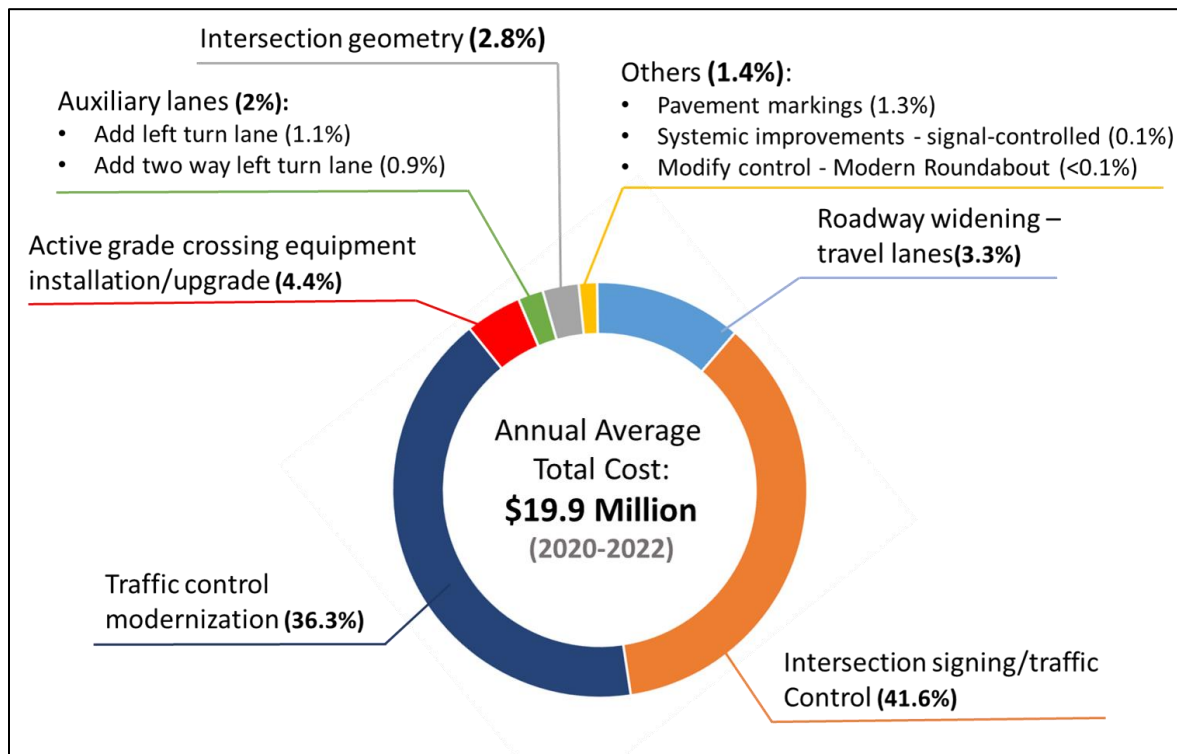


Figure 8. HSIP Annual Report (2020 -2022 annual average) Funding by Intersection-Related Projects

## Roadway Departure Project Obligations

Roadway departure crashes represent one of the most severe types of crashes on the transportation network which often result in serious injuries or fatalities, making them a critical focus area for safety improvements. Figure 9 provides a comprehensive view of HSIP investments in roadway departure safety projects, revealing specific countermeasure implementations. There is a strategic distribution of project types, where Pavement Surface Improvements with High-Friction Surfaces dominate the investments (45.9%), followed by Curve-Related Warning Systems (29%) and General Roadway Improvements (19.3%). The emphasis on high-friction surfaces and enhanced warning systems demonstrates a data-driven approach to addressing roadway departure crashes, focusing on both prevention through improved road surface characteristics and risk mitigation through advanced warning systems.

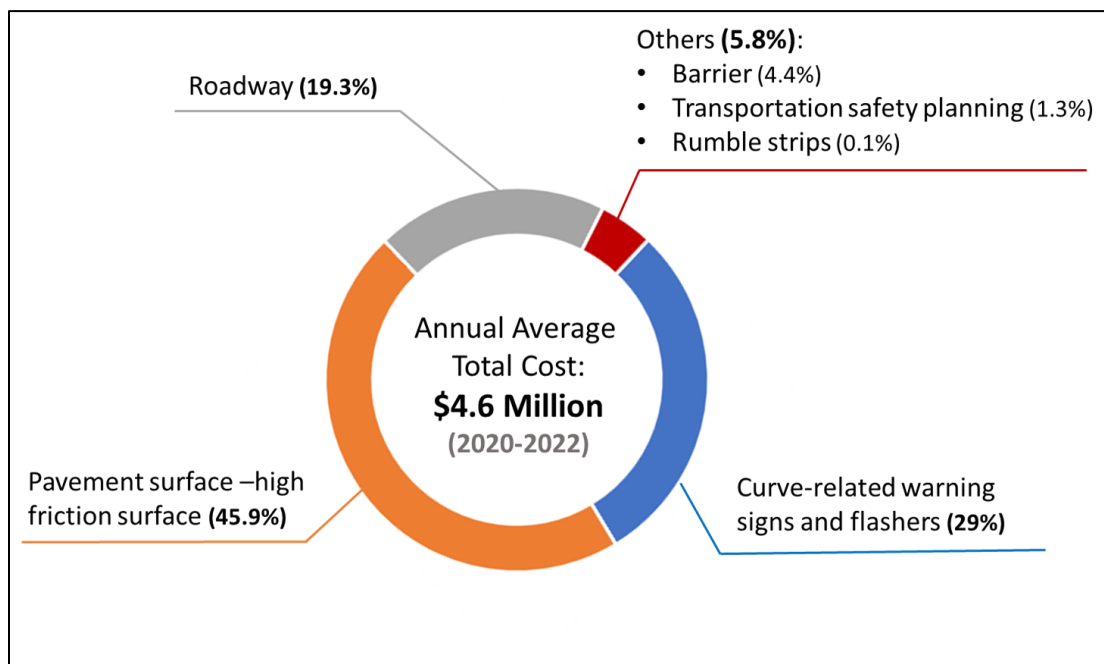


Figure 9. HSIP Annual Report (2020-2022 annual average) Funding by Roadway Departure Crashes

## Pedestrian Project Obligations

Pedestrian safety remains a critical concern in transportation planning, particularly as communities increasingly emphasize multimodal accessibility and sustainable transportation options. With vulnerable road users facing unique risks in the transportation system, targeted investments in pedestrian safety infrastructure play a crucial role in creating safer, more inclusive networks. Figure 10 illustrates a diverse portfolio of project types, where three main categories dominate the investments: Sign Sheeting Upgrades or Replacements (29.9%), Modifications to Existing Crosswalks (29.2%), and Rectangular Rapid Flashing Beacon (RRFB) installations (28.4%). The balanced distribution among these key countermeasures suggests a comprehensive approach to pedestrian safety, combining enhanced visibility through improved signage, safer crossing facilities, and active warning systems, with additional investments in Pedestrian Signals (8.2%) further supporting these multi-faceted strategies.

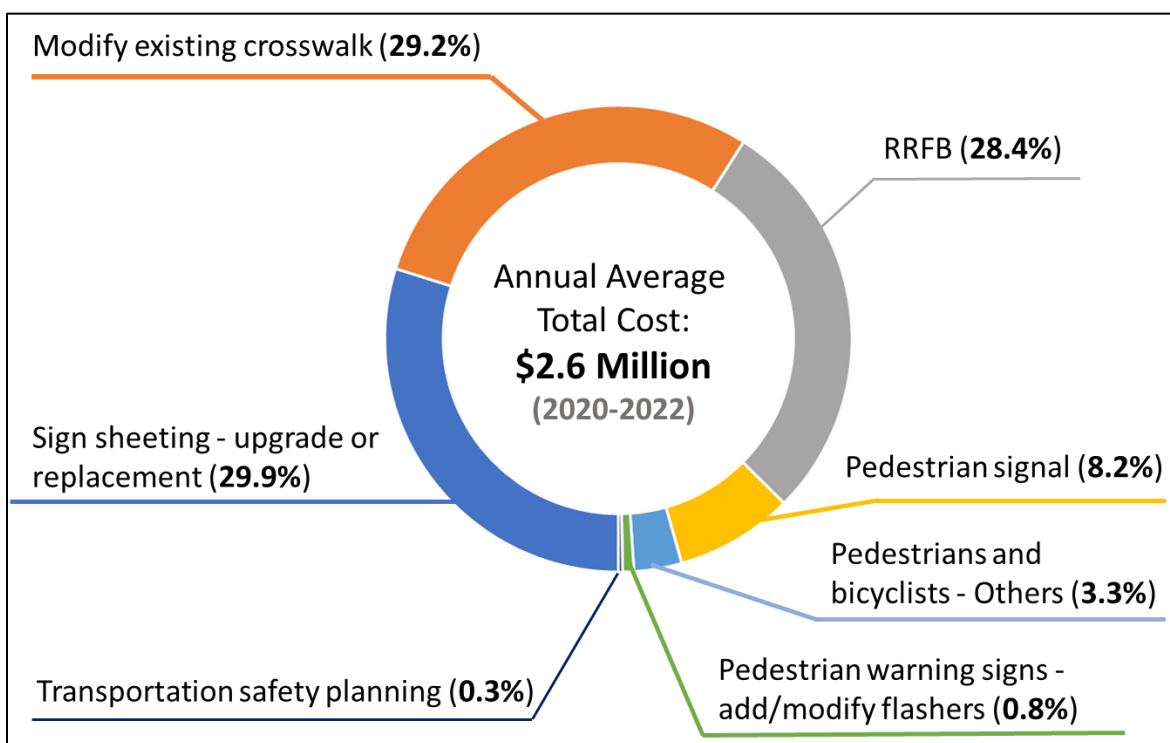


Figure 10. HSIP Annual Report (2020-2022 annual average) Funding by Pedestrian Projects

