MAINE'S 2014 STRATEGIC HIGHWAY SAFETY PLAN

On the front/back cover:

Naples Bay Bridge, Naples, Maine

The Naples Bay Bridge is a landmark and causeway that now serves as a tourist destination with enhanced vistas, landscaping, lighting and green space. The $9.2 million project includes a bridge that is a cast-in-place concrete rigid frame spanning 85 feet. The arched profile of the rigid frame provides maximum clearance for boaters with only a modest increase to the roadway profile grade. The alignment and seawall created significant new, open green space for the public. The 1,200 foot long concrete-faced, sheet pile seawall is stunning from the water and carries a 10 foot wide stamped, colored concrete boardwalk that allows safe access to businesses, as well as both lakes, without having to enter traffic. This design improves safety and mobility, and boosts the local economy. Pedestrian-friendly LED lights along the boardwalk lead to a large terraced green space (which the locals call an "amphitheater") that is now used for community events and concerts.

This MaineDOT project won top honors in the northeast regional America's Transportation Awards Competition and was one of nine winners in the Portland Cement Association's (PCA) Fourteenth Biennial Bridge Awards Competition.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Paul R. LePage
GOVERNOR

David Bernhardt
COMMISSIONER

September 22, 2014

RE: Maine's update to the" *Strategic Highway Safety Plan (SHSP)"*

This letter indicates our support for the 4th edition of Maine's Strategic Highway Safety Plan (SHSP). This newest version of the SHSP addresses behavioral, enforcement, engineering and emergency response aspects. It represents the great team work between our offices and many other highway safety partners. The plan reflects data driven strategies developed to improve safety on our roads.

Maine experiences about 30,000 crashes each year that, too often, have devastating personal impacts. Maine has seen a recent 5 year annual average of about 150 crash deaths and thousands of injuries. Crashes are almost always preventable and the SHSP is developed to outline the major common areas of safety concern. The goal of Maine's SHSP is to identify key transportation safety issues and to develop effective action plans that would improve public safety. The Plan is a core resource to guide investment decisions toward programs and identify counter-measure strategies that will best achieve a significant reduction in highway fatalities and serious injuries.

Maine's highway safety statistics are showing that our highway safety partners are making a difference. Crashes and resulting deaths and injuries have been trending down. In 2004, we experienced 194 traffic fatalities, in 2013, there were 145. While this is good progress, we know that these coordinated safety efforts must continue. This plan requires ongoing attention, and it is important to continually discuss, assess, update and implement safety strategies outlined in the SHSP. Maine supports the national goal of *Driving Toward Zero Deaths*.

Sincerely yours,

John E. Morris, Commissioner
Maine Department of Public Safety

Matthew Dunlap, Secretary of State
Department of the Secretary of State

David Bernhardt, Commissioner
Maine Department of Transportation

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October 14, 2014

In Reply Refer To:
HDA-ME

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Matthew Dunlap, Secretary of State
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Subject: Update to Maine Department of Transportation's 2014 Strategic Highway Safety Plan

Dear Messrs. Bernhardt, Dunlap and Morris:

This letter serves as the Federal Highway Administration's approval of the process used to update Maine's 2014 Strategic Highway Safety Plan (SHSP) as outlined in the October 6, 2014 letter from Mr. Duane Brunell, MaineDOT Safety Engineer. We appreciate that Maine frequently revisits and adjusts their SHSP based on the latest data and evaluation of existing strategies.

The Highway Safety Improvement Program (HSIP) is a core federal-aid program under Moving Ahead for Progress in the 21st Century Act (MAP-21). Legislated under 23 U.S.C. §148, the HSIP requires each State to develop a Strategic Highway Safety Plan. The purpose of a SHSP is to assist States in identifying key transportation safety needs and to guide investment decisions toward those strategies that have been shown to achieve a significant reduction in highway fatalities and serious injuries, along with reducing their subsequent costs to society. Maine's SHSP is the guiding document that identifies data-driven strategies and countermeasures to reduce fatalities and serious injuries on Maine roads. The SHSP promotes collaboration among safety stakeholders and identifies common goals.

Moving forward, we would like to make you aware of some changes to the SHSP process as a result of MAP-21:

- The definition of High Risk Rural Road is now determined by the State and should be included in the State's SHSP.

- The State should establish a regular update and evaluation cycle, recommended to be no greater than a 5-year cycle.
- There is a penalty if States do not update their SHSP by a certain deadline. The deadline will be established in future rulemaking.
- A new Older Driver and Pedestrian Rule applies when there has been an increase in fatalities and serious injuries to older drivers and pedestrians. This Rule applies to Maine as of September 2014. Maine's SHSP includes strategies for older drivers in accordance with MAP-21 guidance.
- Performance targets are expected to be coordinated with other safety plans (e.g. Highway Safety Plan, Commercial Vehicle Safety Plan, Metropolitan Planning Organizations). Requirements for specific performance measures and target setting will be finalized when the pertinent regulations are finalized.

Current guidance on SHSP is located on FHWA's MAP-21 website at http://www.fhwa.dot.gov/map21/legislation.cfm.

We thank you and your staff for your support and efforts in updating the SHSP. Our collective efforts are improving safety across Maine. Should you have any questions, please contact me at 512-4911 or Brian Lawrence, Safety Engineer, at 512-4920.

Sincerely yours,

Cheryl B. Martin

for Todd D. Jorgensen
Division Administrator

cc:
Cheryl Martin, FHWA (electronic)
Joyce Taylor, Maine DOT (electronic)
Rhonda Fletcher, MaineDOT (electronic)
Duane Brunell, Maine DOT (electronic)
Lauren Stewart, Maine BHS (electronic)
Patty Morneault, Maine BMV (electronic)
Michael Geraci, NHTSA (electronic)
Paul Logozzo, NHTSA (electronic)
Eric Adair, FMCSA (electronic)
Alan Vitcavage, FMCSA (electronic)

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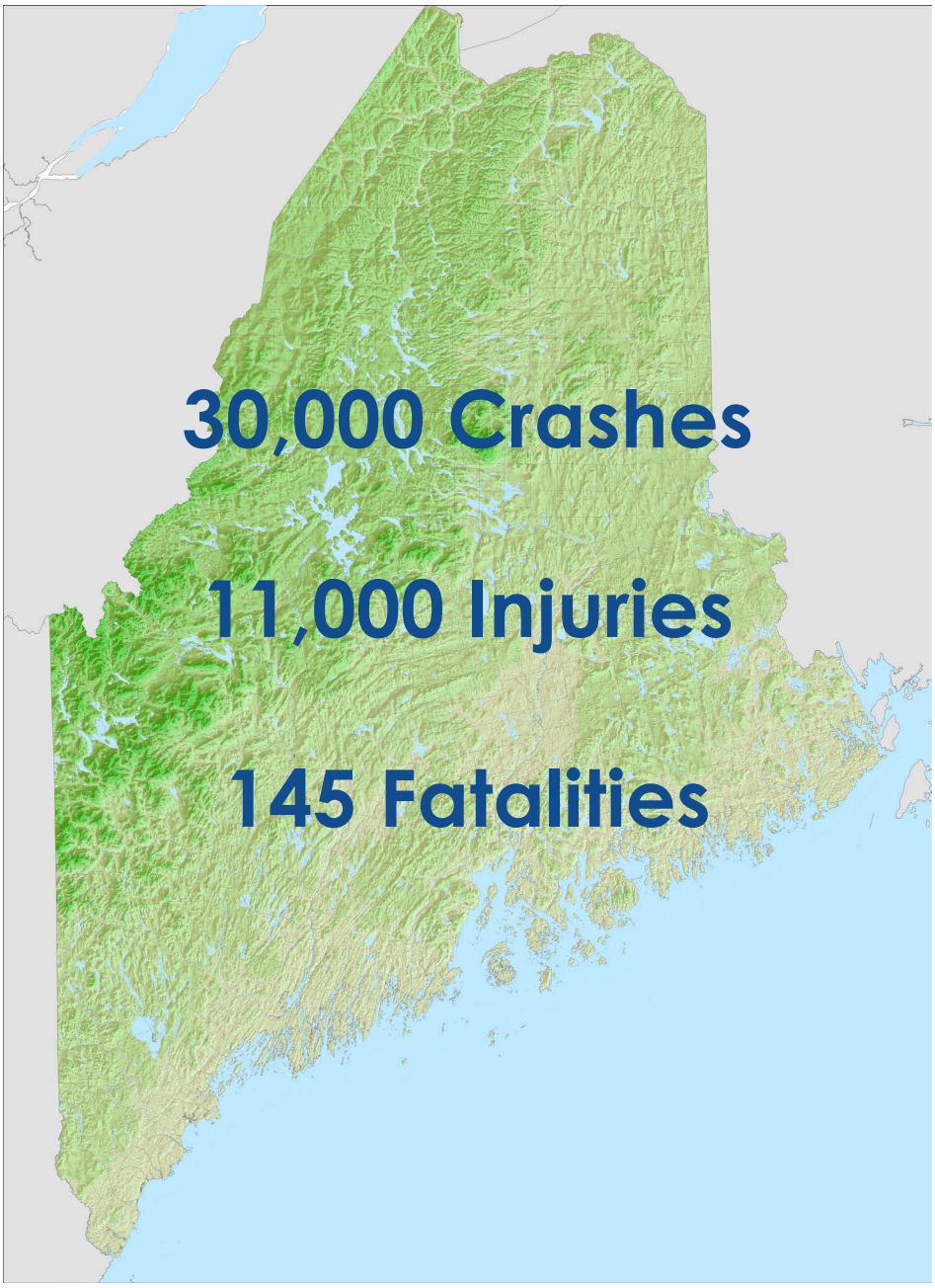
Maine 2013 Crash Results



Maine's 145 fatalities is a decrease compared to 164 fatalities in 2012. Maine had a recent low number of 136 fatalities in 2011.

- The crash rate decreased in 2013 to 211.6 crashes/hundred million vehicle miles traveled (HMVM), which is higher than the national average of 181 (2011).
- Maine's fatality rate is below the national rate. Its current fatality rate of 1.01 fatalities/HMVM compares to the national rate of 1.14 (2012).

Crash trends of strategic interest are summarized below with the latest 2013 results shown. All crash types are important, and strategic effort in any focused safety area has merit. The priority focus areas below were selected based largely on the number of resulting fatalities. If effective strategies are implemented, attention to these focus areas would have the most impact in reducing crashes and the resulting injuries and death. As is the case in this table, most results reported in other sections will be based on the most recent 5-year annual average (5YAA), unless otherwise stated.

Snapshot Look at Focus Area
Maine's Top Crash Types

(Based on Annual Average of Last 5 Years' Experience)

Lead Focus Areas	5 Year Average Annual Crashes 2009-2013	5 Year Average Annual Fatalities 2009-2013	Severity Comparison: Fatalities/1000 Crashes 2009-2013	2006 -2010 Experience Annual Crashes 2006-2010	2006 -2010 Experience Annual Fatalities 2006-2010
All Crash Types	28,896	150.2	5.2	30,750	169.2
Lane Departure	8,865	107.8	12.2	8,727	118.8
Speed	4,573	68	13.3	5,670	67.6
Unbelted	----	50.0	----	----	55.4
16-24 Year Old	9,146	42.8	4.7	11,283	51.6
16-18 Year Old	2,564	12.4	3.6	3,334	14.8
Alcohol	1,315	37.4	28.4	1,566	55.0
Distracted/Inattention*	3,143	12.0	3.7	11,348	42.6
65-98 Year Old	4,990	37.0	7.4	5,010	33.4
Motorcycles	581	19.0	32.4	624	20.6
Winter	5,428	14.0	2.6	6,215	16.4
Intersections	8,435	17.8	2.1	9,058	21.6
Large Trucks	501	7.0	14.0	749	12.0
Pedestrians	273	11.0	44.5	249	12.2
Moose	436	1.2	2.8	561	2.2
Bicycles	201	1.2	5.9	192	2.0

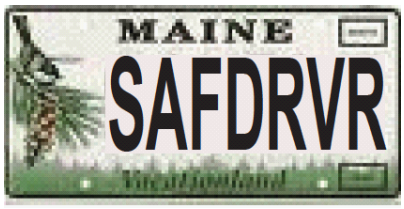
NOTE: *The significant variance in this area is due to the 2011 Maine Crash Reporting System distracted driving reporting definition. Distracted driving results above are only for 2012 and 2013.

Footnote: National crash and fatality rates are from USDOT Bureau of Transportation Statistics

Data Notes: 1. Total fatality counts are from Maine Fatal Accident Report System (FARS). Crash and injury data is from MaineDOT systems that track crashes on public roads.
2. Crashes can be caused by a combination of factors, so one crash may have relationships to several of the categories listed in this report.

Note: See additional background on these topics in Maine Transportation Safety Coalition's (MTSC's) 2014 Maine Highway Safety Facts.

Focus Area Champions



Duane Brunell (MaineDOT) ____ Lane Departure
Lt. Rick Doyon (Biddeford Police Department) ____ Illegal/Unsafe Speed
Lauren Stewart (Maine Bureau of Highway Safety) ____ Safety Belts/Traffic Records
Johannah Oberg (Maine Bureau of Highway Safety) ____ Younger Drivers
Sgt. Don Finnegan (Rockland Police Department) ____ Impaired Driving
Pat Moody (AAA, Northern New England) ____ Distracted Driving
Linda Grant (Maine Bureau of Motor Vehicles) ____ Mature Drivers
Eric Bellavance (Maine Bureau of Motor Vehicles) ____ Motorcycles
Greg Stone (Maine Turnpike Authority) ____ Winter
Matt Philbrick (MaineDOT) ____ Intersections
Brian Parke (Maine Motor Transport Association) ____ Large Trucks
Dan Stewart (MaineDOT) ____ Pedestrians & Bicycles
Richard Bostwick (MaineDOT) ____ Large Animals
Sgt. Owen Davis (York Police Department) ____ Operating After Suspension
Jay Bradshaw (Maine Emergency Medical Services) ____ Emergency Services
Lieutenant Brian Scott (Maine State Police) ____ Enforcement Strategies

Metropolitan and Regional Planning Organization Members

Rick Harbison (GPCOG) ____ Southern District
Jason Ready (ATRC) ____ Western District
Dianne Rice (BACTS) ____ Northern District
Crystal Hitchings (WCCOG) ____ Eastern District

Our Goal

Maine's overall safety goal is to drive safety performance toward zero deaths.

Almost every other day a person loses their life in a Maine vehicle crash. Crashes occur on our roads nearly one hundred times a day. When looking at the underlying story lines related to these frequent and tragic events, one consistently finds that these occurrences are almost always preventable. Many stakeholders are working together to improve these results and this Strategic Highway Safety Plan develops action plans related to Enforcement, Education, Engineering and Emergency Response that are necessary to effect safety improvements. The Plan defines the crash focus areas and outlines the strategies that the various stakeholders can employ together in a coordinated, comprehensive program. The effectiveness of these strategies and crash performance results will be periodically evaluated and updated.