## 2.4 Historical Trend Analysis: Highway Safety Plan (HSP) Funding

Highway Safety Plans (HSPs) aim to prevent roadway fatalities and injuries that are a result of crashes related to driver behavior and are written as part of Connecticut's Highway Safety Program. Key programs included in HSPs focus on addressing traffic safety related to Impaired Driving, Occupant Protection, Child Passenger Safety, Distracted Driving, Police Traffic Services, Speed, Motorcycle Safety, Traffic Records, Driver Groups, Bicycle and Pedestrian Safety and Work Zone Safety. The yearly HSP plans are submitted to NHTSA and should be used in coordination with the HSIP Annual Reports to allow for complementary funding toward countermeasures and projects that improve safety, especially as they relate to driver behavior.

The following subsections elaborate on the historical investment planning and allocations of HSP funding based on the annual HSPs categorized by Total funding, then funding within the top four programs including Impaired Driving, Police Traffic Services, Distracted Driving, and Occupant Protection and Child Passenger Safety projects.

### Total HSP Funding

The figure below provides the annual average amount expended from 2021-2023 in total and percentage by project type. Approximately \$12.2 million dollars were expended annually from 2021 – 2023. As shown in Figure 11, majority of funding went toward Impaired Driving projects, followed by Police Traffic Services, and Occupant Protection and Child Passenger Safety.

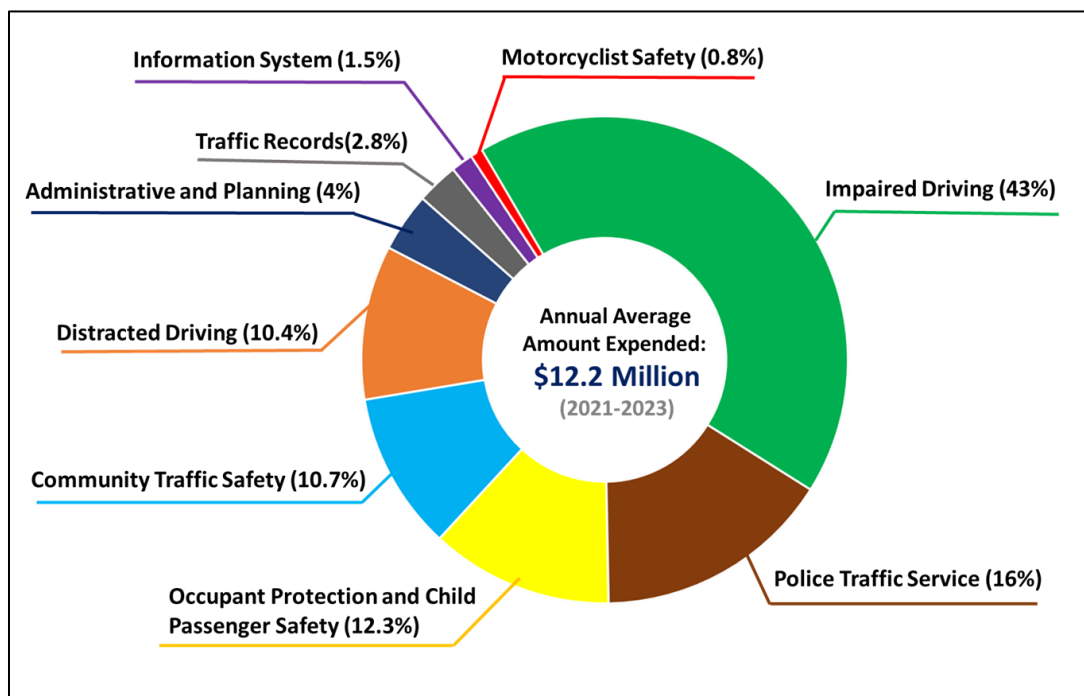


Figure 11. Amount Expended by HSP Project Type (2021 – 2023 annual average)

## HSP Funding of Impaired Driving Projects

To further break this down, for Impaired Driving countermeasures approximately \$5.3 million was expended annually during those three years. As shown in Figure 12, the largest investment (34.3%) was strategically directed to Media Campaigns, recognizing the powerful role of public communication in preventing impaired driving through DUI and cannabis awareness messaging. This was reinforced by balanced investments in Education and Awareness programs (18.3%) and Prevention and Enforcement initiatives (17.8%), creating a comprehensive approach that combines public outreach with active enforcement. Additional investments in Training and Support (14.3%), Administrative and Operational Support (10.2%), and Technology and Data management (5.1%) ensured program sustainability and evidence-based decision-making, reflecting a well-rounded strategy to combat impaired driving through prevention, enforcement, and systemic support.

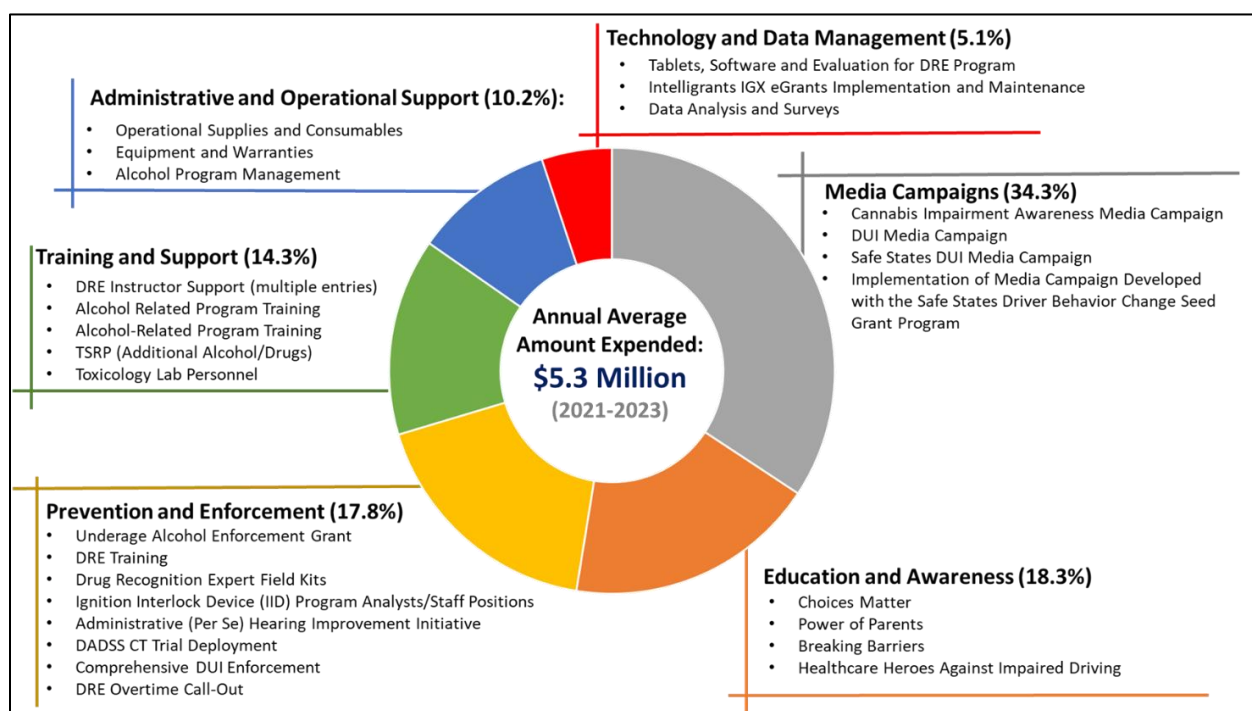


Figure 12. Amount Expended on HSP Impaired Driving Projects (2021 – 2023 annual average)



## HSP Funding of Police Traffic Services Projects

For Police Traffic Services Projects, an annual average of \$1.96 million from 2021 through 2023 was strategically allocated across several key initiatives. As shown in Figure 13, the largest portion (47.8%) was invested in Media Campaigns, encompassing Distracted Driving Awareness, HVE Speed Enforcement, and Holiday/Back-to-School Safety Messaging. This substantial media investment represents a proactive approach to traffic safety, aiming to prevent violations through public education and behavior modification before they occur. The second-largest allocation (28.9%) supported Racial Profiling Prohibition efforts, demonstrating a commitment to equitable law enforcement practices. Speed and Aggressive Driving Enforcement received 17.3% of the funding, targeting high-risk driving behaviors that often lead to severe crashes. This balanced distribution between educational campaigns, equitable enforcement practices, and targeted enforcement activities reflects a strategy that addresses both the behavioral and social aspects of traffic safety.