Additional Key Strategic Safety Partners

- Federal Highway Administration
- Federal Motor Carrier Safety Administration
- Maine Center for Disease Control
- Maine Department of Education
- Maine Department of Inland Fisheries and Wildlife
- Maine Office of Substance Abuse and Mental Health Services
- Maine State Police
- Maine Transportation Safety Coalition
- Maine Tribal Representatives
- Metropolitan Planning Organizations
- National Highway Transportation Safety Administration
- Regional Planning Organizations

CORE OUTCOME PERFORMANCE MEASURES								2016 Target	
CORE OUTCOME MEASURES	2009	2010	2011	2012	2013	5-YR Average	Rate	Number	Rate
Statewide Total Safety Performance									
Crashes	28969	27888	28659	28278	30335	28826	199.91	25799.09	178.92
Serious Injury	733	783	894	982	862	851	5.90	761.47	5.28
Fatalities	159	161	136	164	145	153	1.06	136.94	0.95
Lane Departure									
Crashes	8330	8485	8850	9371	9287	8865	61.48	7889.49	54.71
Serious Injury	385	413	438	505	492	447	3.10	397.47	2.76
Fatalities	109	113	102	116	99	108	0.75	95.94	0.67
Illegal/Unsafe Speed									
Crashes	4711	4759	4603	4234	4562	4573	31.72	4116.42	28.55
Serious Injury	201	240	205	227	193	213	1.48	190.81	1.33
Fatalities	61	83	69	78	49	68	0.47	60.86	0.42
Drivers Age 20 or Younger									
Crashes	5652	5254	4897	4853	4739	5079	35.22	4545.71	31.52
Serious Injury	130	131	154	161	131	141	0.98	126.55	0.88
Fatalities	20	24	22	20	17	21	0.14	18.44	0.13
Distracted Driving									
Crashes	10850	10375	2571	3185	3101	3143	21.80	2812.99	19.51
Serious Injury			82	128	84	106	0.74	94.87	0.66
Fatalities	41	33	13	16	12	14	0.10	12.53	0.09
Commercial Vehicles									
Crashes	1213	1072	963	883	947	1016	7.04	908.96	6.30
Serious Injury	34	42	43	44	43	41	0.29	36.87	0.26
Fatalities	23	15	19	12	12	16	0.11	14.50	0.10
Large Trucks (5 axles or more)									
Crashes	544	462	508	513	480	501	3.48	448.75	3.09
Serious Injury	18	20	22	13	14	17	0.12	15.57	0.11
Fatalities	9	8	10	1	7	7	0.05	6.27	0.04
Mature Drivers									
Crashes	4698	4753	4939	5002	5558	4990	34.61	4466.05	30.97
Serious Injury	148	158	181	188	197	174	1.21	156.09	1.08
Fatalities	33	37	32	40	41	37	0.26	32.80	0.23

CORE OUTCOME PERFORMANCE MEASURES

CORE OUTCOME MEASURES	2009	2010	2011	2012	2013	5-YR Average	Rate	2016 Target Number	2016 Target Rate
Alcohol-Impaired (includes drugs and medications)									
Crashes	1418	1307	1186	1215	1164	1258	8.72	1132.20	7.85
Serious Injury	117	129	128	143	147	133	0.92	119.52	0.83
Fatalities	46	38	23	45	35	37	0.26	33.66	0.23
Motorcycles									
Crashes	584	564	574	597	549	574	3.98	513.37	3.56
Serious Injury	128	127	121	141	132	130	0.90	116.17	0.81
Fatalities	24	19	15	24	13	19	0.13	17.01	0.12
Intersections									
Crashes	8721	8129	8352	8264	8709	8435	58.50	7549.33	52.35
Serious Injury	158	181	246	253	201	208	1.44	185.98	1.29
Fatalities	18	16	12	26	17	18	0.12	15.93	0.11
Bicycles									
Crashes	169	199	226	210	202	201	1.40	181.08	1.26
Serious Injury	12	19	30	33	22	23	0.16	20.88	0.14
Fatalities	0	1	0	1	4	1	0.01	1.08	0.01
Pedestrians									
Crashes	264	269	278	295	261	273	1.90	246.06	1.71
Serious Injury	54	35	51	72	37	50	0.35	44.82	0.31
Fatalities	11	12	11	9	11	11	-.07	9.72	0.07
Unbelted Seat Belts									
Fatalities	51	41	53	76	56	55	0.38	49.58	0.34

Note: Prior to 2011, police crash reports captured general "distracted/inattention" driving factors, and 10,000+ distraction/inattention related crashes were reported annually. During 2011, Maine switched to an updated crash report, in line with national guidance, that now reports on specific distracted practices. It does not include generic inattention, greatly reducing the reported number of distracted crashes. Distracted driving behaviors are usually self-reported.

Rates: Rates reported in this table are based on crashes, serious injuries or fatalities per Maine's annual average hundred million vehicle miles traveled.

Lane Departure

Our Challenge

A lane departure crash happens when a vehicle leaves its designated lane and is involved in either a head-on or went-off-road crash. The results are devastating whether a vehicle collides head-on with an oncoming vehicle, slams into a fixed object, rolls over, or has some other severe impact.

Lane departure is Maine's most frequent fatal crash type.

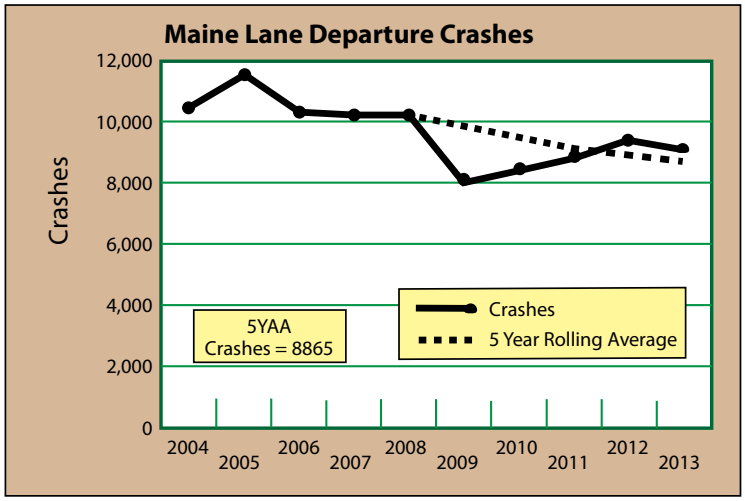
- Lane departure (LD) crashes account for more than 30% of Maine's crash totals (5-year annual average).
- An average of 110 fatalities result from LD crashes. The percentage has remained relatively unchanged in the last 10 years, representing 73% of Maine's total **crash** fatalities. About 33% of LD fatalities were head-on and 67% were run-off-road.
- LD crashes have high severity. For example, a fatality occurs in five out of 1,000 crashes on average for all crash types. For run-off-road, the rate increases to nine fatalities out of 1,000 crashes. For head-on, the rate is 43 fatalities in every 1,000 crashes.
- 48% of LD fatalities were speed related.

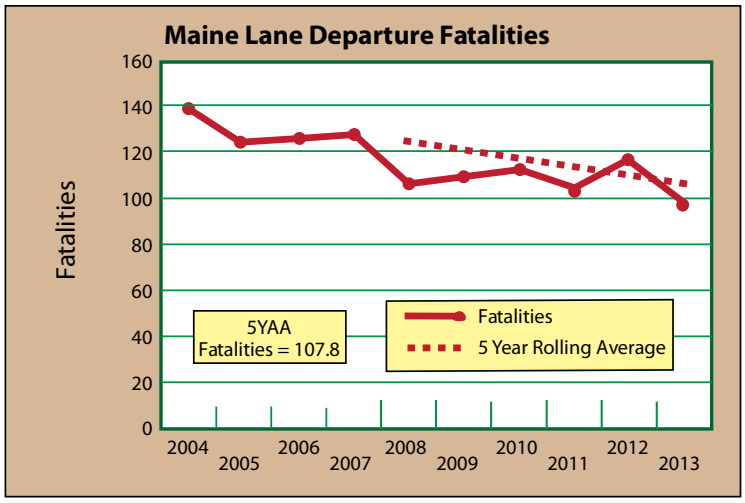
Weather plays a role in Maine's LD crashes. On wintry road surfaces (snow, slush, ice), 3,500 crashes a year result in an average of three fatalities. On wet road surfaces, 1,160 crashes result in 14 fatalities annually.

- Most fatalities do NOT occur on major or interstate highways. 57% of LD fatalities occur on these non-major highway road classes: major collectors (23%), minor collectors (12%) and local roads (22%).

Our Goal

Reduce Lane Departure fatalities 11% by 2016 (to a 5YAA of 96 fatalities).





Lane Departure Strategies

Identify and evaluate key corridors that experience the highest incidence of Lane Departure crashes.

- **Reasoning:** To get the most life and cost benefits out of improvements, the corridors with crash clusters or high crash/fatality incidence should be identified as priority candidates for improvement projects.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Reduce interstate head-on crashes by installing median cable guardrail on a phased basis (begun in 2009).

- **Reasoning**: Where narrow medians exist (usually 50' wide or less), there is susceptibility for out-of-control vehicles to cross the median and head into the opposing, oncoming lane. This is dangerous and severe for all involved vehicles. Median cable guardrails can stop the crossing vehicle (including many trucks) before going into oncoming lanes. The design of the tensioned cables also reduces the degree impact compared to striking a rigid rail system. Both crash data and anecdotal reports following the initial installations have been good.
- **Lead**: MaineDOT
- **Timing:** First installation completed on I-295 and Route 1, Brunswick, in 2009. Most interstate installations are complete with one section remaining on I-195, Saco, planned for 2014.

Identify priority areas where edgeline and centerline rumble strips should be installed to reduce went-off-road and head-on crashes. Continue to identify additional corridors for treatment.

- **Reasoning:** As of early 2014, Maine currently has about 40 miles of non-interstate rumble strips (mostly centerline) with another 15 miles planned for 2014. Rumble strips have demonstrated, both nationally and here in Maine, that they are effective in reducing head-on and went-off-road crashes. Maine's first two rumble strip installations were on Route 1, Woolwich, and Route 4, Turner. Each has shown significant crash reduction. There are now eight corridors that have rumble strips.
- **Lead:** MaineDOT
- **Timing:** Consider rumble strip candidates in each construction year.

Enhance speed and distracted driving enforcement by targeting high incident locations.

- **Reasoning**: Major driver-contributing factors related to lane departure crashes are speed and distracted driving. Focused enforcement would have a direct benefit to reducing lane departure crashes and fatalities.
- **Lead:** State Police/Sheriffs and local enforcement agencies
- **Timing:** Ongoing - high visibility

Merge "safety" thinking into MaineDOT project planning procedures through the use of road safety audits and corridor analysis to help prioritize future safety needs.

- **Reasoning:** Provides a coordinated, collective look at selected corridors to allow development of holistic, efficient and well-thought-out improvement plans.
- **Lead:** MaineDOT
- **Timing:** Ongoing through internal training and communication

Wrong way crashes on the interstate are very infrequent, but when they occur, they often are devastating. They are difficult to classify and, for the purpose of this report, will be treated as lane departures. Wrong way occurrences often originate with vehicles taking an exit ramp to enter a highway. Misdirection also occurs when a driver misuses a median crossover or makes a U-turn within the lane's normal direction of travel. A pilot project with a dynamic warning sign is being conducted on I-295, Freeport. MaineDOT will be addressing interstate ramps in three phases:

1) **Review ramp locations for low-cost safety improvement opportunities** that could include pavement markings; signs with proper installation heights, size and locations; and raised pavement markers.
2) **Identify higher risk ramp locations and install flashing LED "Wrong Way" signs.**
3) **At select locations, install full monitoring dynamic Wrong Way systems that also send e-alerts and photos to key people to validate the driver of a Wrong Way vehicle**.

- **Reasoning:** High severity of head-on crashes
- **Lead:** MaineDOT and the Maine State Police
- **Timing:** Complete pilot project and select ramps that need mitigation (from low cost improvements to various levels of dynamic and/or high visibility signing). Initiate strategy in 2014.

Evaluate high friction surface treatments.

- **Reasoning:** There may be horizontal or vertical curves where basic loss of traction may be a contributing factor to a driver losing lane discipline. There are pavement treatments that can improve friction and thus improve safety at such locations. Maine may have limited opportunities in this area but locations will be evaluated to determine if such a treatment could be beneficial. Pilot projects may be initiated.
- **Lead:** MaineDOT
- **Timing:** 2014-2015 Location identification, mitigation, evaluation and implementation.

Integrate lane departure safety evaluations into MaineDOT's paving planning. Primarily look to identify low-cost items that could easily be addressed as part of the project without significantly changing the project scope.

- **Reasoning:** Better integration of safety into the ongoing work process can gain efficiencies and provide a more holistic and systemic approach in addressing corridor needs.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Use safety edge treatment on key corridors to minimize sudden drop-offs and vehicle transition issues from the shoulder to the travel lane.

- **Reasoning:** Provides a potential solution to overcorrection issues.
- **Lead:** MaineDOT
- **Timing:** Currently being provided on priority corridors.

Provide advance warning signage, advisory speed signs, flashing beacons, curve markings on pavement, rumble strip in advance of curve, transverse lines with decreasing spacing, edgelines to narrow lane width, guard rail post-mounted delineators and regular delineators at select locations.

- **Reasoning:** Provides clear driver cues where road situations may not be otherwise clear.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Enhance delineation, at select locations, such as pavement markings (durable, all-weather reflective striping, raised and recessed pavement markers, wider, more reflective, chevrons,) post-mounted delineators, guardrail delineators, LED in-pavement luminaries, LED barrier-mounted tubes,dynamic chevrons and solar-powered embedded lights.

- **Reasoning:** Provides clear driver cues to help motorists maintain lane discipline.
- **Lead:** MaineDOT
- **Timing:** Ongoing at select locations

Improve clear zones in select sections of roads to provide added clearance from fixed objects such as trees, utility poles and ledge.

- **Reasoning:** Reduce hazards to vehicles that have run off the road.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Coordinate efforts of MaineDOT with local municipalities through continued Local Technical Assistance Program (LTAP) and other municipal outreach. A MaineDOT Local Roads training module is being developed to help identify safety needs and varied solutions, particularly those that are low cost.

- **Reasoning:** Extends communication of needed strategies to a municipal audience for local road needs.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Behavior strategies – include lane departure messages in broader outreach and media efforts.

- **Reasoning:** LD crashes result from a wide range of driver behaviors. These behaviors (speed, impaired driving, fatigue, distractions, and safety belt usage) contribute to LD issues and severity of crash injuries. Efforts to engage the driving public and affect change in those behaviors will need to be a partnered, ongoing effort.
- **Lead:** Cooperative efforts with all agencies as opportunities are identified.
- **Timing:** Ongoing

Illegal/Unsafe Speed

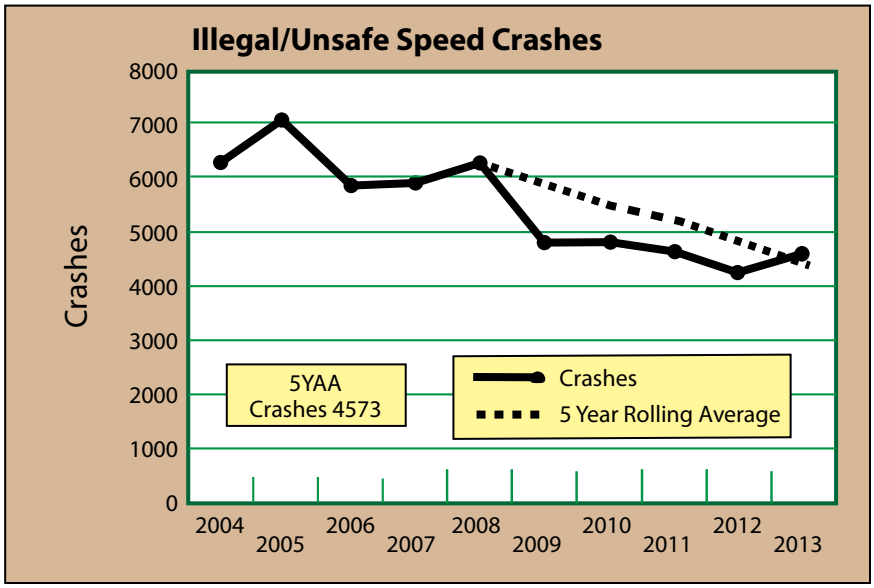
This category includes crashes that result from speed in excess of posted speed limits or that occur when road or weather conditions dictate a lower, prudent speed. Speed is cited as a factor in an average of 4,600 crashes/year.

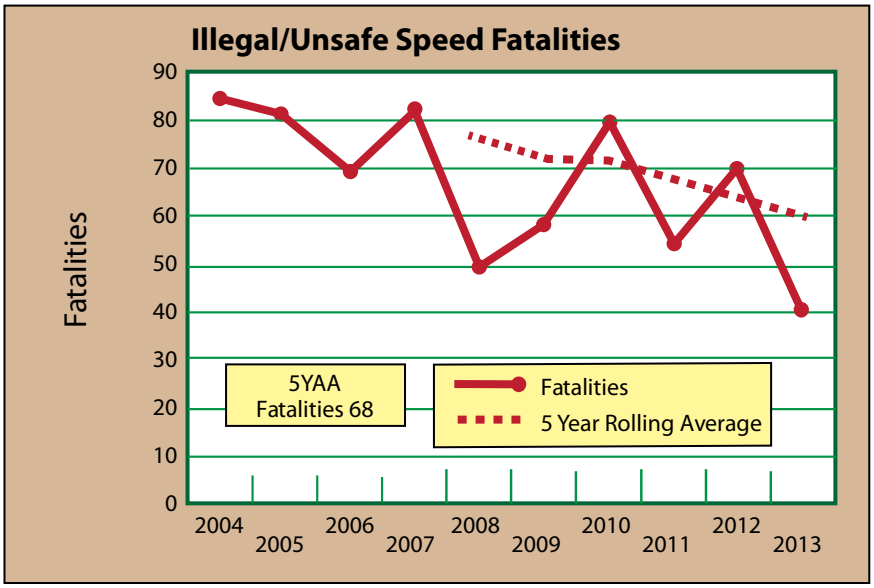
Speed-related crashes account for 19% of total crashes and 42% of total fatalities.