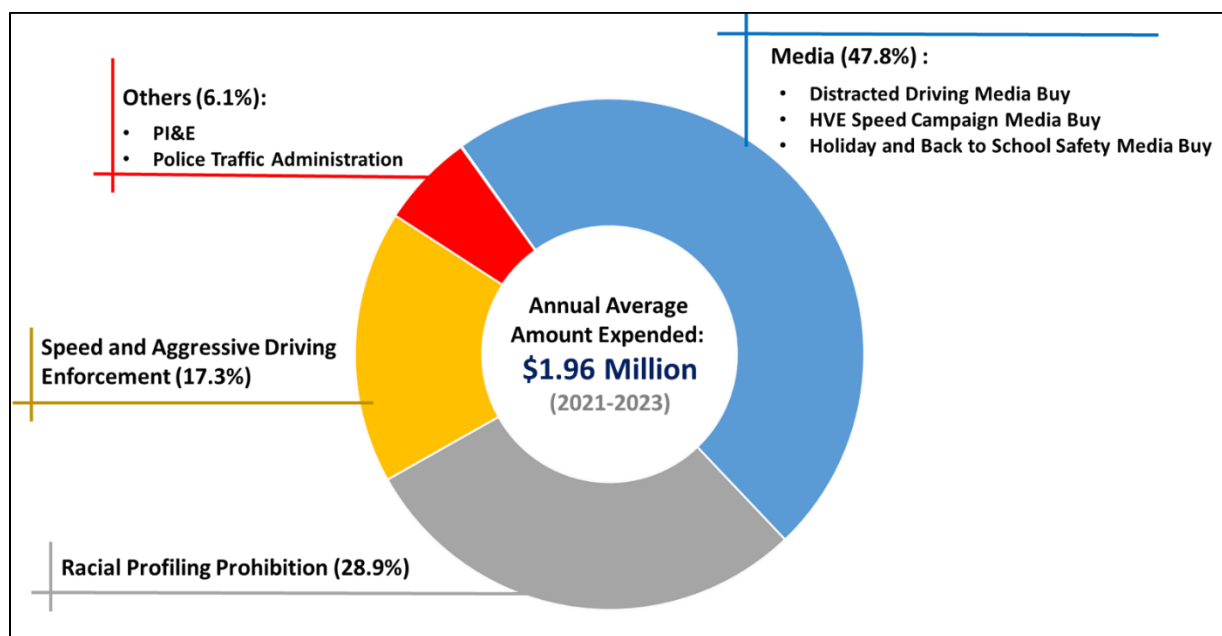


Figure 13. Amount Expended on HSP Police Traffic Service Projects (2021 – 2023 annual average)

## HSP Funding of Distracted Driving Projects

Distracted Driving projects saw an annual average expenditure of \$1.27 million dollars from 2021 through 2023. As shown in Figure 14, the funds were strategically balanced between immediate intervention through Enforcement (33.8%) and long-term behavioral change through Public Messaging Campaigns (28.2%). This dual approach recognizes that while enforcement provides immediate deterrence, education creates lasting cultural change in driving behavior. The substantial investment in Data Analysis and Surveys (26.3%) enables evidence-based deployment of enforcement resources and measures campaign effectiveness. Interactive initiatives like the Save a Life Tour (6.5%) and Drive Safe CT Media Partnership (5.2%) provide crucial personal impact through experiential learning and local engagement, particularly effective with younger drivers who are most at risk for distracted driving.

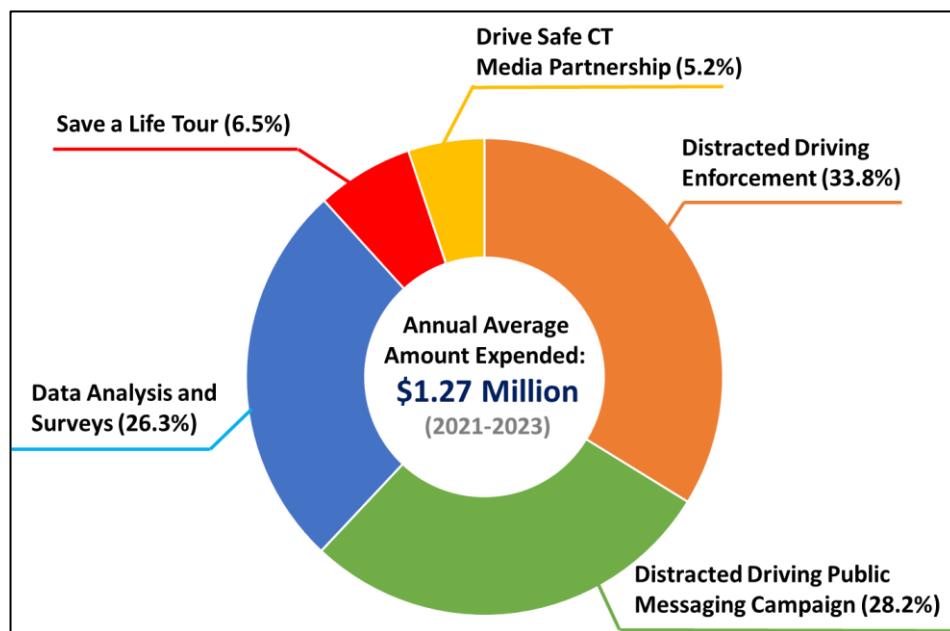


Figure 14. Amount Expended on HSP Distracted Driving Projects (2021 – 2023 annual average)

## HSP Funding of Occupant Protection and Child Passenger Safety Projects

Occupant Protection and Child Passenger Safety projects received an annual average expenditure of \$1.5 million dollars. As shown in Figure 15, the largest allocation (39%) went to Occupant Protection Programs, combining enforcement with innovative educational tools like rollover simulators to provide compelling, firsthand experiences of proper restraint use. The significant investment (33%) in Child Passenger Safety Programs reflects both the vulnerability of young passengers and the complexity of proper car seat use, with fitting stations addressing the critical gap between car seat ownership and correct installation. Community Traffic Safety Programs (21%) leverage local knowledge and relationships to create targeted, culturally relevant safety messages, while Data Analysis and Surveys (7%) enables continuous program refinement based on usage patterns and effectiveness. This multi-layered approach recognizes that improving occupant safety requires not just enforcement and education, but also addressing practical barriers to proper restraint use through hands-on assistance and community-based solutions.

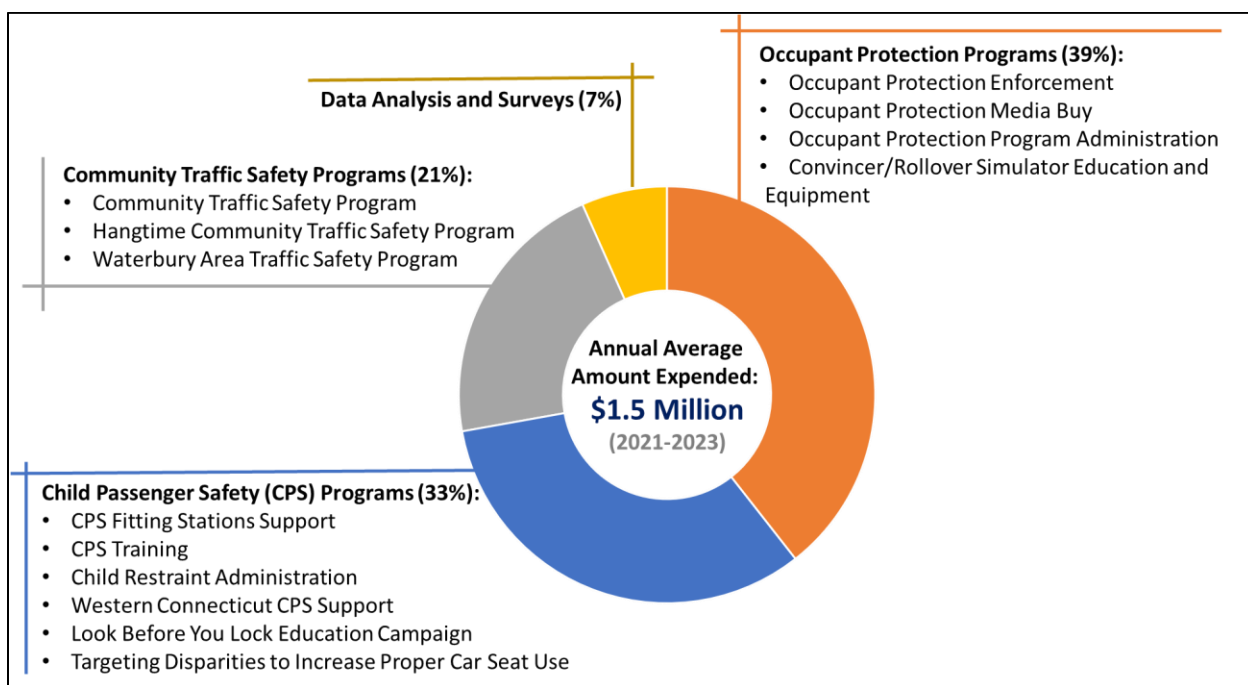


Figure 15. Amount Expended on HSP Occupant Protection and Child Passenger Safety Projects (2021- 2023 annual average)

### 3. Implementation Recommendations for a Five-Year Plan

#### 3.1 EA & ASA Team Recommendations

Outlined below are the implementation strategy recommendations supported by the EA and ASA teams. These strategies were brought forth to the Steering and Executive Committees for their endorsement. These recommendations are data driven and have been grouped based on EA, ASA and relative association with the key strategies outlined in the SHSP.

A description and the five-year rolling average goal for 2026 is given for each EA. The data is included through 2022 for the most comprehensive data as of the publication of this report. 2022 was one of the highest years of recorded fatal and serious injury crashes for Connecticut and much of the nation, with an increase in risky driving behavior noted as one of the main reasons for this trend increase. The data analyses presented to each EA and ASA team are summarized in each section. These data were used as a basis for discussion of strategies. For instance:

- The increase in pedestrian crashes just after dusk to help endorse illumination of crosswalks.
- Motorcycle crash data related to the percentage of helmet use to help endorse helmet legislation.

The strategies and initiatives discussed at EA and ASA team meetings and the Summit, including those outlined in HSIP Implementation Plans, in Connecticut's HSP, in Regional Transportation Safety Plans, and as recommended by the Vision Zero Council that overlap with key strategies outlined in the SHSP can be found in the respective Implementation Plan Tracking Databases linked in the Appendix. The Databases also include near- (1-2 years), mid- (2-4 years), and long-term (4+ years) expected implementation timelines to help guide planning and funding efforts at both the state and local levels. Barriers and challenges to implementation discussed by the teams are also noted for the strategies in the Databases and are summarized at the end of each EA section in this report.

### 3.1.1 Pedestrian EA

The Pedestrian crash type is based on the “person type” field in the crash report marked as “Pedestrian” or “Other Pedestrian (wheelchair, person in a building, skater, pedestrian conveyance).” The five-year rolling average goal of fatal and serious injury pedestrian crashes is 272 or less by 2026. As shown in Figure 16, pedestrian crashes decreased in 2020 and 2021, but a spike was seen in 2022, with the current rolling average just above the goal at 274 fatal and serious injury crashes.

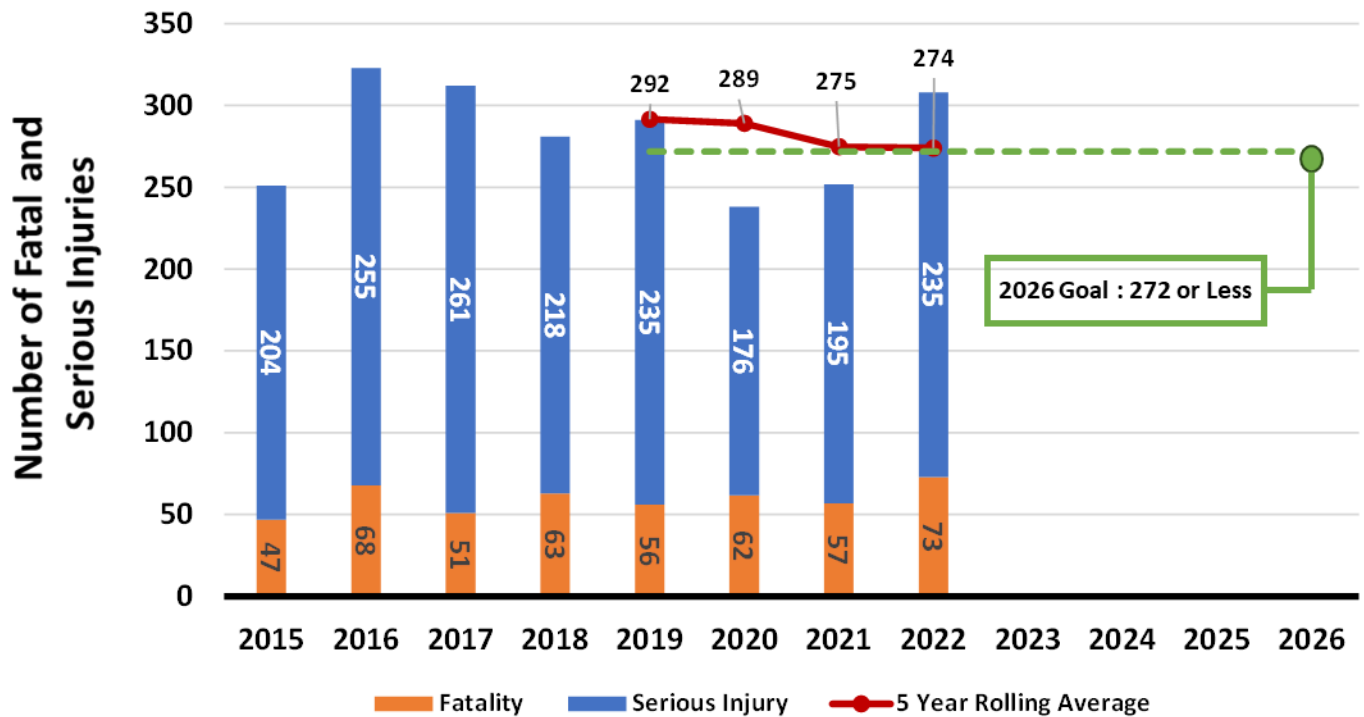


Figure 16. Trend of Fatal and Serious Injury Pedestrian Crashes by Year

With crashes more recently trending above the five-year rolling average Pedestrian EA SHSP goal, additional data analysis was performed to try to identify where and when pedestrian crashes are happening. Based on this data as well as ongoing discussion, Pedestrian EA Team members prioritized and recommended strategies for implementation. Some of the Pedestrian related data analysis included:

- Hot spot locations
- Overlaps with Intersection-related and Hit-and-Run crashes
- Location of crashes
- Hour of the day for weekdays and weekends for intersection-related pedestrian crashes
- Crashes by age and gender
- Pedestrian and driver actions
- Average annual pedestrian crashes per 100,000 population by COG and municipality
- Percentage of crashes for various vehicle body types
- Percentage of KA injuries for various vehicle maneuvers

- Percentage of injuries for older pedestrians (65+) and over representation of older pedestrian crashes by municipality
- Percentage of injuries per hour for each month of the year
- Percentage of injuries based on weather and road light condition
- Location of crashes at mid-block and intersection type
- Residential distribution of drivers based on driver zip code

The following recommended Pedestrian EA SHSP strategies for implementation focus on **reducing pedestrian exposure, integrating safe speeds, slowing vehicle strategies, and improving awareness for pedestrian safety**:

Near-Term Strategies:

- Continue to support Community Connectivity Grants.
- Increase support of Pedestrian Awareness Campaigns from the Highway Safety Office (HSO) and other advocacy groups/programs (Safe Routes to School, Watch for Me CT, Connecticut Bike/Ped Advisory Board, T2 Center).
- Continue conducting Road Safety Audits (RSAs) emphasizing pedestrian safety.
- Study the effectiveness of automated enforcement (speeding and red-light running) to provide additional guidance for municipalities and propose locations for future implementation.
- Increase the number of school zones with reduced regulatory speed limits.

Mid-Term Strategies:

- Complete a statewide network screening for locations where raised crosswalks and intersections should be prioritized, and program locations for raised feature installations.
- Retime yellow and red clearance intervals as part of the municipal traffic signal clearance interval project.
- Consider illumination installation at existing crosswalk locations on the state highway system via projects within the area, VIPs, and maintenance (DAS) contracts.
- Provide concurrent pedestrian phasing outreach and education.
- Provide pedestrian accessibility improvements and implementing upgrades per Connecticut's ADA Transition Plan.
- Evaluate the Pedestrian Crash Location study to identify systemic improvements that can be applied statewide. Initiate projects or programs to provide improvements based on the study findings.

Long-Term Strategies:

- Identify key locations for No Turn on Red (NTOR) and blank out sign installation.
- Evaluate the crosswalk illumination study to identify installation locations and typical treatments to implement.

Challenges:

- Funding to support pedestrian infrastructure improvements.
- Time needed for municipalities to program pedestrian facility improvements including those on roadways under state jurisdiction.
- Adequate time for public education of new devices and countermeasures.
- Adequate data and time to further investigate and develop recommendations.