- The biggest concern with excessive speed is that it can lead to other driver errors and serious injuries.
- Adjusting speed for weather-related road conditions is a problem. Unsafe speed was noted in 3,500 crashes on snowy, slushy or icy road surfaces, and another 700 occurred on wet road surfaces.

Our Goal

- Reduce speed related fatalities by 10% by 2016 (to a 5YAA of 62).
- Increase public awareness.
- Increase consistent enforcement.





Illegal/Unsafe Speed Strategies

Enhance speed enforcement efforts by targeting high incident locations. These locations can be determined by crashes, citations/warnings for speed, complaints, and speed data recorders. This includes Maine State Police troops and the air wing unit conducting SAFE (Strategic Area Focused Enforcement) and dedicated speed details in high crash locations. This is a data-driven approach to statewide speed enforcement by eight troops of the Maine State Police. In 2013, the MSP wrote more than 25,000 citations for speeding.

- **Lead:** State/local law enforcement, Department of Public Safety (DPS)
- **Timing:** Ongoing through Bureau of Highway Safety (BHS) funding

Conduct a data-driven speed enforcement campaign. Speed Campaign focuses on decreasing the speed-related crashes by partnering with local law enforcement in select areas.

- **Reasoning:** Focusing enforcement efforts in the areas of greatest concern will allow Maine to make the most significant difference in speed-related crashes.
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

Continue to produce public service announcements via television, web, radio, and newspapers for speed-related issues and their effect on public safety.

- **Lead:** BHS/Department of Public Safety
- **Timing:** Ongoing through BHS funding

Utilize dynamic vehicle travel speed feedback signs (both fixed and portable units) to heighten posted speed limit awareness and achieve traffic calming. These can be employed at regular road conditions and at work zones.

- **Lead:** MaineDOT, Maine Sheriffs, and local police departments
- **Timing:** Ongoing

Although fines may be doubled in highway construction work zones, excessive speed is still an issue. **Identify opportunities where enhanced advance warning and flagger paddle signing can be used**.

- **Lead:** MaineDOT
- **Timing:** Ongoing

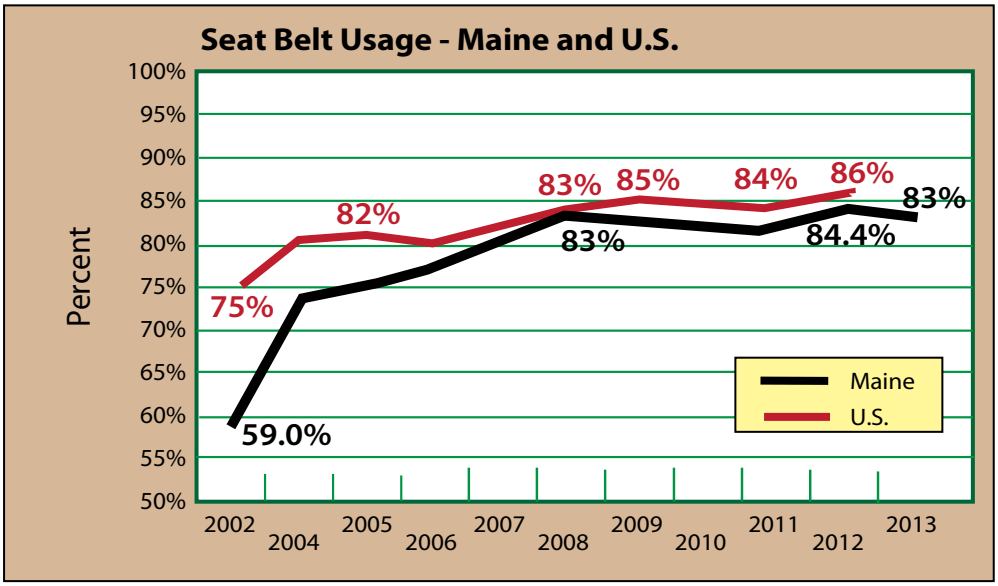
Utilize changeable message signs to reinforce focused speed enforcement campaigns.

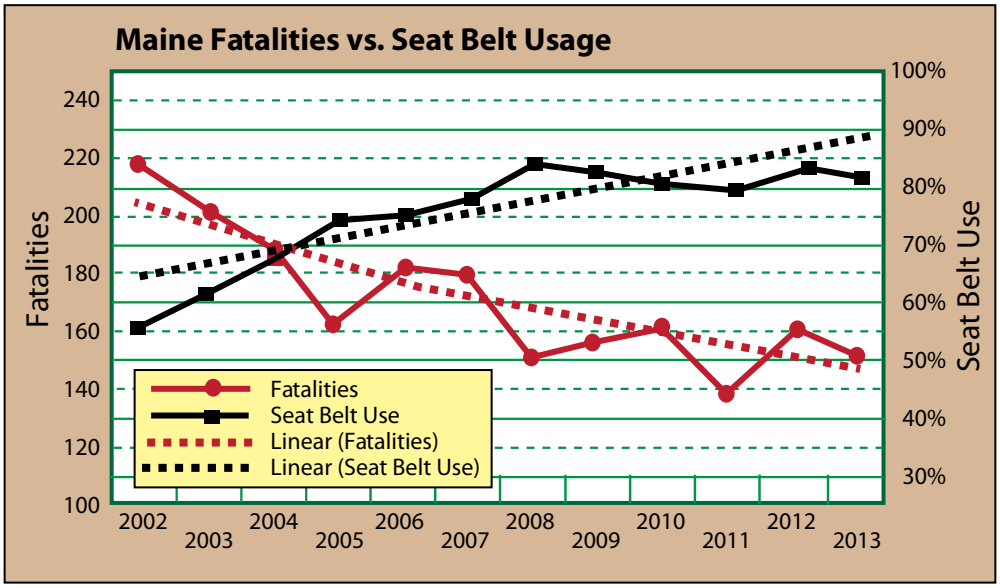
- **Reasoning:** Coordinated public safety awareness campaign
- **Lead:** MaineDOT and the Bureau of Highway Safety
- **Timing:** 2014 and ongoing

Safety Belts

Our Challenge

Maine's Primary Seat Belt law has gained more compliance, but many unbelted fatalities still occur. Maine's seat belt usage rate of 83% in 2013 remained close to recent levels. The rate is slightly below the national average of 86%. Maine's usage rate has steadily increased since 2002. Non-use of seat belts does impact the fatality results in some of the other crash topic sections. The charts below show that as Maine's seat belt use has increased, the number of unbelted fatalities has decreased. In 2013, there were 56 unbelted fatalities in passenger vehicles. This is 42.7% of the 117 passenger motor vehicle crash fatalities (does not include large trucks, pedestrians, bicycles, motorcycles, ATV's, etc.).





Our Goal

Reduce unrestrained passenger vehicle occupant fatalities by 10.5% by 2016 (to a 5YAA of 49.6).

Safety Belt Strategies

Participate in "Click It or Ticket" high visibility enforcement campaigns. MeBHS has seen an increase in the number of law enforcement departments participating in the "Click It or Ticket" enforcement campaign. However, unbelted fatalities continue to be a problem. Maine averaged 55 unbelted fatalities a year from 2009-2013.

- **Reasoning:** Encourage increased use of safety belts.
- **Lead:** Bureau of Highway Safety and law enforcement agencies
- **Timing:** Ongoing

In an effort to increase seat belt compliance and decrease unrestrained fatalities, **implement Regional Occupant Protection Enforcement (ROPE) teams over the next couple of years.** ROPE teams will be made up of law enforcement officers in problem counties. It will take a number of years to establish a team in every problem area. Our ROPE teams will include the best law enforcement officers in the area of occupant protection to conduct focused seat belt enforcement. ROPE teams will be informed about the specific problems in their areas and they will conduct strategic enforcement throughout their counties, focusing on male drivers and drivers operating passenger trucks.

- **Reasoning:** Maximize the benefits of enforcement efforts.
- **Lead:** Bureau of Highway Safety and law enforcement agencies
- **Timing:** Ongoing

Promote daytime and nighttime enforcement and education for the NHTSA "Click It or Ticket" high visibility enforcement campaign to support efforts to increase the seat belt usage rate and decrease unbelted passenger fatalities. Police agencies will be awarded grants. Maine will extend its seat belt enforcement to encompass not only the May "Click It or Ticket" enforcement period, but will include the months of March and April of 2015.

- **Reasoning**: Encourage increased seat belt use.
- **Lead:** Bureau of Highway Safety and law enforcement agencies
- **Timing:** Ongoing

Provide child seats, supplies and educational materials to distribution sites.

- **Reasoning**: Ensure that proper child seats and related education are available to everyone.
- **Lead**: Bureau of Highway Safety
- **Timing:** Ongoing

Conduct annual observational seat belt survey and child occupant seat belt survey.

- **Reasoning:** Assess seat belt usage progress and identify future outreach needs.
- **Lead:** Bureau of Highway Safety
- **Timing:** Annually, ongoing

In conjunction with the University of Southern Maine's Muskie Research Center, **conduct an observational survey to determine safety belt use in Maine.**

- **Reasoning:** Evaluation of Maine's High Visibility Enforcement (HVE) and education efforts are requirements for NHTSA funding.
- **Lead:** Bureau of Highway Safety
- **Timing:** Annually

Provide child passenger safety technician and instructor training, and certification for new and current technicians as well as recertification for those with expired credentials.

- **Reasoning:** Having well-trained technicians has been proven to increase knowledge of occupant protection safety of children, parents, guardians and caregivers.
- **Lead:** Bureau of Highway Safety
- **Timing:** Ongoing

Procure night vision goggles to assist law enforcement agencies throughout Maine in the detection of drivers and passengers who are not wearing their seat belts.

- **Reasoning**: The use of night vision goggles will help increase the ability to detect seat belt compliance in areas with low levels of light and during the darkest hours of the night.
- **Lead:** Bureau of Highway Safety
- **Timing:** Ongoing

Establish an Occupant Protection Task Force (comprising traffic safety experts, advocates, parents, youths and survivors) to develop a comprehensive occupant protection program strategy. The Task Force will specifically address the declining seat belt use rate, the over-representation of unbelted teen fatalities and the low male and pickup truck driver belt use rates.

- **Reasoning:** To enhance occupant protection program
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

Develop tween and pre-driver education. The CPS Coordinator, the Distracted Driving and Teen Driver Coordinator, and the OP Coordinator will work with Department of Education and other partners to develop a standardized curriculum for school districts. This will educate students in elementary, middle and high schools to be safer vehicle occupants as part of the social norming and key messaging process.

- **Reasoning:** To enhance the Occupant Protection Program
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

Conduct a Teen Driver Expo to provide education and networking for teenage drivers, pre-drivers and the adults involved in their instruction. Speakers and presenters will discuss topics that appeal to and influence teens while they drive or ride in a vehicle with friends, to impress upon them the importance of making good choices.

- **Reasoning:** Outreach to this key higher risk group
- **Lead:** Bureau of Highway Safety
- **Timing:** 2016

Utilize changeable message signs to reinforce "Buckle Up - No Excuses" and other focused safety belt enforcement campaigns.

- **Reasoning:** Coordinated public safety awareness campaign
- **Lead:** MaineDOT and Bureau of Highway Safety
- **Timing:** 2014 and ongoing

Younger Drivers

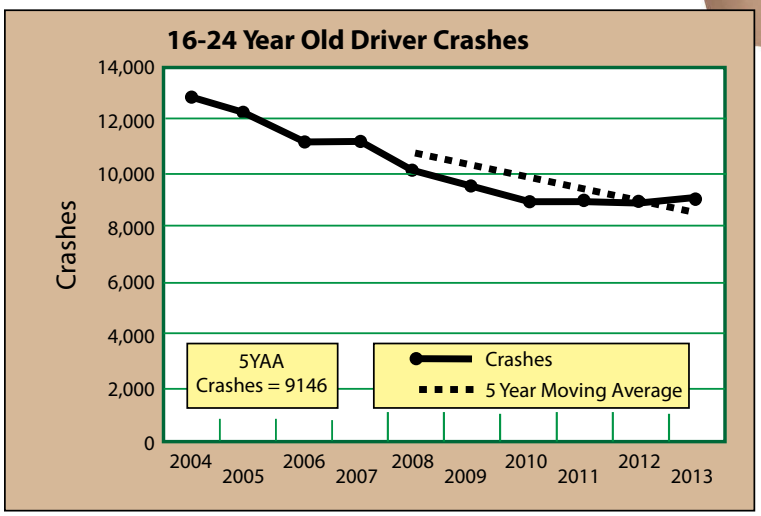
Our Challenge

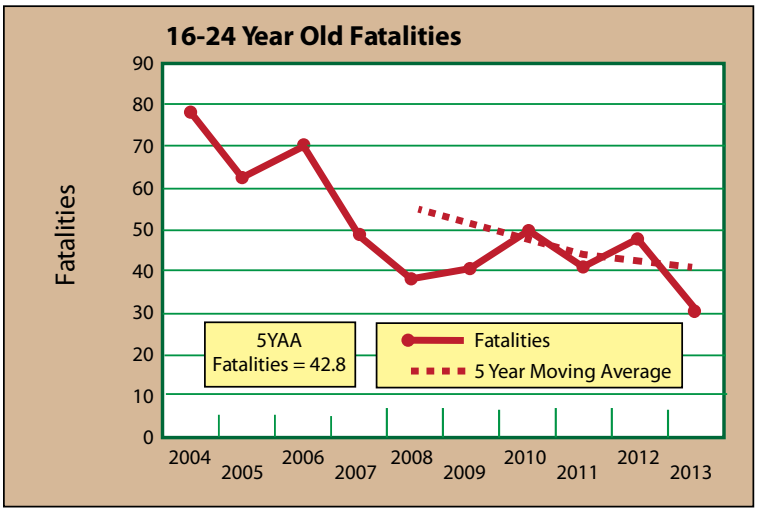
Younger drivers are defined here as, between the ages of 16 and 24, with particular focus on the youngest of drivers, aged 16 to 18. Due to inexperience and other factors, young drivers have a much higher crash and fatality rate than the average driver.

28% of total Maine traffic deaths involve younger drivers. 6% of Maine's crash fatalities involve drivers aged 16 to 18.

Crash facts about Maine's youngest drivers – aged 16 through 18:

- More than 50 alcohol or drug-related crashes occur annually (3.5% of all alcohol/drug related crashes). This trend has been decreasing over the past 10 years.
- Number of young licensed drivers has also been decreasing during the last 10 years.





Our Goal

- **Reduce young driver (between ages 16 and 24) crash fatalities by 10.5% by 2016.**
- **Promote safe teen driving in Maine.**

The Maine Teen Driver Safety Committee (TDSC), convened in 2009 and includes individuals representing Maine agencies including Public Safety, Transportation, Health and Human Services, Bureau of Motor Vehicles and organizations such as Northern New England AAA. As part of its work, the committee developed a Teen Driver Safety Strategic Plan. The plan contains sample activities for each identified strategy and is intended to be one component of a comprehensive, community-based effort to address teen driver safety issues.

The Underage Drinking Task Force, facilitated through the Office of Substance Abuse and Mental Health Services, has been convening since 2011 and has benefited from TDSC participation because approximately one third of underage drinking-related injuries involved a motor vehicle.

Younger Driver Strategies

Target Audience: 16-18 year old drivers

- **Reasoning:** (for all strategies listed below)
  During 2004-2008, motor vehicle traffic crashes were the leading cause of injury hospital discharge for more than 1,100 Maine teens, ages 15-24. From 2003-2007, motor vehicle traffic crashes were the leading cause of death for Maine residents ages 15-24 (220) and the 4th leading cause of outpatient emergency department visits (17,130).

From the 2011 Youth Risk Behavior Survey, here are some teen driver safety findings:

- 7.7% of students rarely or never wore a seat belt when riding in a car driven by someone else. (Maine had an 8.4% rate)
- During the 30 days before the survey, 24.1% of students had ridden one or more times in a car or other vehicle driven by someone who had been drinking alcohol.
- During the 30 days before the survey, 8.2% of students had driven a car or other vehicle one or more times when they had been drinking alcohol.
- 8.4% rarely or never wore a seat belt when riding in a car driven by someone else.

Methods to increase the safety of teen drivers and their teenage passengers are greatly needed and vigorously sought. Graduated Driver Licensing (GDL) is being continually evaluated, and enhanced Overall it is considered effective.

- **Lead:** Bureau of Highway Safety
- **Timing:** Underway – Strategic Plan being developed.

Integrate a diversity of partners and stakeholders to participate in the Teen Driver Safety Committee (TDSC) activities.

- Recruit partners and stakeholders to implement the TDSC strategic plan.
- Create a fact sheet describing the work of the TDSC.
- Create and maintain a partner and stakeholder distribution list.
- Provide partners and stakeholders with the most current research and evidence-based teen driver safety-focused programs.
- Develop a directory of the most current research and evidence-based teen driver safety information and programs.
- Collect and distribute related crash data involving teens.
- Create a Maine-focused teen driving safety awareness toolkit for use and distribution at the local and state levels.
- Research other states for already-developed toolkits.
- Create an evaluation plan for the use of the TDS Awareness toolkit.

Increase parental involvement in developing a safe teen driver. Provide parent-focused education regarding teen driver issues.

Topics:

- Current graduated driver's license and state laws
- Modeling good driving habits
- Setting rules and consequences for actions
- Monitoring teen driver behaviors activities:

- Brainstorm various venues to promote parental education.
- Create parent-based website to include information listed previously.
- Create fact sheets on the issues identified previously.

Other safety activities being conducted are:

- A list of driver safety resources and links to be posted on the Maine Transportation Safety Coalition website.
- Youth safety outreach activities focusing on driver behaviors such as distracted driving, speed, alcohol and safety belt usage.
- Enforcing Underage Drinking Laws (EUDL) taskforces in each of eight public health/ prosecutorial districts, and with the Tribal public health district. These will be sustained by Maine's Office of Substance Abuse and Mental Health Services (SAMHS).

Develop an interactive teen driver awareness outreach program. This program would be delivered to middle and high schools throughout the state. By using a blend of social media, pop culture and state of the art technology, this interactive program provides state-specific information on rules and regulations to help teen drivers make good choices while driving.

- **Reasoning**: Connect young people with factual information related to raising awareness of the different dangers that surround driving.
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

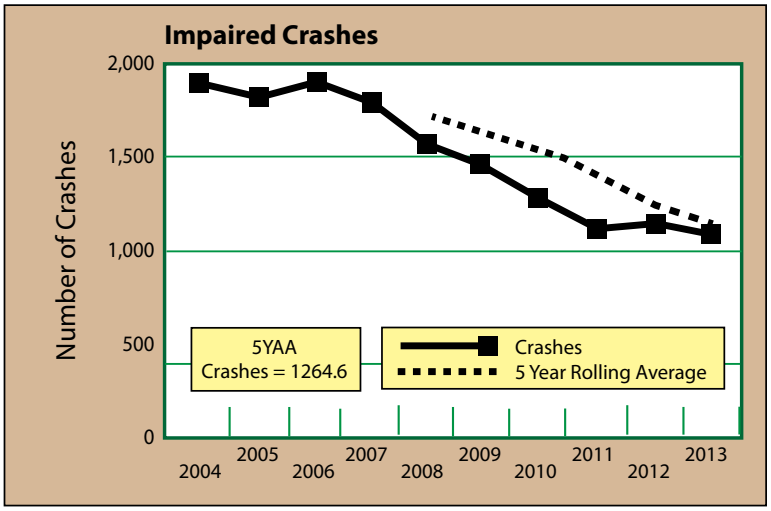
Conduct a teen driver radio marketing campaign.

- **Reasoning:** Teen drivers were involved in a disproportionate number of crashes and fatalities on Maine roads in recent years. Providing education to these teen drivers and their parents is one component of a comprehensive plan designed to decrease crashes and fatalities among this age group.
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

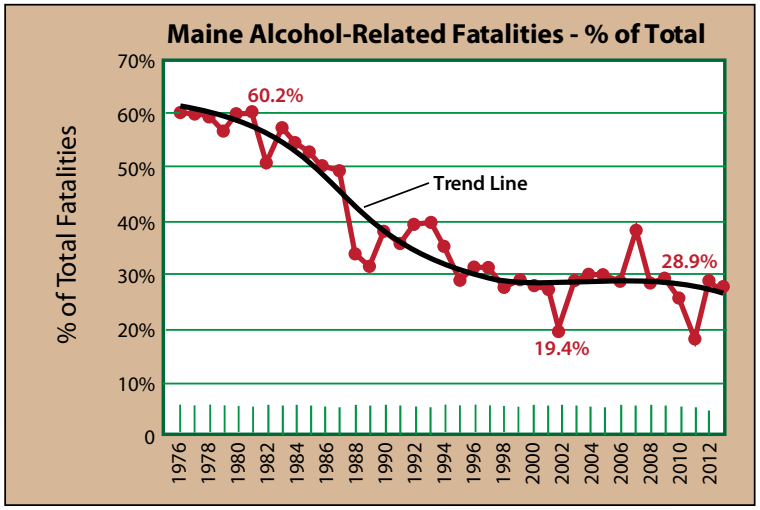
Impaired Driving

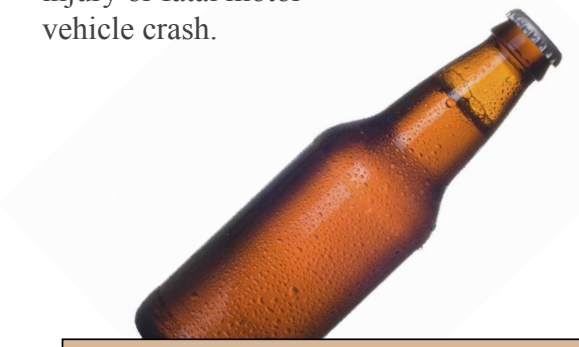
Our Challenge

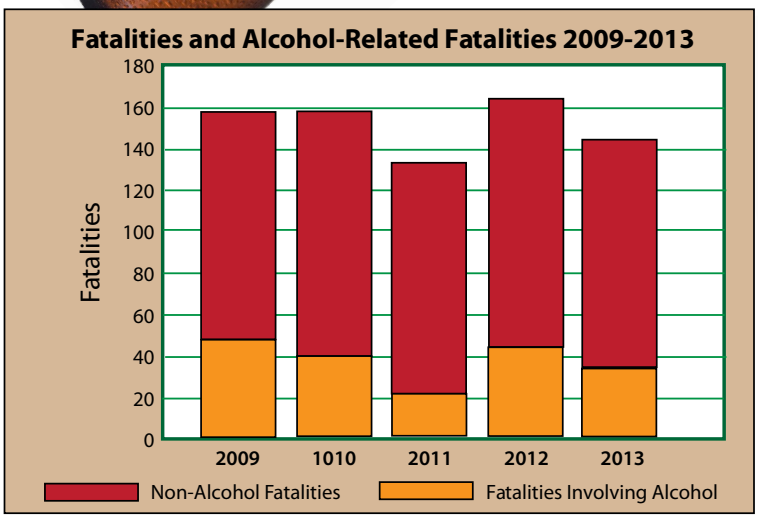
Maine's alcohol-related fatalities were 60% of the total fatalities during the mid-1970's to 1980. This improved to a level of around 20% in 2002/2003. Since then, the percent of alcohol-related fatalities has risen to about 30%. Maine is slightly below the Fatality Analysis Reporting Systems (FARS) national rate of 31% as reported in 2012. This strategic focus area also includes attention to drug-related issues.



A new law, effective Aug. 1, 2014, allows all prior felony OUI convictions to be applied. An OUI becomes a felony if it's a third OUI offense or if it results in a serious injury or fatal motor vehicle crash.







Our Goal

- Reduce impaired driving related fatalities by 10% by 2016 (from 1,258 to 1,132.2).
- Reduce impaired driving related crashes by 10% by 2016 (from 37 to 33.7).

Impaired Driving Strategies

Increase public awareness of drug-impaired driving through media campaigns, press releases and signage.

- **Reasoning:** Public awareness may lead to a reduction of responsible persons driving while impaired by lawfully prescribed medications, and may increase the public's reporting of possibly impaired drivers to law enforcement.
- **Lead:** Maine Department of Public Safety, MaineDOT, Maine Turnpike Authority, Bureau of Highway Safety, local law enforcement.
- **Timing:** Ongoing

Regional Impaired Driving Task Force Teams for enforcement efforts by the Cumberland County and York County Regional Impaired Driving Enforcement (RIDE) Teams. The regional teams will conduct numerous saturation patrols and sobriety checkpoints in selected locations (using crash data) throughout their jurisdictions.

- **Reasoning:** Focus enforcement in key areas.
- **Lead:** Bureau of Highway Safety and selected police and sheriff agencies
- **Timing:** Ongoing

Initiate use of a Breath Alcohol Testing Vehicle (a mobile command unit that will assist Maine law enforcement in their dedicated efforts to combat impaired driving). This mobile unit will work with the RIDE Teams and other LEA's. The TSRP is encouraged by NHTSA and proven effective in the fight against impaired driving.

- **Reasoning:** Assist law enforcement in impaired driving work.
- **Lead:** Bureau of Highway Safety
- **Timing:** Purchase in 2015

Provide Impaired Driving High Visibility Enforcement Campaigns through dedicated overtime costs. This would allow law enforcement agencies to participate in impaired driving enforcement details and checkpoints including those that support NHTSA national campaigns. The Drive Sober, Maine campaign was designed to further combat the impaired driving problem in the state of Maine outside of the two-week national campaign(s). Agencies in the counties with the highest alcohol-related crashes may receive larger grant awards.

- **Reasoning:** Provide focused enforcement.
- **Lead:** Bureau of Highway Safety
- **Timing:** Ongoing

Provide specialized law enforcement training. Funds will support specialized training, travel and materials for state, local, and county law enforcement. Training would include standardized field sobriety testing, Advanced Roadside Impaired Driving Enforcement (ARIDE), drug recognition, and blood draws in the campaign against driving under the influence of drugs and alcohol. The number of drug recognition experts (DREs) in the state has declined over the last couple of years. At one point, there were 120 DREs in the state, but currently there are approximately 80.

This drop can be attributed to the proficiency test requirements. In some jurisdictions, officers are not often called upon to perform a DRE function, which makes it difficult for them to meet the requirement.

- **Reasoning:** Enhance and expand impaired enforcement capabilities.
- **Lead:** Bureau of Highway Safety
- **Timing:** Initiate in late 2014

Conduct a Maine Impaired Driving Summit that will work with partners from AAA and the Office of the Maine Secretary of State to increase awareness of the growing issue of drug impairment and driving.

- **Reasoning:** Educate and elevate awareness of drugged driving issues.
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

Purchase PBT mobile breath testing device equipment (up to 50 for law enforcement and the Maine Criminal Justice Academy) to enhance sobriety and safety checkpoints and to assist with the Standard Field Sobriety Test (SFST) training.

- **Reasoning:** The use of these devices will further enhance the training and enforcement of impaired driving throughout the state.
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

Utilize a Judicial Outreach Liaison to be responsible in developing a network of contacts with judges and judicial educators to promote judicial education related to sentencing and supervision of DWI offenders, court trial issues and alcohol/drug testing and monitoring technology.

- **Reasoning:** To identify barriers that hamper effective training, education or outreach to the courts and recommend alternative means to address these issues and concerns.
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

Provide blood drug testing. According to the National Highway Traffic Safety Administration's (NHTSA) 2007 National Roadside Survey, more than 16 % of weekend, nighttime drivers tested positive for illegal, prescription or over-the-counter drugs. More than 11 % tested positive for illicit drugs. This will allow Maine to test blood for drugs and gather data to assist us with our efforts to decrease impaired driving crashes and fatalities.

- **Reasoning:** Maine has been identified as being deficient in testing blood for drugs in deceased and alive drivers involved in a fatal crash.
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

Continue law enforcement training in Advanced Roadside Impaired Driving Enforcement (ARIDE). Enforcing the Underage Drinking Laws (EUDL) taskforce is creating an educational guide/tool kit/training for law enforcement on how to use media to complement enforcement efforts.

- **Reasoning:** Train law enforcement officers to better recognize signs and symptoms of alcohol and drug impairment.
- **Lead:** Maine Criminal Justice Academy
- **Timing:** Ongoing

Other strategies being considered:

- **Build BHS and Maine's Office of Substance Abuse and Mental Health Services (SAMHS)** communication/collaboration on evidence-based interventions, such as the Driver Education and Evaluation Program (DEEP) to increase system effectiveness to reduce recidivism.

Training software development through NHTSA for standardized online training.

- **Reasoning:** Officers who were trained in earlier, outdated Standard Field Sobriety Testing (SFST) models need easy access to receive the most current training and the ability to refresh their training on a regular basis. JPMA currently produces the online mandatory training for the Maine Criminal Justice Academy.
- **Lead:** NHTSA is developing software
- **Timing:** Anticipate availability within a year

Add a position of Traffic Safety Resource Prosecutor (TSRP), likely assigned to either Maine BHS or the Attorney General's Office.

- **Reasoning:** Frequently, relatively new assistant district attorneys are assigned to prosecute impaired driving cases and are contending with defense counsels who often are specially trained to deal exclusively with impaired driving cases. Additionally, drug-impaired driving cases and fatal motor vehicle crashes require additional specialized training. A state level TSRP, which most other states have, would provide that specialized resource to assist prosecutors to prepare for trial, and even assist in prosecution of serious cases.
- **Lead :** Bureau of Highway Safety
- **Timing:** Dependent on funding

Note: Given challenges related to medicinal marijuana use, provide training/technical assistance for law enforcement around marijuana-specific impaired driving.

Distracted Driving

Our Challenge

Distracted driving has received heightened public and media attention recently with a general agreement that driving does demand full-time attention. However, this doesn't mean everyone is changing their behavior. As mobile technology evolves at a breakneck pace, more and more people rightly fear that distracted driving – texting, e-mails, phone calls and more – is a growing threat on the road. Distractions can be visual, manual or cognitive.

- Driver inattention is a major contributor to highway crashes. The National Highway Traffic Safety Administration estimates that at least 25% of police-reported crashes involve some form of driver inattention.
- AAA Foundation for Traffic Safety research found that young drivers (under 20 years of age) are the most likely to be involved in distraction-related crashes, but young drivers are not the only ones with distracted/inattentive driving tendencies.
- AAA Foundation for Traffic Safety explains distraction as when a driver "is delayed in the recognition of information needed to safely accomplish the driving task because some event, activity, object, or person within or outside the vehicle compels or induces the driver's shifting attention away from the driving task." The presence of a triggering event distinguishes a distracted driver from one who is simply inattentive or "lost in thought."
- It is difficult to accurately collect this information at the crash scene since drivers won't always volunteer what led to the crash.
- As roads grow more congested and the demands on drivers increase, it seems likely that new in-vehicle technologies will add even more potential distractions. (AAA Foundation for Traffic Safety)

Maine's crash reporting system went through a significant update in 2011, including how distracted driving crash data is captured. In the pre-2011 crash report, there was a contributing factor "Driver Inattention-Distraction" where an officer could indicate general driver inattention when the crash circumstances clearly pointed to that. The new report form, adopted by law enforcement agencies during 2011, now has a dedicated "Driver Distracted By" section that indicates very specific distraction types such as "Electronic Communication Devices" (cell phone, pager, etc.). A driver would usually need to self-report the distracted activity or a credible witness would need to report it. The general inattention aspect is no longer captured, so there is a significant drop in what is reported for distracted driving. The reporting change was instituted to better categorize the types of distractions that lead to crashes. Since law enforcement agencies adopted the new reporting format at different times throughout the year, 2011 distracted data is partial. There also is not enough data from the new distracted driving criteria to define a five-year annual average.