### 3.1.2 Infrastructure EA

#### Roadway Departure

The Roadway Departure crash type is defined based on the “first harmful event” field in the crash report being marked as rollover, immersion, hitting a fixed object, parked vehicle, or a barrier, or “manner of collision” filed marked as head on or sideswipe opposite direction. Figure 17 shows the five-year rolling average for fatal and serious injury roadway departure crashes from 2019 to 2022. Crashes have been increasing since 2019, with a five-year rolling average of 702 in 2022, which is above the 2026 goal of 633 crashes or less.

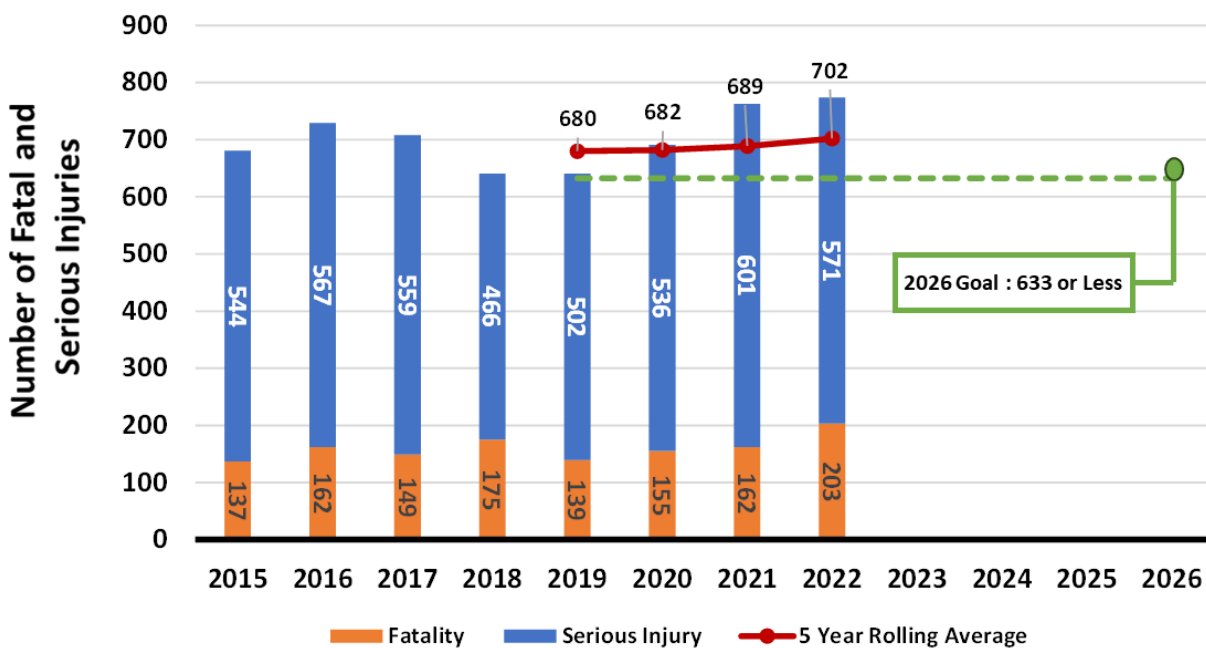


Figure 17. Trend of Fatal and Serious Injury Roadway Departure Crashes by Year

Some of the Roadway Departure data analysis included:

- Crashes by each EA/ASA
- Percentage of crashes by Roadway Departure category
- Hourly percentage for weekdays and weekends based on each category
- Percentage of KA injuries by fixed object categories
- Overlap of EAs for various fixed object crashes
- Curb crashes by EA category
- Percentage of speed related KA curb versus all roadway departure crashes for various speed limits
- Percentage of sequence of events after hitting curb

Recommended Roadway Departure SHSP strategies for implementation focus on keeping vehicles on the road via **speed management, reducing roadside encroachment, and reducing head-on crashes:**

Near-Term Strategies:

- Support additional installation of wet reflective pavement markings.
- Increase installation of HFST.
- Increase use of speed feedback signs.
- Support implementation of automated enforcement infrastructure to address speeding.

Mid-Term Strategies:

- Increase 6" edgeline implementation/installation.
- Install horizontal curve pavement marking treatments, considering findings from pavement marking study on municipal roads.
- Utilize state guiderail inventory for crash data analysis and analyze findings from guiderail study.
- Increase enforcement and utilization of enforcement grants.
- Increase use of high visibility enforcement.

Challenges:

- Adequate time for public education of new devices and countermeasures.
- Time for implementation of policies.
- Adequate data and time to further investigate and develop recommendations.
- Ability to increase staffing levels for high visibility enforcement.



## Intersection-Related

The Intersection-Related crash type is defined based on the “crash specific location” field in the crash report marked as “Intersection” or “Intersection-Related.” Figure 18 shows the five-year rolling average goals of fatal and serious injury intersection-related crashes from 2019 to 2022. Since 2019 the five-year rolling average has been steadily decreasing, with an average of 644 crashes using data through 2022, 12 crashes below the 2026 goal of 658 crashes or less.

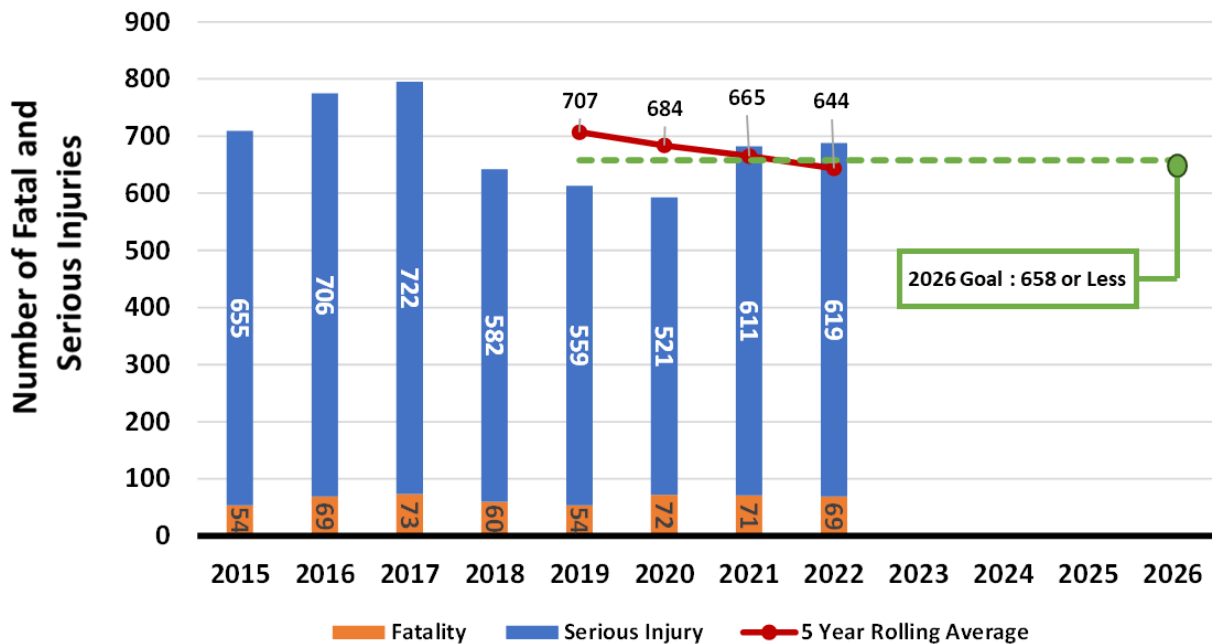


Figure 18. Trend of Fatal and Serious Injury Intersection-Related Crashes by Year

Some of the Intersection-Related data analysis included:

- Crashes by each EA/ASA
- Crash data percentage overlaps with pedestrian, hit and run, and motorcycle crashes
- Hourly percentage for KA versus all crashes
- KA Injuries by state versus municipal roadway ownership
- Crash data based on crash reports and intersection database
- Crashes based on signal operation by hour of the day
- Crashes by intersection type, lighting, and ownership
- KA crashes versus total crashes by hour of the day by weekday and weekend
- Crashes by vehicle maneuver for signalized and unsignalized intersections
- Crashes by intersection geometry

Recommended Intersection-related SHSP strategies for implementation focus on **reducing fatal and serious injury crashes at signalized and unsignalized intersections** as well as **improving driver awareness and compliance**:

Near-Term Strategies:

- Install flashing yellow arrows and provide education in areas of installation.
- Support Municipal Clearance Interval Project.
- Install of automated enforcement for red light running and speeding.

- Support unsignalized intersection improvement projects: Signing and pavement marking improvements at state and municipally owned unsignalized intersections.
- Intersection Control Evaluation (ICE) policy implementation.

Mid-Term Strategy:

- Analyze findings from road diet studies and implement road diets.

Challenges:

- Adequate time for public education of new devices and countermeasures.
- Adequate data and time to further investigate and develop recommendations.
- Challenge to increase installation of HFST due to cost of treatment.
- Time for policy implementation.