Maine enacted a Distracted Drivers law that became effective on September 12, 2009 that includes this definition: "Operation of a motor vehicle while distracted" means the operation of a motor vehicle by a person who, while operating the vehicle, is engaged in an activity:

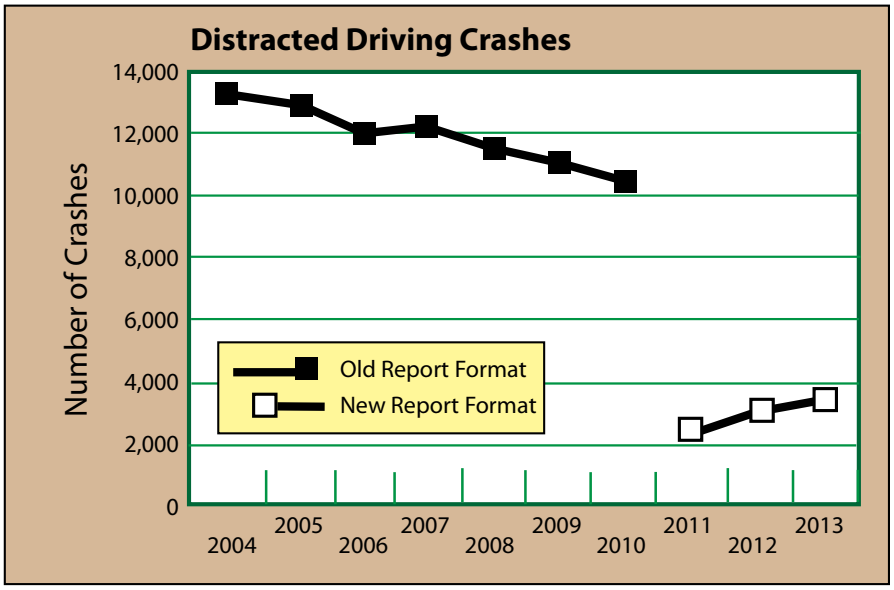
(1) that is not necessary to the operation of the vehicle; and

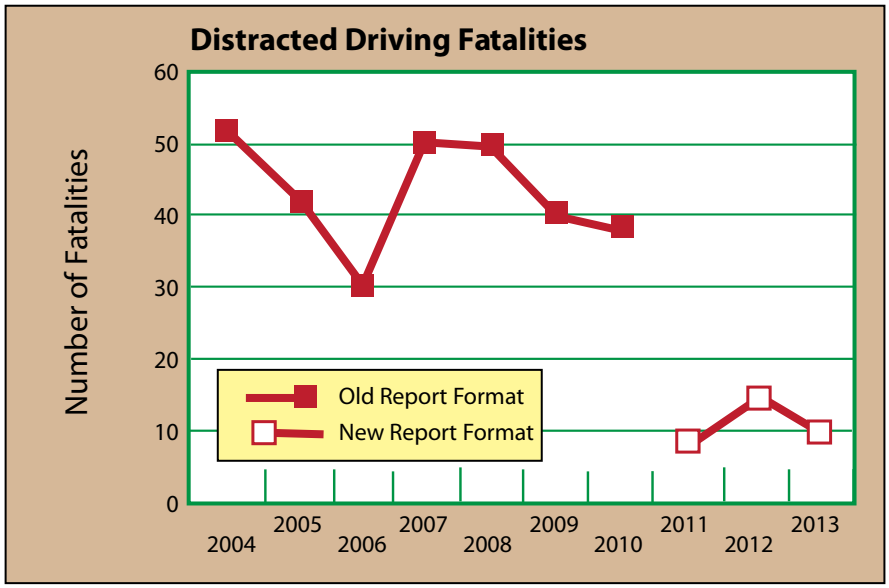
(2) that actually impairs, or would reasonably be expected to impair, the ability of the person to safely operate the vehicle.

- In 2011, the following texting-specific Maine law was added: "A person may not operate a motor vehicle while engaging in text messaging."

Our Goal

Reduce distracted driving-related fatalities 10.5% by 2016.





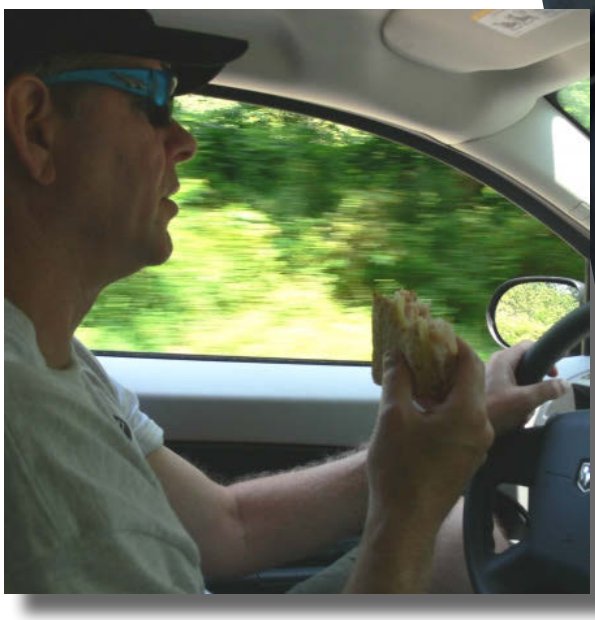
Distracted Driving Strategies

Increase public awareness of the dangers of distracted driving. Unlike the social stigma surrounding drinking and driving, driving while texting, emailing or talking on the phone aren't perceived as unacceptable behaviors despite overwhelming scientific evidence of the serious crash risk these behaviors pose.

- **Reasoning:** There is a crucial disconnect between public perception of distracted driving and one's own personal behavior. Providing educational materials would aid in helping the public understand the true risks of their actions. A concerted effort should include all agencies/advocates providing a consistent message to all age groups.
- **Lead Agency:** Bureau of Highway Safety/AAA Northern New England
- **Timing:** Ongoing

Provide simulated distracted driving education to educate Maine drivers about the dangers of distracted driving, including texting while driving. The Maine Bureau of Highway Safety's distracted driving simulators, safety presentations and marketing materials will be used. Outreach is geared towards pre-permitted and newly permitted teens at middle schools and high schools. This project will also reach the 40-45 year old demographic for which our data indicate a higher incidence of distracted driving crashes.

- **Reasoning:** Improve driver awareness of safety impact of distracted driving.
- **Lead Agency:** Bureau of Highway Safety
- **Timing:** 2015



Conduct high visibility distracted driving enforcement (including texting). Enforcement locations will be selected depending on their historical distracted driving crash activity. Similar efforts in other states targeted drivers using cell phones. Studies conducted during and after this campaign revealed a 50% reduction in the observed cell phone use rate while driving.

- **Reasoning:** Establish public awareness that law enforcement is focusing on distracted driving.
- **Lead Agency:** Bureau of Highway Safety and law enforcement agencies
- **Timing:** Ongoing

Enrich Maine's current distracted driver law by encouraging policy-makers to support legislation that would prohibit texting while driving.

- **Reasoning:** A majority of Maine drivers (94%) support laws against reading, typing or sending text messages or emails while driving, according to AAA Northern New England public affairs survey.
- **Lead Agency:** AAA Northern New England
- **Timing:** Ongoing

Support the enforcement community in their efforts to curb distracted driving.

- **Reasoning:** High visibility enforcement has been shown to change driver behavior, including programs such as "Click It or Ticket." By adopting the "Put It Down" campaign and making available materials and funding to local and state law enforcement, it would follow that this campaign would also be successful in changing driver behavior.
- **Lead Agency:** Bureau of Highway Safety
- **Timing:** Ongoing

Provide public education through tractor trailer wraps messaging. Messaging will focus on distracted driving of our media partner and will be a public outreach campaign incorporating delivery trucks from three cities in Maine: Portland, Augusta, and Bangor. These trucks display both a Maine-specific distracted driving message and the NHTSA "One Text or Call Could WRECK it All" message. This effort will be coupled with high visibility enforcement to create a program that combats distracted driving from multiple avenues, all conveying the same message. This effort may also produce similarly themed posters and other promotional material to further public awareness.

- **Reasoning**: Coordinated campaign to address distracted driving.
- **Lead:** Bureau of Highway Safety
- **Timing:** 2014 and ongoing

Mature Drivers

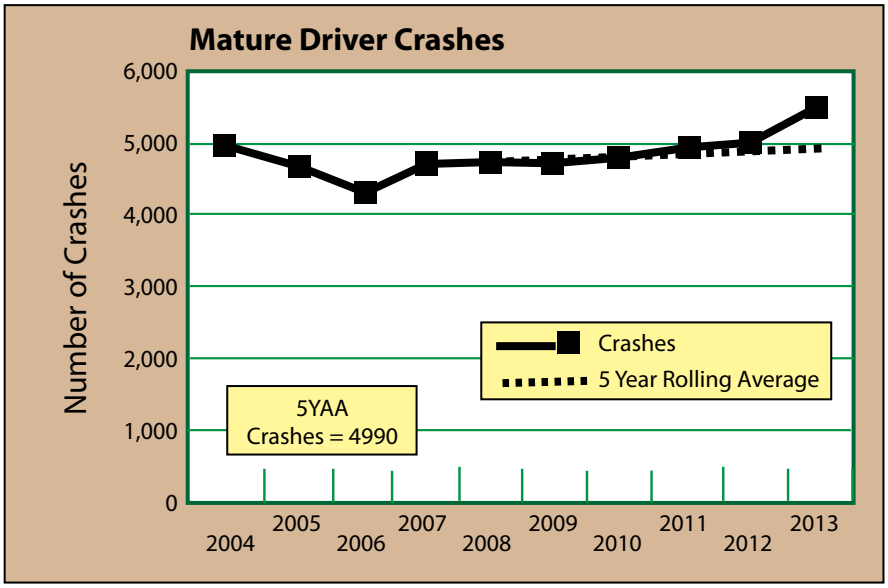
Our Challenge

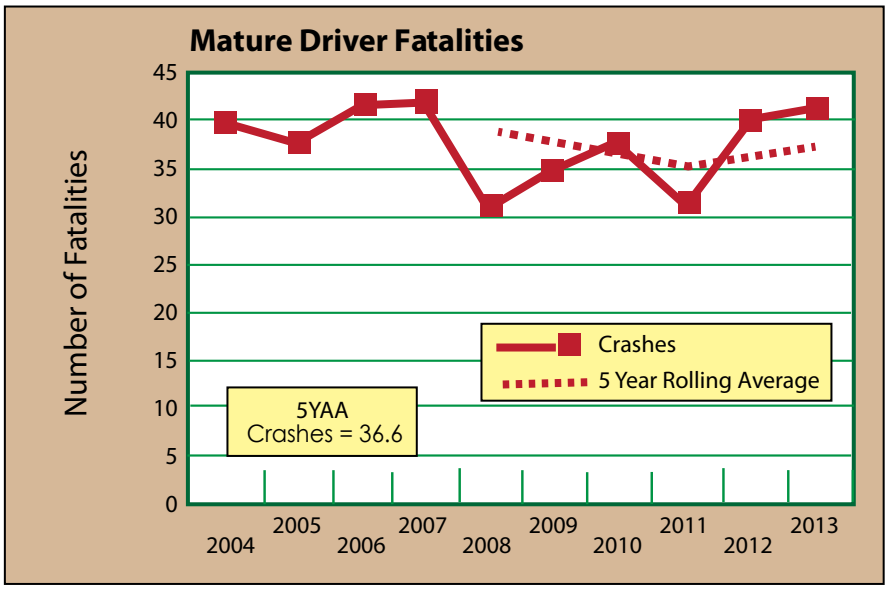
Mature Drivers are defined as age 65 and older. Maine is the "oldest" state by median age (42); 4th oldest by percent (15%) of its population over 65. This proportion is expected to rise to 26.3% by 2030, surpassed only by Florida. Maine is the second-fastest aging state after Virginia. As we lead the nation in aging, policies we develop to address our aging population may show the way for other states. Drivers over age 65 experience more crashes per mile driven than any age group except 16-year-olds according to national and Maine studies. The crashes are 1.7 times more likely to lead to serious injury or death than for drivers ages 25-65. The reasons for higher crash and injury rates are twofold:

1) gradually diminishing physical, sensory and cognitive capabilities, often exacerbated by medications and specific conditions; and
2) increasing physical frailty, which renders motor vehicle crashes more grave for the elderly drivers themselves.

While urban drivers have more crashes, rural crashes are more likely to be fatal. Seatbelt use doesn't protect older drivers as well as it does younger ones. Seniors over 65 in fatal crashes were belted 67% of the time compared to 41% for all others. This means there is a relative risk of a fatality while using a restraint of 1.6. Mature drivers are involved in an average of 5,000 crashes each year resulting in 37 fatalities. Leading crash characteristics are different than those for younger drivers. They include:

- Carelessness or inattentiveness
- Failure to keep in proper lane
- Failure to yield the right of way
- Failure to obey traffic signs, traffic control devices, or safety zone laws and
- Drowsy, sleepy, asleep or fatigued.


Mature Driver Crashes
Number of Crashes
6,000
5,000
4,000
3,000
2,000
1,000
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Crashes
5 Year Rolling Average
5YAA
Crashes = 4990


Mature Driver Fatalities
Number of Fatalities
45
40
35
30
25
20
15
10
5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Crashes
5 Year Rolling Average
5YAA
Crashes = 36.6

SUPER
AYTINAL

Our Goal

Prevent an increase in the number of crashes and fatalities involving mature drivers as the total population of mature drivers increases.

- **Reduce mature driver fatalities by 10.5% by 2016 (from 37 to 33.3).**
- **Upgrade mature driver screening by 2016.**

Mature Driver Strategies

To address these issues in Maine, the Maine Senior Driver Coalition was formed in the spring of 2009. The coalition began with concerned Mainers from varied backgrounds and representing several interested groups of state and private organizations. The group has expanded over the past year and a half to include representatives from clinical geriatricians, social workers and occupational therapists, public health, the Maine Bureau of Motor Vehicles, AARP, the American Automobile Association, Independent Transportation Network-America, the Maine Chiefs of Police, the Maine Office of Elder Services, the Maine Bureau of Highway Safety, the Maine CDC Injury Prevention Program, the Maine Department of Transportation, a state legislator, and others.

Identify enhanced self-screening tools to help seniors recognize driving issues. Develop outreach strategies to introduce the tools to drivers and families most likely to be facing driving transitions. One tool is a battery of tests available through the American Automobile Association's Roadwise Review.

- **Reasoning:** Self assessment can lead to early identification of driver issues.
- **Lead:** AAA Northern New England
- **Timing:** Ongoing development

Bureau of Motor Vehicles' Senior Driver Assessment Project (SDAP) focuses on identifying and addressing organizational, legal and budgetary issues related to adapting driver test batteries trialed in other states. This project will direct the development of a policy proposal for Maine.

- **Reasoning:** Current evaluation methods do not include cognitive skills testing which should be part of the evaluation process.
- **Lead:** Secretary of State, Bureau of Motor Vehicles
- **Timing:** Ongoing development

The linking testing and transportation project will work with senior transit providers in two regions of the state to build a system that offers effective service to senior drivers.

- **Reasoning:** Alternative transportation will allow seniors to have transportation options after their driver's license has been retired.
- **Lead:** Uncertain at this time
- **Timing:** Ongoing

Use Maine crash data and BMV moving violation data to evaluate mature driver performance in counties where driver interventions have been introduced and compare safety performance with other counties.

Provide self-screening and public education seminars for primary care physicians to provide a high-level overview of their role in assessing capabilities to drive safely. AAA has a self-screening tool "Roadwise Review." AAA has been hosting various senior forums and fairs around the state and presenting their "Keeping the Keys" program at these events. Additionally, the coalition is exploring strategies for publicizing these two programs along with AARP's "We Need to Talk".

BMV is exploring the possibility of participating in an American Association of Motor Vehicle Administrators (AAMVA) pilot study using a cognitive screening tool program called **Safe Driving BASICS to address the testing battery used at license renewal.**

- **Reasoning:** Improve self, family and clinical abilities to identify deterioration in driving abilities.
- **Lead:** Bureau of Motor Vehicles
- **Timing:** Ongoing

Identify opportunities for improving sign letter sizes and reflectivity as well as pavement markings/striping to enhance driver cues, particularly at night.

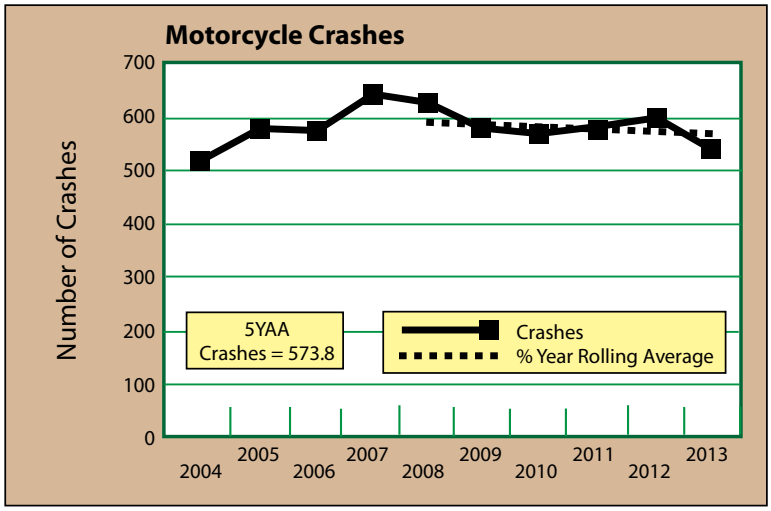
- **Reasoning:** Improve night time driver identification of signs and roadway lane locations.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Motorcycles

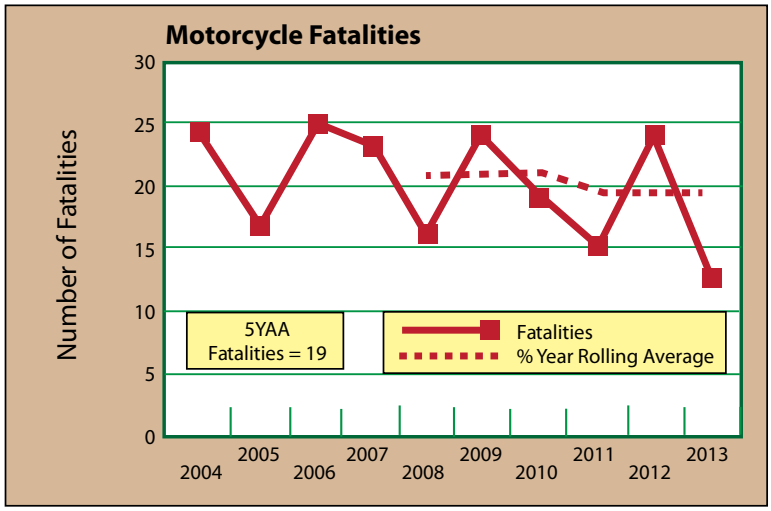
Our Challenge

Motorcycling in the state of Maine is a passion for many riders. This state offers tremendous scenery and creates quite a grand motorcycle riding season.