### 3.1.3 Behavioral EA

The Behavioral EA focuses on eliminating fatalities and serious injuries related to aggressive driving, impaired driving, unrestrained occupants, motorcyclists, and distracted driving. A detailed data analysis was performed for each of these crash types and presented at the EA meetings. The following data was presented for all the crash types:

- Percentage overlap with other EAs
- Proportion of crashes by municipality
- Percentage of KA crashes versus total crashes by hour of day for weekdays and weekends
- Age and gender distribution
- Percentage of crashes based on route class
- Residential distribution of drivers based on their zip code
- Percentage of crashes based on crash report unit type

#### **Aggressive Driver**

The Aggressive Driver crash type is defined based on the “speeding related” field in the crash report marked as “Racing,” “Exceeding speed limit,” or “Too fast for condition” in addition to “driver action” field marked as “Following too closely” or “Reckless driving.” Figure 19 depicts the five-year rolling average of fatal and serious injuries for aggressive driver crashes from 2019 to 2022. Since 2019, the five-year rolling average has decreased from 806 to 779 in 2022. Despite the downward trend in the five-year rolling average of crashes, the 2026 SHSP goal of 750 crashes or less has still not been met.

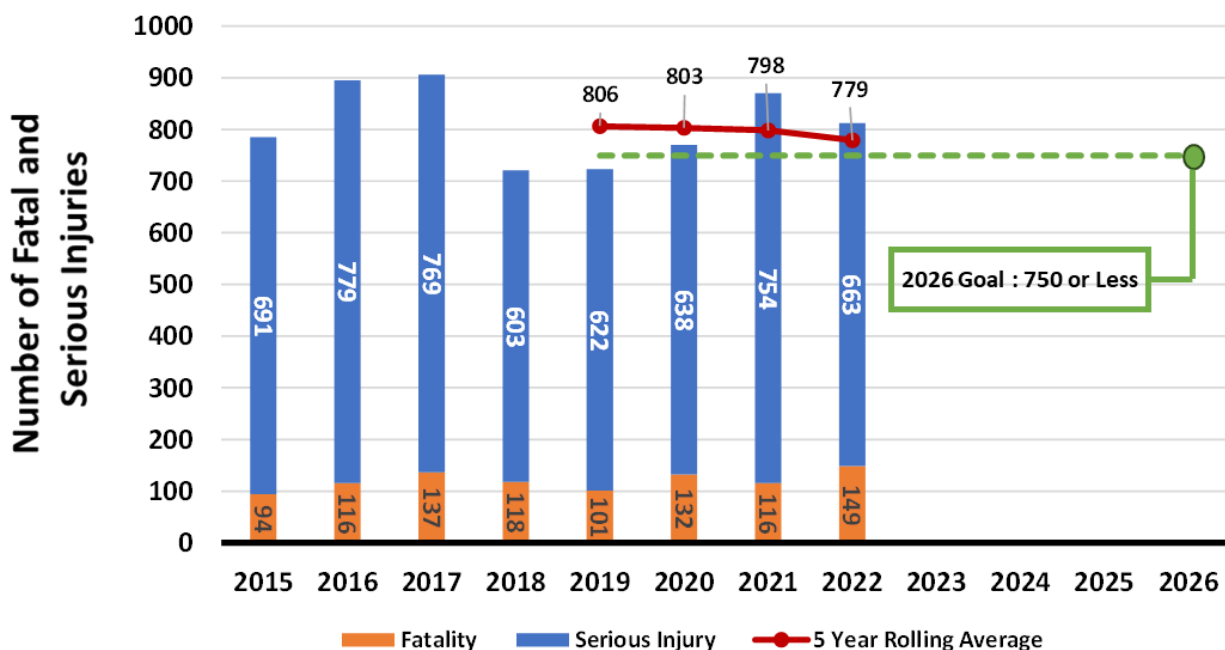


Figure 19. Trend of Fatal and Serious Injury Aggressive Driver Crashes by Year

Some of the additional Aggressive Driver data analysis included:

- Percentage overlap with other EAs

- Injuries by month/day/hour
- Crash percentage by driver action by year
- Overlap of various driver actions
- Overlap of various types of aggressive behaviors
- Percentage of various speed-related crashes overlapped with other EAs
- Percentage of speed-related injuries for various vehicle maneuvers
- Age distribution and hour of day of speed related stops versus speed related crashes
- Overlap of various aggressive driver behaviors

Recommended Aggressive Driver SHSP strategies for implementation aim to **address speeding, increase enforcement, and strengthen penalties:**

Near-Term Strategy:

- Implement automated enforcement.

Mid-Term Strategies:

- Increase high visibility enforcement COG support, specifically for campaigns that target speeding and aggressive driving.
- Increase adjudication of citations.

Long-Term Strategy:

- Support legislation to strengthen penalties.

Challenges:

- Ability to increase staffing levels for high visibility enforcement.
- Need for legislation.
- Adequate data and time to further investigate and develop recommendations.
- Need for more adjudication of citations.

### ***Impaired Driving***

The Impaired Driving crash type is defined where the “condition at time of crash” field in the crash report is marked as “Under the Influence of Medications/Drugs/Alcohol” for the driver. Figure 20 shows the five-year rolling average goals of fatal and serious injury for aggressive driver crashes from 2019 to 2022, which have steadily decreased over this time. As of 2022, the five-year rolling average of crashes is at 260, approximately 23 crashes above the 2026 goal of 237 crashes or less.

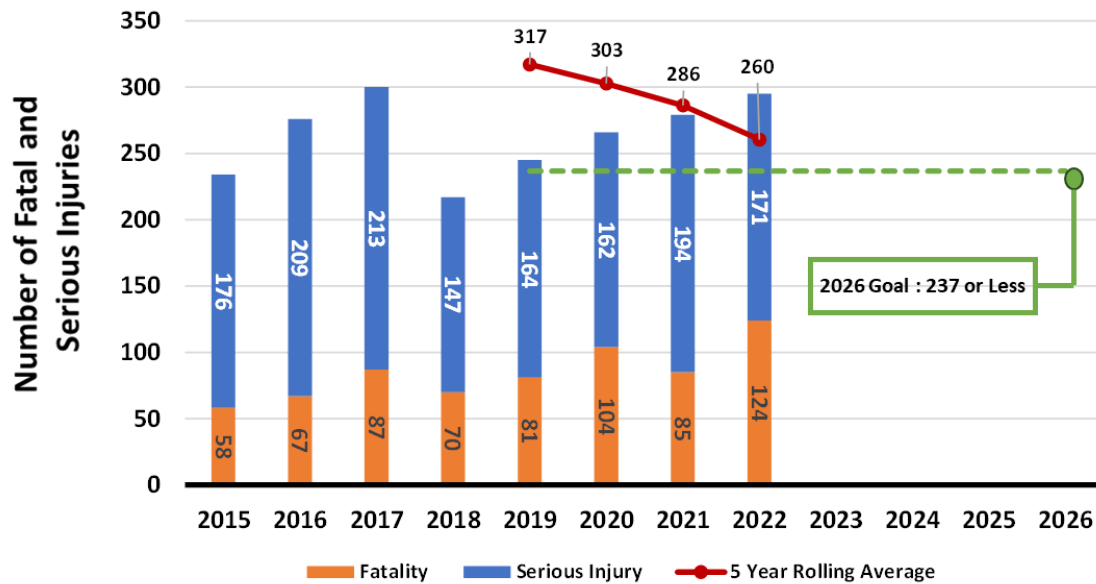


Figure 20. Trend of Fatal and Serious Injury Impaired Driving Crashes by Year

Recommended Impaired Driving SHSP strategies for implementation aim to **support media campaigns, expand drug screening and alcohol, increase education and trainings, increase enforcement, and strengthen legislation around alcohol use:**

#### Near-Term Strategies:

- Continue push for legislation to reduce BAC from 0.08 to 0.05.
- Support Phlebotomy & DRE training for officers.

#### Mid-Term Strategies:

- Support policies and programs that increase the availability, convenience, affordability, and safety of transportation alternatives for drinkers who may drive (especially during nighttime and weekend hours).
- Support implementation of pilot Oral Fluids Testing programs.
- Program for adults to increase impaired driving awareness related to drug use and cannabis.
- Support legislation of E-warrant use with roadside drug impairment testing.
- Increase high visibility enforcement.
- Support efforts to digitalize and create a central, electronic database for A-44 forms.

#### Long-Term Strategies:

- Consider mandatory trainings for servers and bartenders to minimize overserving.
- Continue support for legislation of Open Container Law: Support CTDOT's legislative proposals (such as 2020 Bill 151), prohibiting open alcohol containers in motor vehicles.

#### Challenges:

- Need for legislation.
- Funding sources to be identified.
- Time for policy development.
- Adequate data and time to further investigate and develop recommendations.
- Resources to educate more people on implementation already being performed.

### ***Unrestrained Occupants***

The Unrestrained Occupants crash type is defined based on the “restraint system” field in the crash report marked as “None Used” for either the driver or the passenger. Figure 21 shows the five-year rolling average goals of fatal and serious injury for unrestrained occupant crashes from 2019 to 2022. Since 2019 the five-year rolling average has gone up marginally from 247 in 2019 to 249 in 2022, which is 19 crashes more than the 2026 SHSP goal of 230 crashes or less.

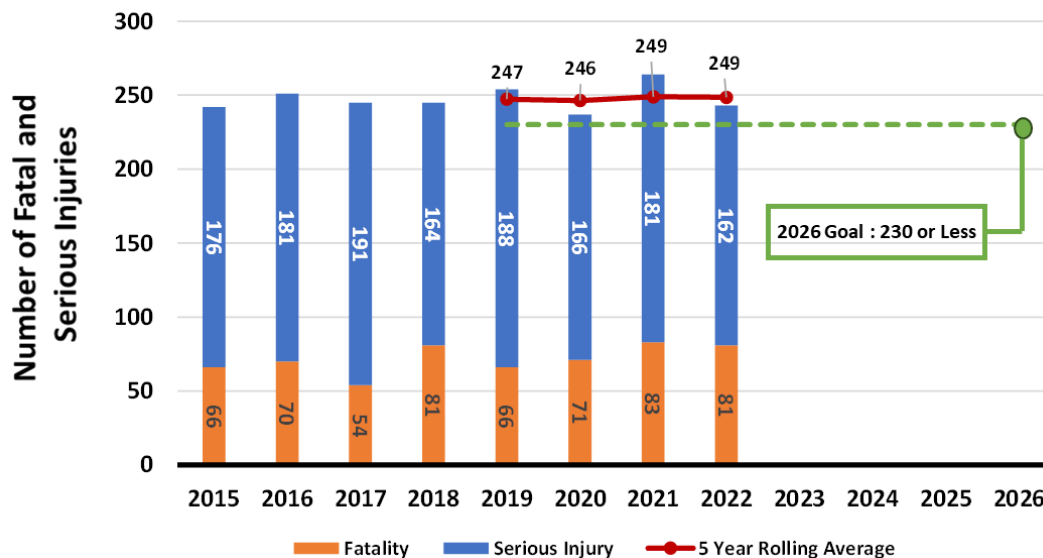


Figure 21. Trend of Fatal and Serious Injury Unrestrained Occupant Crashes by Year

Recommended Unrestrained Occupant SHSP strategies for implementation aim to **increase education, funding, and enforcement, support legislation, and address repeat offenders**:

#### Near-Term Strategy:

- Support and increase funding and education for car seat distribution and use geared toward increasing Child Passenger Safety (CPS).

#### Mid-Term Strategies:

- CTDOT, Dept. of Education, DMV, DPH, social services, and veteran affairs to establish a program promoting use of seat belts among vulnerable communities.
- Increase and promote high visibility enforcement.

#### Long-Term Strategies:

- Support primary enforcement law for rear seated passengers.
- Strengthen legislation and enforcement for repeat offenders.
- Consider requiring additional trainings for repeat offenders.

#### Challenges:

- Increased funding to support current CPS programs.
- Need for legislation.
- Ability to increase staffing levels for high visibility enforcement.
- Adequate data to further investigate and develop recommendations.

## Motorcycle

The Motorcycle crash type is defined based on the “body type” field in the crash report marked as “Motorcycle” or “Moped.” Figure 22 shows the five-year rolling average goals of fatal and serious injury for motorcycle crashes from 2019 to 2022. Since 2019 the five-year rolling average has increased from 316 in 2019 to 331 in 2022, 58 crashes more than the 2026 SHSP goal of 273 crashes or less.

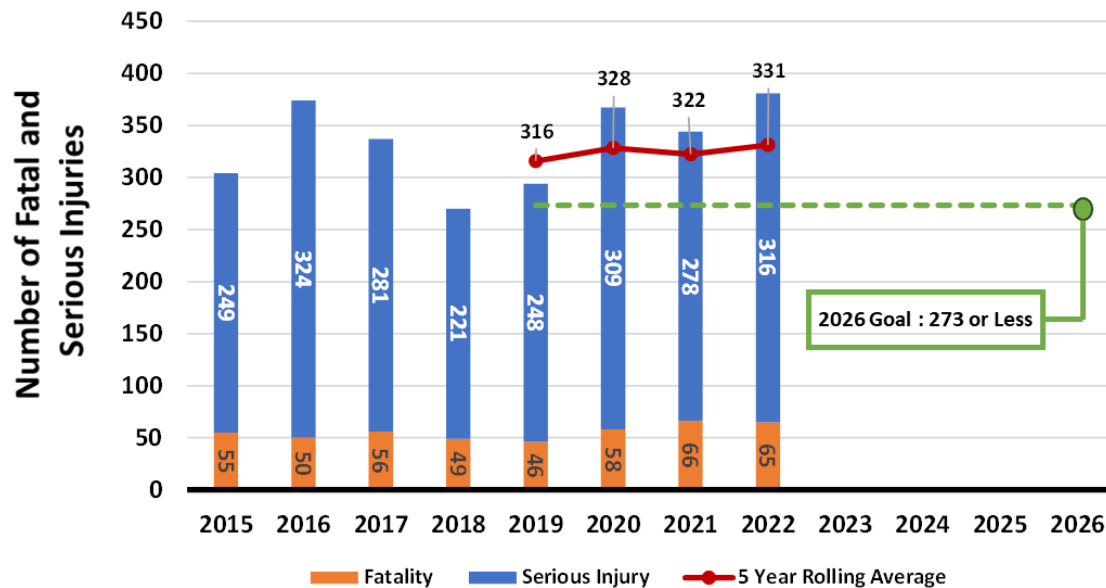


Figure 22. Trend of Fatal and Serious Injury Motorcycle Crashes by Year

Some of the additional Motorcycle data analysis included:

- Percentage of KA and all crashes by helmet usage
- KA crashes versus all crashes by age group and helmet use
- Roadway location of crashes

Recommended Motorcycle SHSP strategies for implementation aim to **strengthen awareness and education, and improve visibility through highly visible protective wear:**

Near-Term Strategies:

- Continue support for CT Rider Education Program to be mandatory for all riders.
- Provide targeted education and implementation of campaigns on sharing the road with motorcycles.

Long-Term Strategy:

- Continue to support legislation of a helmet law in CT.

Challenges:

- Support for continued funding for current driver education programs.
- Need for legislation for helmet laws.

## ***Distracted Driving***

The Distracted Driving crash type is defined based on the “driver distracted by” field in the crash report marked as: “Manually Operating and Electronic Communication Device (texting, typing, dialing),” “talking on Hands-Free Electronic Device,” “Talking on Hand-Held Electronic Device,” “Other Activity, Electronic Device,” “Passenger,” “Other Inside the Vehicle (eating, personal hygiene, etc.),” or “Outside the Vehicle (includes unspecified external distractions).” Figure 23 shows the five-year rolling average goals of fatal and serious injury for distracted driving crashes from 2019 to 2022. Since 2019 the five-year rolling average has decreased from 100 in 2019 to 83 in 2022, 4 crashes below than the 2026 SHSP goal of 87 crashes or less.

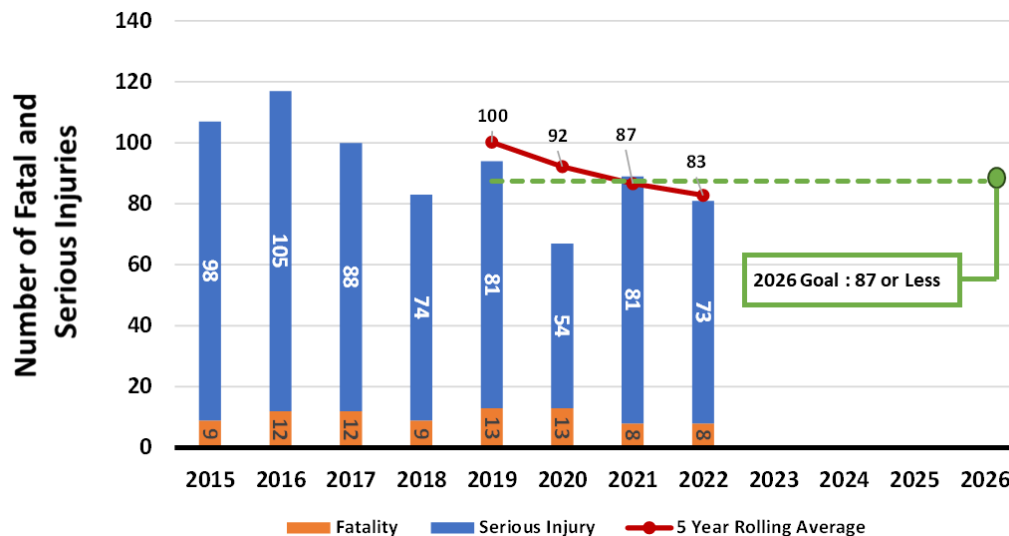


Figure 23. Trend of Fatal and Serious Injury Distracted Driver Crashes by Year

Some of the Distracted Driver data analysis included:

- Percentage of crashes for various types of distractions
- KA crashes versus all crashes by vehicle body type and vehicle maneuver

Recommended distracted driving SHSP strategies for implementation include:

Mid-Term Strategies:

- Increase high visibility enforcement.
- Continue awareness campaigns for distracted driving.
- Encourage setting phone default to “do not disturb” message when driving.