Motorcycle crashes resulted in 13 fatalities in 2013, which was a decrease from the 24 fatalities that occurred in 2012. The number of fatalities in 2013 was also below the average number of fatalities for the previous four years, which was 21. The number of motorcycle registrations has hovered around 50,000 since 2009, and the slight changes in this number have not led to significant changes in the rate of fatalities.



Motorcycle/scooter crashes will be a trend to watch with fuel costs causing travelers to consider cheaper transportation modes. These riders are much more susceptible to serious crash injury.



Ten-year crash and fatality trends are, on average, stable. Motorcycle registrations have steadily increased during this period. Motorcycle crash data shows that:

- Helmets were not worn by about 2/3 of the riders killed.
- Average age of motorcycle operators fatalities during 2009 to 2013 was 45.2years.

YEAR	FATALITIES	NO HELMET	BAC 0.08+
2000	18	15	6
2001	14	5	3
2002	13	8	2
2003	20	13	5
2004	22	12	7
2005	15	9	6
2006	23	15	4
2007	21	15	5
2008	18	13	2
2009	24	19	9
2010	19	11	4
2011	15	11	6
2012	24	14	10
2013	13	11	3
TOTAL	**259**	**171**	**72**

Our Goal

- **Reduce motorcycle crash fatalities by 10.5% by 2016 (from 19 to 17).**
- **Increase motorcycle rider education opportunities for experienced riders.**
- **Increase law enforcement efforts.**

Motorcycle Strategies

Increase participation in a novice rider hands-on motorcycle rider education course.
Enlist motorcycle dealerships, motorcycle groups, motorcycle rider education schools and other state agencies to promote the courses.

Garner support from the motorcycle rider education community and other parties interested in motorcycle safety.

- **Reasoning:** Hands-on rider education offers skills in a controlled environment to develop the ability and confidence of novice riders. These skills can be life-saving and ultimately contribute to a reduction in motorcycle crashes and fatalities
- **Lead:** Bureau of Motor Vehicles
- **Timing:** In the next 3 to 5 years depending on funding

Market existing experienced rider courses by:
Development of television, radio, and print advertisements, as well as social media internet resources, to promote the benefits of experienced rider courses.

Engage motorcycle dealers to offer discounts (to help absorb course fees) with the purchase of a new or used motorcycle.

Create bumper stickers, magnets, T-shirts and other items to promote experienced rider education.

Engage insurance companies to promote experienced rider courses through existing resources including insurance rate discounts.

- **Reasoning:** Novice rider courses impart basic skills. Experienced rider courses expand on the basic skills and provide an opportunity for riders to become familiar with their personal motorcycle. These avanced skills provide further tools for motorcyclists to avoid crashes and/or fatalities.
- **Lead:** Bureau of Motor Vehicles, Bureau of Highway Safety
- **Timing:** In the next 3-5 years, depending on funding

Objective:

Promote legal riding.
If summonsed for unlicensed riding, completion of a motorcycle rider education course would negate the charge, provided the course was completed within a prescribed time frame.

Promote the benefits of legal motorcycle riding.

- **Reasoning:** Unlicensed riders contribute greatly to crashes and fatalities. Encouraging licensing and rider education for alternative sentencing will provide a rider an opportunity to come into compliance and hopefully realize the value of being properly licensed.
- **Lead:** Law enforcement agencies
- **Timing:** In the next 3 to 5 years, depending on funding

Conduct motorcyclist safety training including measures designed to increase the recruitment or retention of motorcyclist safety training instructors. In order to retain our current instructors, the Maine BMV in partnership with MeBHS will hold an annual Motorcycle Rider Instructor Training Meeting. This meeting will enable the BMV to give annual training updates to all instructors and, by attending the training, maintain their national motorcycle rider instructor training certification.

- **Reasoning:** Maintain quality motorcycle safety instruction.
- **Lead:** Bureau of Motor Vehicles and Bureau of Highway Safety
- **Timing:** Ongoing

Develop Motorcycle Rider Training Course Materials Updates including improvements to motorcyclist safety training curricula and instructional materials.

- **Reasoning:** Maintain current materials.
- **Lead:** Bureau of Motor Vehicles and Bureau of Highway Safety
- **Timing:** 2015

Provide sponsorships for participants in the Experienced Rider Training Course. Maine BMV offers a BRC-2 Experienced Motorcycle Rider Training Course to Maine residents who currently have their Motorcycle Endorsement. The course is designed to enhance the skills that have been developed through on-road motorcycle rider experience and provide additional, useful safety information to experienced riders. Enrollment in these courses, over the past years, has been declining yet Maine has developed a way to increase participation in this course. According to NHTSA and the Maine BMV, many motorcycle riders are not properly licensed. In 2009, 22% of motorcycle riders involved in fatal crashes did not have valid motorcycle licenses, compared to 12% of passenger vehicle drivers who were not properly licensed. The intention is to provide an incentive to those riders who:

(1) Choose to operate without a license by providing an avenue to become licensed and learn about rider safety and how it affects them; and

(2) Have their license, but participate in this course in order to hone their skills or to receive new updated safety information that may enable them to become even better riders.

- **Reasoning:** Improve training outreach.
- **Lead:** Bureau of Motor Vehicles, Bureau of Highway Safety, and United Bikers of Maine
- **Timing:** 2015

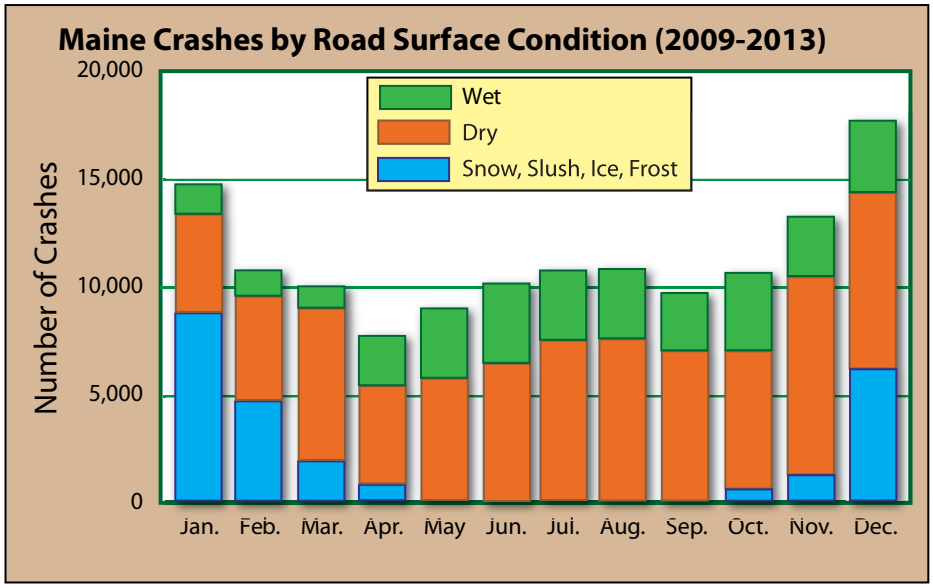
Develop motorcycle public service announcements to encourage experienced rider education.

- **Reasoning:** Increase motorcycle safety education by increasing the number of riders who take this course. Education helps to correct unsafe driving habits that may have been established over years of riding. It also helps to educate riders with new information previously unknown to the experienced rider.
- **Lead:** Bureau of Highway Safety
- **Timing:** 2015

Winter Crashes

Our Challenge

5,400 winter crashes account for nearly 20% of Maine's annual crashes. The months of January and February have the greatest amount of snowfall. However, crash activity is highest in December as drivers adjust to wintry road surfaces, and the ice, snow and slush conditions. Run-off-road and head-on collisions on wintry roads double in proportion to those on dry roads. This indicates the degree of vehicle control issues at that time. Not surprisingly, police crash reports cite driver 'unsafe speed' three times as often when wintry road conditions exist.



Our Goal

- **Reduce five-year annual average winter surface conditions related fatalities by 10% by 2016.***
- **Reduce five-year annual average winter surface conditions related crashes by 5% by 2016.***

*A five year annual average was selected in an attempt to compensate for the year-to-year variability of storm numbers, intensity, location and timing. Long term trends are a better indicator for measuring success in this area.

Winter Driving Strategies

Enhance detection capabilities of roadway weather conditions.

- Use crash data to identify and analyze high crash locations where winter surface conditions play a significant role.
- Where appropriate, use technology such as Roadway Weather Information Systems and pavement sensors to alert maintenance responders to changes in surface conditions.
- Employ the use of mobile weather instruments, such as pavement temperature and humidity sensors, on maintenance and patrol vehicles during periods when road conditions may deteriorate.
    - **Reasoning:** Providing advance notice to maintenance crews, as well as motorists, about changing road conditions will allow drivers to adjust for these changes and allow crews to treat roadways sooner.
    - **Lead:** MaineDOT, Maine Turnpike Authority
    - **Timing:** Ongoing

Decrease or eliminate response times for maintenance crews when treating roadways (interstates and major arterials) during winter storms.

- Marry the opportunities, presented by the increased use of Roadway Weather Information Systems, with methods and protocols that allow for the rapid notification of maintenance crews when surface conditions deteriorate.
- Where and when appropriate, increase the practice of pre-treating roadways with anti-icing materials prior to storms.
    - **Reasoning:** Pretreating roadways and decreasing the response time of maintenance crews shortens the duration of "winter surface conditions" that are encountered at the beginning of many winter storms. A decrease in the duration of these conditions results in a decrease of drivers who encounter these conditions.
    - **Lead:** MaineDOT, Maine Turnpike Authority, municipal highway departments.
    - **Timing:** Ongoing

Increase public awareness of the hazards of winter driving, and educate drivers on appropriate driving techniques to use in these conditions.

- Enhance and utilize existing TV "Winter Driving Tips" commercial at strategic times (predicted winter storms) through media buys in selected markets.
- Market the same Winter Driving Tips messaging via appropriate websites and print media throughout the winter driving season.
    - **Reasoning:** Statistics suggest that drivers are most likely to be involved in winter-conditions-related crashes early in the winter, before they have adjusted their driving habits. This campaign reinforces the need to adjust driving practices before encountering inclement conditions.
    - **Lead:** MaineDOT
    - **Timing:** Ongoing, specifically during the winter season and prior to predicted winter weather events.

Provide dynamic sign messaging at key interstate road locations advising motorists of wintry conditions and reduced speed limits.

- **Reasoning:** Safety advisory of changing conditions.
- **Lead:** MaineDOT and Maine Turnpike Authority
- **Timing:** Ongoing

Intersection Crashes

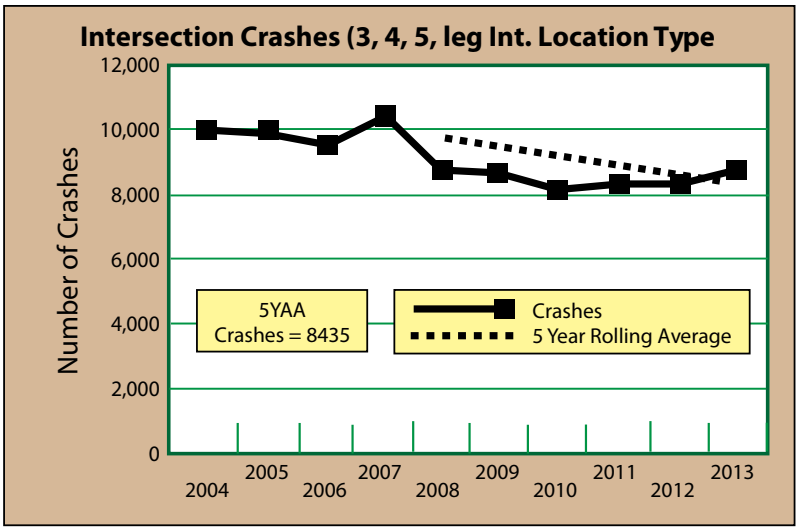
Our Challenge

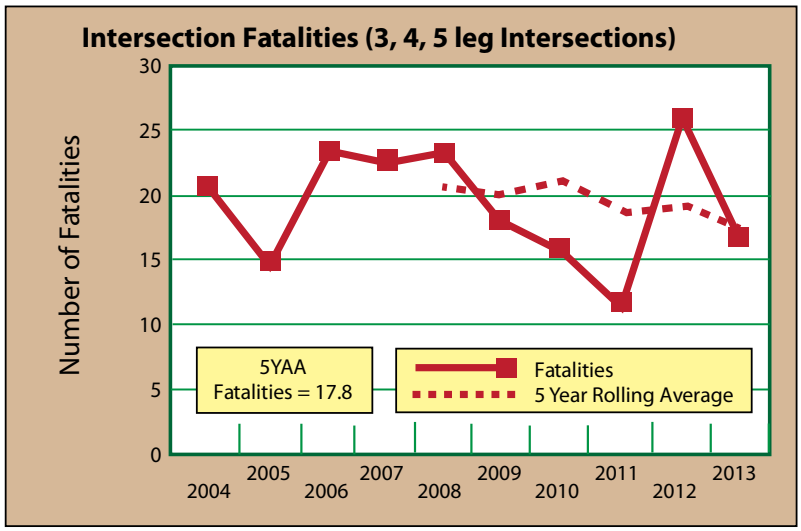
Intersections are a common crash location. Drivers need to be observant, make proper decisions and follow the rules of the road.

Common crash types that occur annually at intersections include rear-end crashes (4,150) and intersection crashes (3,100). About 110 of these crashes at intersections involve bicyclists and 110 involve pedestrians. An additional 750 crashes occur annually at Maine roundabouts.

Drivers had the following contributing factors reported in the most recent five-year period:

- Driver inattention/distraction –21,600
- Failure to yield right of way –11,800
- Following too close – 9,000
- Illegal/unsafe speed –3,400
- Ran red light or stop sign – 3,300
- Improper turn –1,900





Our Goal

Reduce intersection fatalities by 10.5% by 2016 (from 17.8 to 15.9).

Intersection Crash Strategies

Evaluate/identify the locations of most concern

- Desktop analysis – Review data (number of crashes, crash severity, critical rate factor) to develop a list of high crash locations for review.
- Solicit input from regions/municipalities.
- Evaluate high pedestrian/bike crash activity.
- Evaluate performance of past safety projects and review as necessary.
    - **Reasoning:** To best determine the most deserving candidates for safety funds.
    - **Lead:** MaineDOT
    - **Timing:** Ongoing

Develop solutions for reviewed locations

Crash diagrams, photos, traffic data, and other gathered information are used by a team of engineers and traffic professionals to develop a scope of work that will best correct the safety issues at every reviewed location.

Cost estimates are developed and applied to crash data to give a benefit/cost score to each project.

Projects are funded based on benefit/cost score and available funds.

- **Reasoning:** To determine the most effective and reasonable safety fixes for problem locations.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Alternative Solutions

Use roundabouts and "outside the box" methods to correct problem intersections.
Evaluate lower-cost/simpler solutions where applicable.

- **Reasoning:** To find new, innovative, and cost-effective solutions to common problems.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Enforcement

Work with law enforcement professionals to identify problem intersections.
Pursue law enforcement presence as a means to safer intersections where possible.

- **Reasoning:** To make intersections safer through law enforcement.
- **Lead:** Local, state, and county law enforcement
- **Timing:** Ongoing

Note: Intersections are a common location where distracted driving occurs. The work being done with the distracted driving group needs to address distracted driving at intersections.