Challenges:

- Ability to increase staffing levels for high visibility enforcement.
- Time to develop outreach and education.
- Adequate data to further investigate and develop recommendations.



### 3.1.4 Additional Safety Areas

As defined in the SHSP, Additional Safety Areas (ASAs) were identified as comprehensive, direct efforts to achieve zero fatalities for all road users. While there are not explicit five-year rolling average goals for fatal and serious injury crashes related to ASAs, strategies for each ASA were considered by the ASA team, SHSP leadership, and stakeholders for incorporation into implementation strategies to meet the goals of the SHSP. Recommended strategies for implementation by ASA type are outlined below:

#### ***Unlicensed Driver:***

Near-Term Strategy:

- Identify licensure updates and guidelines to the Connecticut Driver's Test coming into effect. Long-Term Strategy: Address unlicensed drivers that are repeat offenders.

#### ***Hit-and-Runs:***

Mid-Term Strategy:

- Identify "hot spot" locations for hit-and-run crashes and what mitigation efforts can be used. Increase enforcement to reduce hit-and-runs.

#### ***Work Zones:***

Near-Term Strategies:

- Implement smart work zones.
- Maintain consistent signing and pavement markings in work zones.
- Integrate automated enforcement into work zones.

Mid-Term Strategy:

- Explore percentage of work zones by road type and identify crash trends in work zones. Consider percentage of KA's in work zones by road type.

#### ***Commercial Vehicles:***

Mid-Term Strategies:

- Identify safe areas for CMV parking and conduct parking study analyses.
- Install warning signs for CMVs in areas with high grades.
- Explore common causes and mitigation measures for CMV crashes.

#### ***Older Drivers and Older Pedestrians:***

Mid-Term Strategies:

- Spread awareness of available AARP courses.
- Investigate crash trends by age group utilizing age data from driver's licenses.

Long-Term Strategies:

- Consider formal support of stricter CTDMV policy of license renewal for senior drivers
- Consider mandatory in person tests with vision exam for drivers 65 years and older.
- Explore mandatory training for all older drivers over a certain age.

### ***Pedal Cyclists:***

#### Near-Term Strategy:

- Utilize the complete streets directive to implement Pedal cyclist accessibility and illumination improvements.

#### Mid-Term Strategy:

- Analyze illumination study addressing visibility for vulnerable road users (VRUs).

### ***Younger Drivers:***

#### Mid-Term Strategies:

- Explore how other states are educating younger drivers.
- Provide in-person, accessible driver training courses for young drivers.
- Investigate effectiveness of laws for younger drivers in reducing crashes.

#### Long-Term Strategy:

- Study effectiveness of Driver Training Courses in CT.

### ***Wrong Way Drivers (WWD):***

#### Near-Term Strategies:

- Continue to implement infrastructure improvements such as replacement/installation of one-way signs & installation of pavement markings.
- Increase WWD detection on highway on/off ramps.

## **3.2 Steering Committee Endorsement**

Each prioritized strategy recommended by the EA and ASA Teams was shared with the Steering Committee at their June 2024 meeting for additional endorsement and refinement prior to proposing to the Executive Committee for implementation. In general, the SC supported the recommendations. Any concerns or barriers to implementation were noted and included where applicable in the Tracking Databases.

## **3.3 Executive Committee Endorsement**

Prioritized strategies recommended by the EA and ASA Teams and endorsed by the SC were presented to the EC on August 28, 2024. In general, the EC supported the recommendations. The EC committee comments are summarized below. More detailed comments as well as questions to be addressed at future EC meetings are given in Appendix B. The EC shared comments relative to:

- Roundabout education for road users.
- Working with local organizations such as health, police and seniors regarding older drivers
- Increase enforcement.
- Increase penalties for failure to obey laws.
- Increase safety awareness through videos and billboards.
- Increase coordination between state and local police departments.
- Focus on localized /municipal data to increase buy-in.
- Ensure municipalities have a safety plan and coordinate with their police department.
- Leverage improved technologies relative to new vehicles.
- Consider speed tracking devices.

- Consider bringing back driver's education classes to schools.
- Improve PR-1 reporting utilizing geodata.
- Update the CT Driver's Manual.

## 4. Current Programs and Identified Gaps

### 4.1 Current Projects and Programs

Along with the HSIP Implementation Plans, the Highway Safety Plan (HSP), Vision Zero Council, and Regional Transportation Safety Plans (RTSP) are also referenced in the Tracking Databases and support the strategies vetted through the SHSP for implementation. It will continue to take a variety of projects from many different sources to help to reduce the number of fatalities and serious injuries on all public roadways in Connecticut.

### 4.2 Identified Gaps

As seen with the historic allocation of HSIP funding, there is less monies allocated to address fatal and serious injury crashes on locally owned and maintained roadways than versus state owned and maintained roadways. This gap in the proportion of safety funding to municipalities to address the nearly 50% of fatal and serious injury crashes is expected to be reduced as more HSIP projects are designed for municipalities. Studies are underway to address the best allocation of the funding for various strategies.

Data gaps have also been identified. The effectiveness of many strategies already implemented in Connecticut has yet to be determined mainly due to the need for more time to elapse to be able to gather sufficient after data for analysis. Data gaps have also been noted when gathering data for improvements performed at the municipal level and for safety improvements performed on projects outside of the HSIP program. It was also discussed that the crash data reporting form is in the process of being revised to help streamline both the collection of the data and the results to help with further analysis.

## 5. Conclusion

This Implementation Phase Report, along with the Tracking Databases, serve as guides for the CTDOT and other stakeholders to use when considering implementation of countermeasures to reduce fatal and serious injuries on Connecticut roadways. Since the publication of the 2022-2026 SHSP, the SHSP committees met regularly and worked in collaboration to provide the recommended strategies and countermeasures.

The near-term, mid-term, and long-term strategies are suggested time frames when agencies are considering programming of funding for safety project implementation. Possible challenges to implementing the strategies have also been identified. The purpose of this Report is to assist Connecticut achieve its goal of reducing fatalities and serious injuries on all public roads and the vision that all users of Connecticut's transportation system will arrive safely to their destinations.

## **Appendices**

Appendix A: Implementation Tracking Databases

Appendix B: Executive Committee Questions and Comments

## **Appendix A: Implementation Tracking Databases**

[Infrastructure EA Implementation Tracking Database](#)

[Behavioral EA Implementation Tracking Database](#)

[Pedestrian EA Implementation Tracking Database](#)

[ASA Implementation Tracking Database](#)

## Appendix B: Executive Committee Questions and Comments

1. What is the number of new drivers per year? How does this impact the number of overall crashes/how many are young drivers vs. past years?
2. Any communities specifically where a higher number of crashes are originating? As in, does Berlin have a whole lot of bad drivers? Check licenses to see where drivers live, not just where the crash happens. Can focus education/outreach efforts in those towns. Note: *This data related to driver zip codes was presented at the EA meetings for discussion and recommendation for targeted education.*
3. Roundabouts: meet with CPCA to share with local police departments (PDs) when a new roundabout goes in. Have a session about educating community.
4. Local health and police collaboration. Aging drivers; DPH works with local health and senior homes.
5. Older Drivers: 6PM news, libraries for community partnerships, senior centers/adult education efforts/AARP.
6. Videos/pictures to show how things work? Stop & Shop, Big Y, etc. have big billboards.
7. Lack of coordination between State and local police departments: CSP has exclusivity on highways. Consider a Statewide summit for traffic units specifically (not including focus on narcotics, guns, etc.) for police to train them on newer roadway designs/technologies.
8. Localize data to the communities as much as possible, so municipalities will be more likely to buy in. Remove limited-access highway info to just get data on roads under local jurisdiction.
9. "Cops on dots". Tell Enforcement where they should be located to catch offenders.
10. If an individual is a repeat offender, it is hard for law enforcement to identify them. Most PDs don't share this info with other police/other towns.
11. Young drivers doing GTA, driving recklessly. Increase penalties for those breaking the law.
12. Leverage technology as parents; set rules and boundaries, monitor the vehicle.
13. Fund a pilot in a community to buy a device that tracks speeds (similar to what insurance companies do) to see if that results in a speed differential.
14. SDE to look into what happened to the driver's education in school, why it left the system and how to bring it back. Will be difficult as Driving Schools are now a lucrative business.
15. Talk to Alliance school districts for disadvantaged/disparaged schools to see if they have funding to provide driver training. Start with areas where equity issues are likelier to exist.
16. Work with media influencers to push messaging across. People following CTDOT/Department are probably not the group we're trying to reach, as they're already looking for safety/info.
17. Can municipalities have a safety plan to focus on top few issues within each town? Loop local PD into the plan.
18. PR-1 form: can geodata be used as part of bodycam recording, instead of something that has to be filled in manually on the form (or something of that nature)?
19. How to provide a significant update to the driver's manual to capture new roadway designs/devices? CTDOT will provide updates as needed to DMV, as well as any other groups that need to contribute.