Provide improved pavement markings (striping and stencils) that are durable and reflective. Some may be recessed to improve durability.

- **Reasoning:** Provide higher visibility of crosswalk locations.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Provide reflective back plates on traffic signals and improve the tethering of signal heads.

- **Reasoning:** Provides higher signal visibility in sun-glare and nighttime conditions, and stabilizes signals in heavy winds.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Provide flashing beacons at selected stop signs.

- **Reasoning:** Provides added visibility to stop signs, especially at locations where traffic control devices may have changed.
- **Lead:** Local, state, and county law enforcement
- **Timing:** Ongoing

Large Trucks and Commercial Buses

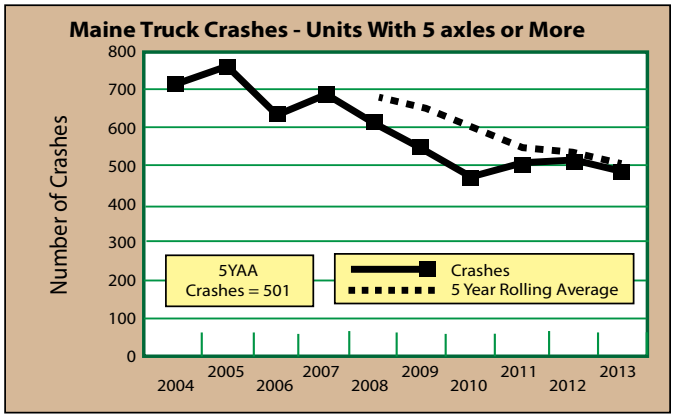
Our Challenge

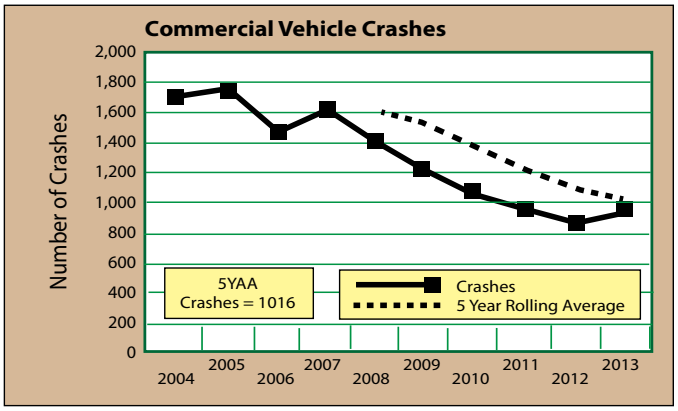
Large trucks are a concern due to the size and load differential between larger trucks and passenger vehicles. There is also focus on fatigue related to long haul operations. Overall, truck crash and fatality rates have improved over the years, but the fatality rate has decreased at a slower rate.

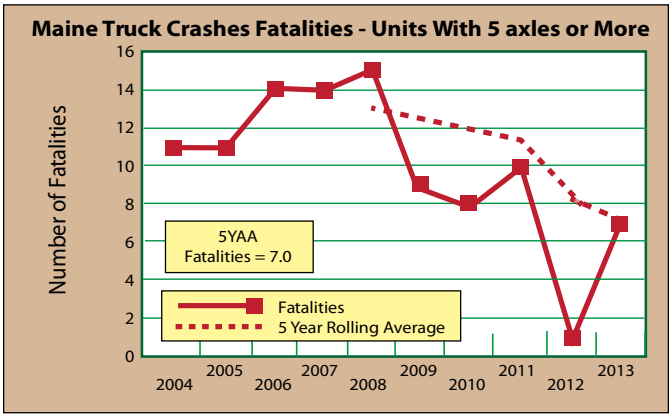
Commercial buses are an important segment due to the number of passengers being carried both on in-state routes and out-of-state charters.

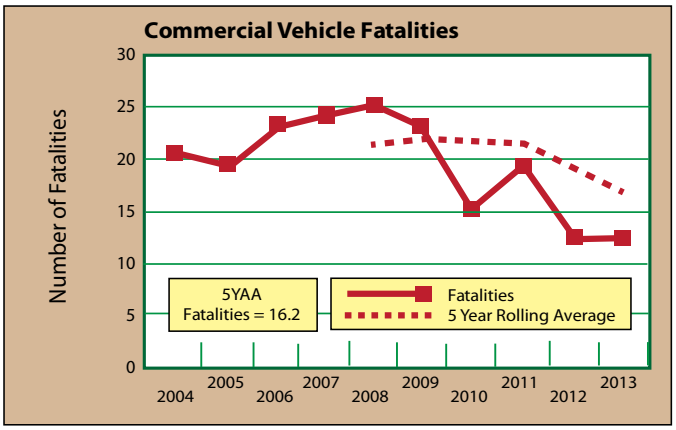
Our Goal

- Reduce large truck crash fatalities by 10.5% by 2016 (from 7.0 to 6.3).
- Reduce large truck crashes on secondary roads by 10.5% by 2016 (from 501 to 448.7).









Large Truck Strategies

Pursue targeted enforcement efforts that will lead to educational opportunities. Every time enforcement interacts with commercial drivers, there is an opportunity to educate these drivers on the importance of seat belt use, distracted driving, aggressive driving, driver fatigue and overall driver professionalism.

- **Reasoning:** Education through enforcement can lead to improved safety behavior.
- **Lead Agency:** Maine State Police
- **Timing:** Ongoing

Effectively communicate the importance of safety regulatory compliance as a means to increase safety awareness. The Bureau of Motor Vehicles has contact information for all Maine carriers with a DOT number, that can be used to send out a reminder of issues they need to consider such as drug and alcohol requirements, seat belt use, log books, medical cards, Driver Vehicle Inspection Reports (DVIRs), comprehensive safety analysis and the importance of pre- and post-trip inspections.

- **Reasoning:** Regulatory compliance promotes safety awareness.
- **Timing:** Letter can be developed and mailed at any time
- **Lead:** Bureau of Motor Vehicles

Commercial Buses: The Maine State Police will continue to conduct educational outreach and focused enforcement efforts on the passenger-carrying industry. This will be done by roadside inspections and company audits. By obtaining compliance, these companies will continue to operate safely.

USED CARS
HIGHT
OVERSIZE LOAD
STATE POLICE
MAINE
625
STATE POLICE

Pedestrians/Bicycles

Our Challenge

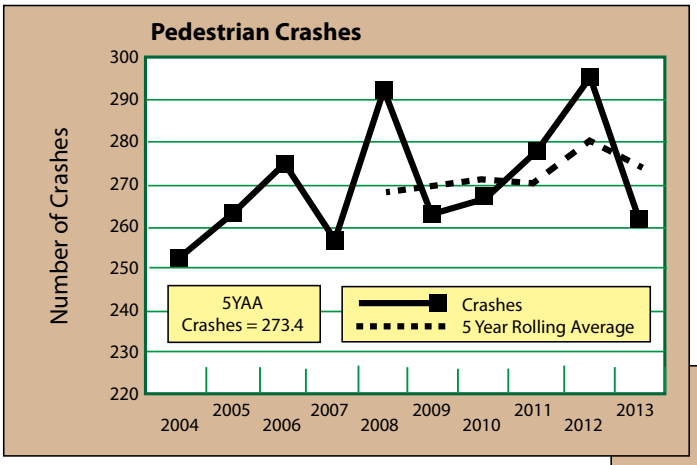
Teenagers, the elderly, people with disabilities, and those with financial limitations often have no means of travel other than walking. Providing a safe place to walk and bike is essential for these and other users of the transportation system. In Maine on average, a pedestrian is hit by a motor vehicle once a day. More than 90% of these pedestrian crashes involve injury or death to the pedestrian.

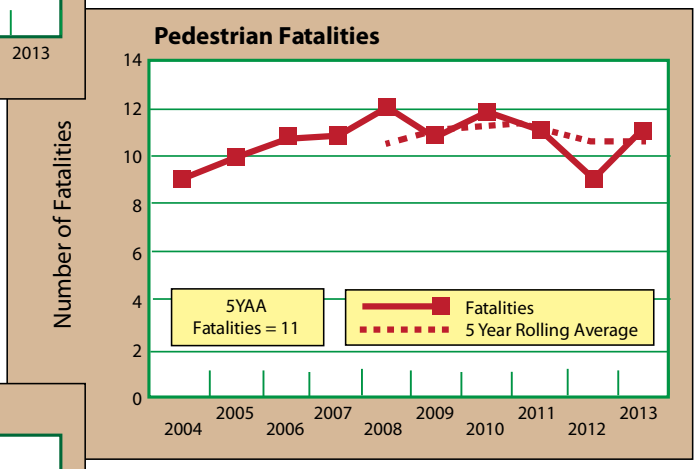
It is important for the safety of bicyclists and pedestrians that the road system includes sidewalks, shoulders, and safe crossings where needed and appropriate. It is also essential that bicyclists and pedestrians are educated regarding safe behaviors including the need to dress brightly and to be aware of their surroundings. It is critical that drivers are educated on the importance of giving pedestrians and bicyclists plenty of space. All road users need to be taking the right precautions to assure the safety of others.

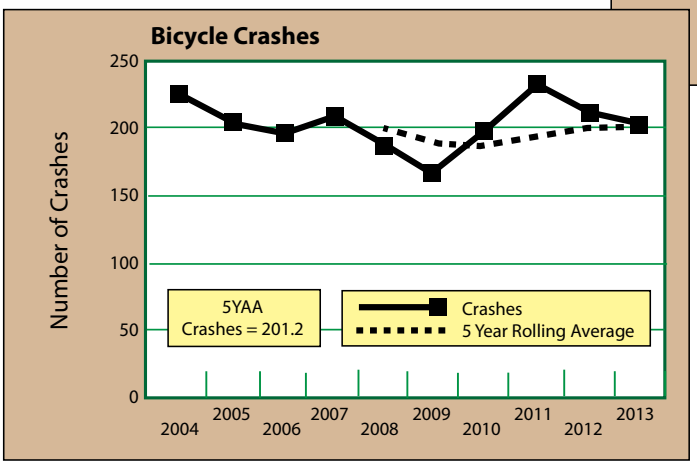
There have been 108 pedestrian and 18 bicycle fatalities over the last ten years. On seven out of every ten days, a pedestrian is hit by a motor vehicle and nearly 100% are injured.

Our Goal

- Reduce pedestrian-related crashes, injuries and fatalities on the transportation system by 10% by 2016 (from 11 to 9.7).
- Increase pedestrian safety awareness.
- Reduce bicycle-related crashes, injuries and fatalities on the transportation system by 10% by 2016.
- Increase bicycle safety awareness.







Pedestrian Strategies

Ensure pedestrian improvements, including sidewalks and crossing improvements, are made when warranted to improve pedestrian safety.

- **Reasoning:** Engineering solutions are vital to improving pedestrian safety and mobility.
- **Lead:** MaineDOT and local municipalities
- **Timing:** Ongoing

Educate municipalities, planners and advocates on the policies, processes, and funding opportunities available to improve pedestrian safety through road improvements, site visits, education, presentations and media campaigns.

- **Reasoning:** Many pedestrian improvement are locally driven, and education helps enable improved community environments.
- **Lead:** MaineDOT and local municipalities
- **Timing:** Ongoing

Maintain a web page that provides safety information, tools and resources for communities to identify deficiencies and solutions regarding the pedestrian infrastructure.

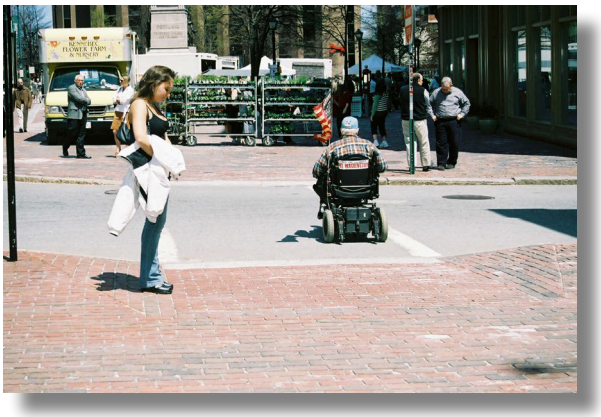
- **Reasoning:** Web resources can provide viable and efficient information.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Continue and expand state agency coordination regarding planning processes, policy implementation, outreach efforts and programming. This ensures that relevant state agencies are working towards well-planned communities with safe pedestrian infrastructure. Foster collaboration and partnerships among state and federal agencies, the private sector, and health, safety, and planning professionals. Improve coordination and partnerships with the myriad of groups working on improving conditions for walking.

- **Reasoning:** Coordination is essential to improving pedestrian safety by ensuring all agencies and groups are coordinating limited resources and efforts.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Improve state and local policies and ordinances to ensure that pedestrian connections are made, whenever feasible, as part of all road improvement projects, developments, site plan approvals, and traffic and environmental mitigation efforts.

- **Reasoning:** Policies, ordinances, etc. are crucial to ensure pedestrian improvements are made at the time of designing and constructing a new building or road where warranted.
- **Lead:** MaineDOT and local municipalities
- **Timing:** Ongoing



Continue a pedestrian safety signage and visible crossing program to install crosswalk and other safety-related signage in communities and on state roads. These improvements could include:

- High visibility pavement treatments;
- Rectangular rapid flashing beacons;
- Countdown signal upgrades;
- Electronic dynamic signs to advise motorists of pedestrian activity; and
- Four-sided raised pavement markers at crosswalks.

High visibility pavement treatments should be considered at select locations.

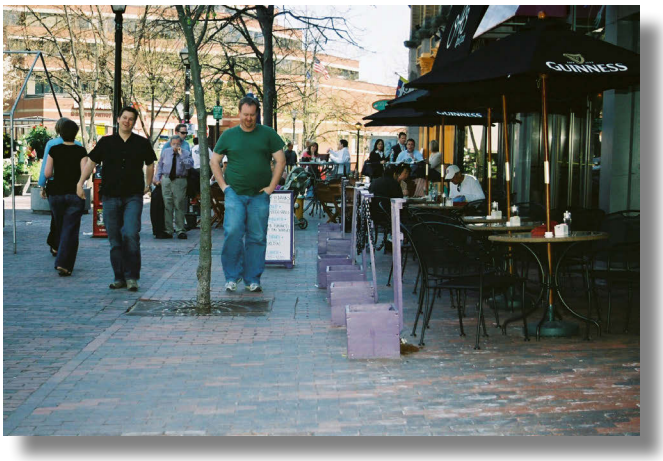
- **Reasoning:** Signage and improved visibility have been shown to be important in raising awareness of pedestrian environments, reducing speeds and improving safety
- **Lead:** MaineDOT
- **Timing:** Ongoing

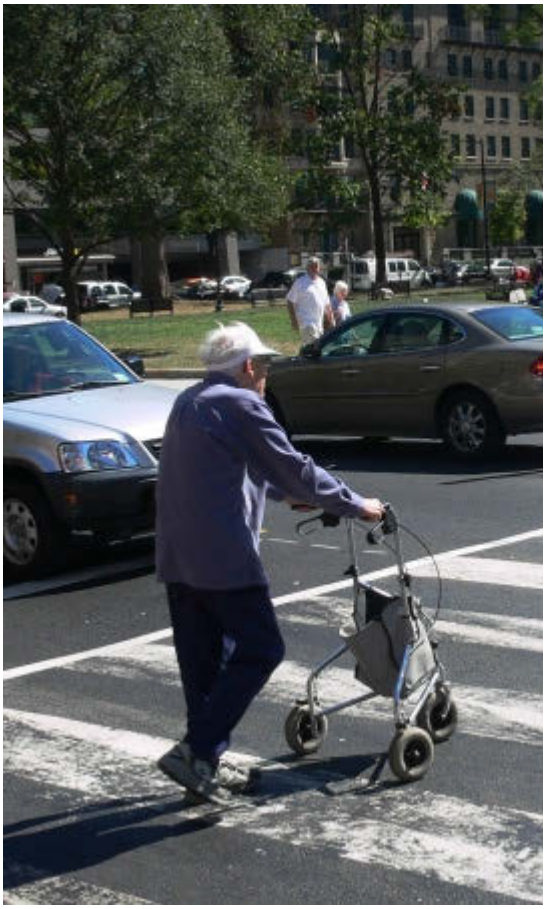
Continue safety awareness campaigns including Share the Road, pedestrian safety education programming in schools, law enforcement training, and the Safe Routes to School program.

- **Reasoning:** Education, enforcement, and encouragement efforts have been shown to improve safety behavior.
- **Lead:** MaineDOT, NHTSA, Maine Bureau of Highway Safety and FHWA
- **Timing:** Ongoing

Provide suicide prevention outreach in communities where bridge jumping is a particular concern.

- **Reasoning:** To support Maine's suicide awareness and prevention efforts.
- **Lead:** MaineDOT
- **Timing:** 2015 and ongoing





Bicycle Strategies

Coordinate bicycle improvements including paved shoulders, signage and bike lanes. Increase bicycle lane efforts to create defined bike lanes in urban areas to improve bicycle safety and to encourage the public to feel comfortable biking.

- **Reasoning:** Bicycle safety improvements are vital to improving bicyclist safety and mobility.
- **Lead:** MaineDOT and local municipalities
- **Timing:** Ongoing

Educate municipalities, planners and advocates on the policies, processes, and opportunities available to improve conditions for bicyclists through road improvements, site visits, educational programming, presentations and safety media campaigns.

- **Reasoning:** Many bicycle improvements are locally driven, and education helps enable improved safe bicycling environments.
- **Lead:** MaineDOT and local municipalities
- **Timing:** Ongoing

Continue safety awareness campaigns including Share the Road campaigns for bicyclists, bicycle safety education programming in schools, law enforcement training, bicycle commuter programs, and Safe Routes to School.

- **Reasoning:** Education, enforcement, and encouragement efforts have been shown to improve safety behavior.
- **Lead:** MaineDOT, NHTSA, Maine Bureau of Highway Safety and FHWA
- **Timing:** Ongoing

Continue and expand state agency coordination regarding planning processes, policy implementation, outreach efforts and programming to ensure that relevant state agencies are working towards well-planned communities with safe bicycle infrastructure. Foster collaboration and partnerships among state and federal agencies, the private sector, health, safety, and planning professionals - to improve coordination and partnerships with the myriad of groups working on improving conditions for biking.

- **Reasoning:** Coordination is essential to improving bicyclist safety by ensuring all agencies and groups are coordinating limited resources and efforts.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Maintain a web page that provides safety information and the tools and resources available for communities to identify deficiencies and to make improvements in the bicycling infrastructure.

- **Reasoning:** Web resources can provide viable and efficient information.
- **Lead:** MaineDOT
- **Timing:** Ongoing

Improve state and local policies and ordinances to ensure that bicycle connections are made whenever feasible as part of all road improvement projects, developments, site plan approvals, and traffic and environmental mitigation efforts.

- **Reasoning:** Policies, ordinances, etc. are crucial to ensure bicycle-related improvements are made at the time of designing and constructing a new building or road where warranted.
- **Lead:** MaineDOT and local municipalities
- **Timing:** Ongoing

Identify key locations where the following engineering improvements could be made:

- Colored and other high visibility pavement markings to identify bike lanes.
- Bike detection technologies at traffic signals and other select locations.
    - **Reasoning:** Improve visibility of bicyclists.
    - **Lead:** MaineDOT
    - **Timing:** Ongoing

Large Animals

Our Challenge

Maine is known for its terrific scenery and the accompanying wildlife – moose, deer, turkeys and other creatures that may find their way onto any road, anywhere, any time. Moose and deer have much higher crash activity from dusk to dawn. Overall crash activity has been decreasing. Maine does have a multi-agency task force to address related safety issues.

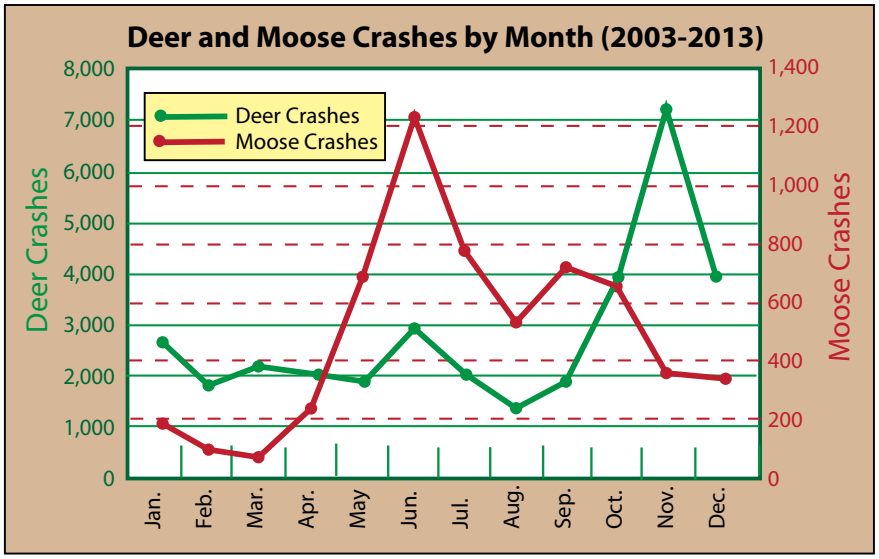
Moose do not represent the most frequent Maine animal crash type, but they are highlighted due to their sheer size. Impact with these animals can be devastating, with countless stories about these tall, heavy animals entering the passenger compartment upon impact, causing serious injury and death.

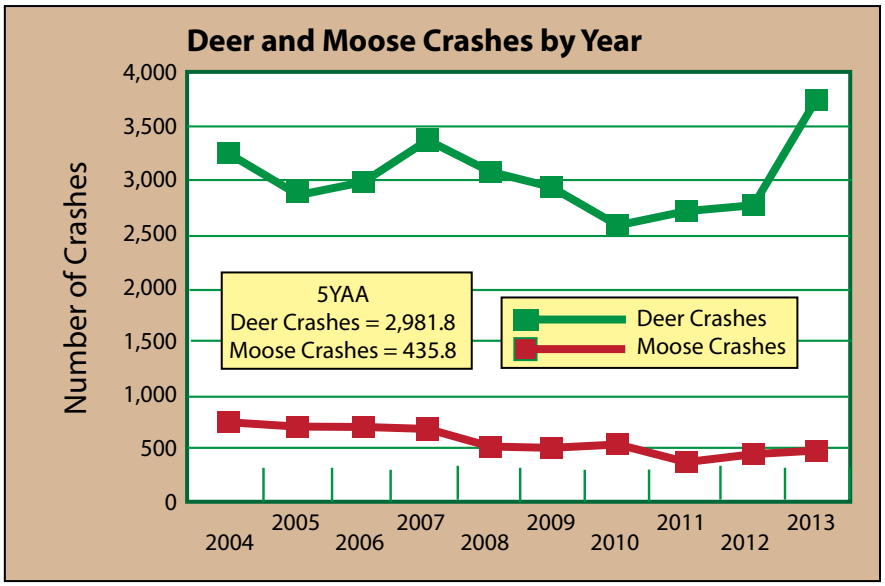
Deer crashes are more frequent and, although the animal is smaller, injuries and even fatalities do sometimes result.

Our Goal

- **Reduce large animal crashes by 10.5% by 2016.**

MaineDOT works with the Maine Department of Inland Fisheries and Wildlife (IF&W) and other agencies on road and wildlife management actions to update strategic activities.





Large Animal Strategies

Identify high crash locations.

- **Reasoning:** Repeated crashes in one location or corridor indicate a high use by large animals. MaineDOT assesses the information by reviewing reported crash locations in concert with IF&W. Population, moose/deer harvest data and moose observation information provided by hunters are also considered.
- **Lead:** MaineDOT with Maine IF&W
- **Timing:** Ongoing

Identify possible animal/vehicle crash reduction solutions.

- **Reasoning:** Currently IF&W is reviewing moose/deer populations with a goal of setting harvest rates. In some management districts, moose permits have increased to control the population of moose where they have become a hazard or a problem. Similar strategies are used for deer in more southern wildlife management districts. Controlling populations is part of the strategy, and increasing the drivers' ability to detect hazards is another. MaineDOT will install ground signage, clear vegetation and use other strategies in northern and western Maine to increase the drivers' safety. They will work with other state and provincial agencies to innovate strategies. MaineDOT also will build upon the on-site knowledge that regional biologists and game wardens have to properly identify strategies.
- **Lead:** MaineDOT and Maine IF&W
- **Timing:** Ongoing

Continue public outreach activities.

- **Reasoning:** The message that the probability of a crash is real is needed to remind the public to be careful, and to educate drivers that these hazards are on the roads.
- **Lead:** MaineDOT, Department of Public Safety, Bureau of Highway Safety, and Maine IFW
- **Timing:** Seasonal, when animal movement is most frequent/ongoing

Address special mitigation needs in seasonal crash areas. Specific key wintering areas need to be identified.

- **Reasoning:** Larger groups of deer winter together and then move back into the forests once the conditions allow for free movement. This can create concentrated deer crash potentials. Special short-term signing is being used when deer gathering areas are breaking up in the spring. Bald eagles remain in Maine over the winter and change foraging habits to include road-killed species. Close communication between MaineDOT and IF&W are needed to accomplish timely sign posting and sign closure after the eagles return to foraging in waterways or when deer movements slow down.
- **Lead:** MaineDOT with Maine IF&W
- **Timing:** Each spring

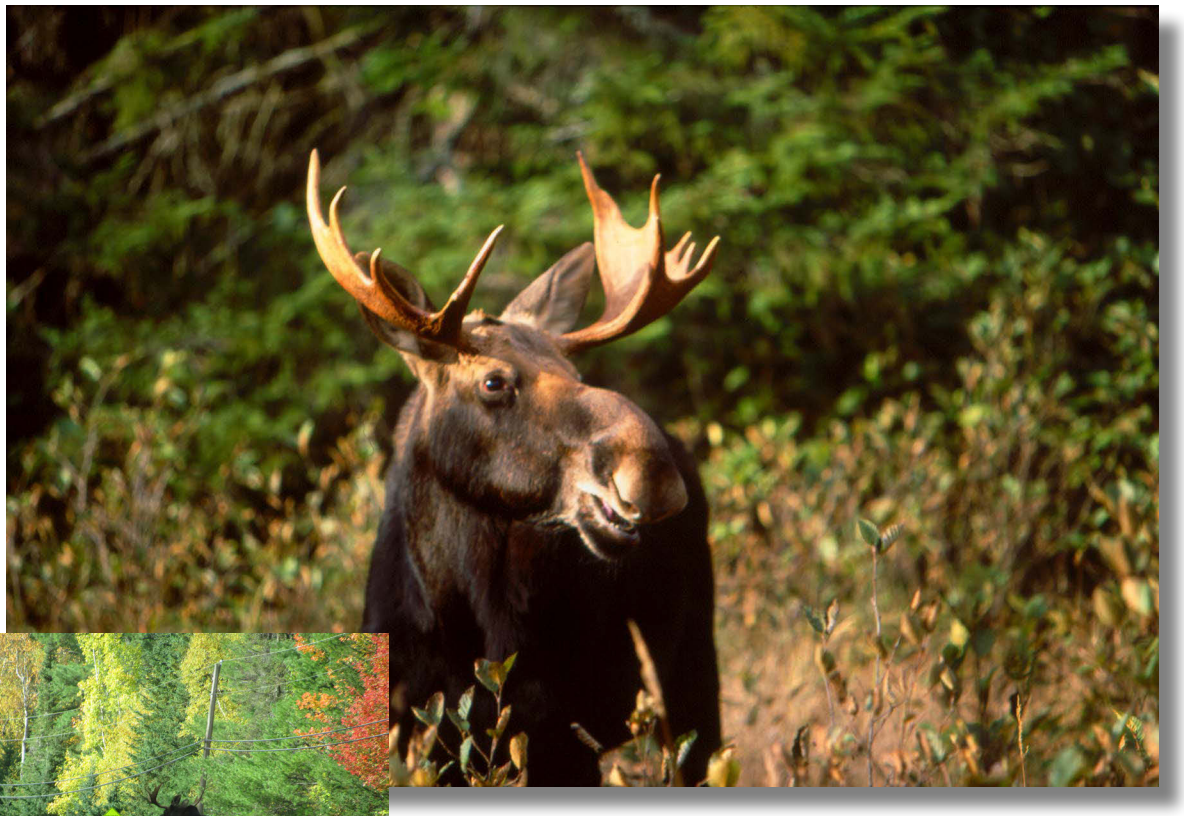
Use the following engineering solutions to mitigate animal-vehicle collisions at select locations:

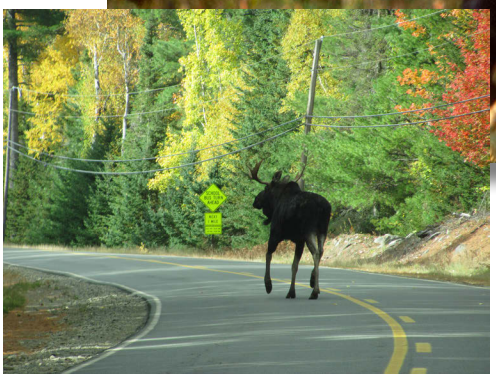
- Changeable message signs alerting motorists
- High visibility signs that are only posted seasonally, such as during periods when deer yards are dispersing in the spring.

- LED lighting at select locations to help motorists' spot wildlife at night.
- Roadside delineators to indicate a break in reflectivity when animals cross between them.
- Use of oversized and retroreflective signs in heavily populated habitats.
    - **Reasoning:** Assist in alerting motorists' to the presence of wildlife
    - **Lead:** MaineDOT
    - **Timing:** Ongoing

Work with local interests on special large animal safety concerns.
For example, Mount Desert Island is an area where deer populations and vehicle crashes have been increasing.

- **Reasoning:** Wildlife populations do not increase uniformly, and historical wildlife practices vary from region to region. Specific localized needs, assessments and action plans may need to be coordinated with local authorities including town, state and federal park systems, etc.
- **Lead:** MaineDOT with Maine IF&W
- **Timing:** Ongoing





Operating After Suspension (OAS)

Our Challenge

Suspended drivers are still driving despite many demonstrating that they do not drive safely. Suspensions can also be initiated due to other violations such as failure to pay child support. This diversity in suspension causes makes it difficult to link the suspension types to crash outcomes. However, the number of Maine license suspensions, and the related crashes and fatalities are significant. OAS fatality percents compared with crash percents indicate that crashes involving an OAS driver have higher severity than average.

Suspensions are often initiated due to a history of unsafe driving practices. Young drivers are more susceptible to license suspension due to provisions in the state's graduated driver's license.

Our Goal

- Reduce OAS fatalities by 10% by 2016.
- Increase public awareness of the dangers caused by suspended drivers.
- Improve crash reporting to link suspension types to crash.
- Improve the process of notifying drivers when their license is under suspension.
- Increase consistent prosecution for drivers found to be operating after suspension.

Crashes Involving Drivers With Suspended Licenses

YEAR	ALL Maine Crashes	Suspended Crashes	% of Susp. Crashes	ALL Maine Fatalities	Suspended Fatalities	% of Susp. Fatalities
2003	35202	795	2.26	207	9	4.35
2004	34969	854	2.44	194	20	10.31
2005	34995	707	2.02	169	17	10.06
2006	32058	679	2.12	188	18	9.57
2007	33196	789	2.38	183	16	8.74
2008	31724	584	1.84	155	4	2.58
2009	28969	614	2.12	159	14	8.81
2010	27888	581	2.08	161	8	4.97
2011	28659	577	2.01	136	11	8.09
2012	28278	661	2.34	164	16	9.76
2013	30335	627	2.07	145	19	13.10
5 Year Annual Average		612	2.12%		13.6	8.89%

Emergency Medical Services

Our Challenge

Maine has nearly 6,000 individuals who are associated with the 285 EMS services that respond to emergency medical calls and interfacility transfers. In 2010, Maine EMS providers responded to nearly 250,000 calls. 164,000 of these were emergency (9-1-1) calls, including 14,000 car crashes. Timely notification to EMS activates a system of care that includes emergency medical dispatchers, pre-hospital providers, and hospital resources. Maine has both a statewide trauma system that involves every hospital and statewide EMS treatment protocols which help to provide quality care and the most appropriate destination for trauma patients.

Based upon historical data, Maine ambulances experience an average of 60 crashes a year. Further study needs to be done in order to evaluate these data and develop an appropriate plan. Workers experience about 12.7 fatalities per 100,000 workers. This is about the same as police departments (PD) and fire departments (FD) – and 250% higher than average workers. Transportation risks are 500% higher than average. In terms of work-related injuries, EMS is at 34.6/100, which is higher than FD & PD, and seven times higher than the average worker. For air medical crew, there have been 113 deaths per 100,000 employees, which is more than Alaska fisherman (111/100,000) and PD (21/100,000).

Forty-one percent of the ground ambulance crashes happen while responding to an emergency; 17% during routine driving, and about 12% each for transporting a patient in an emergency setting or non-emergency setting. 58% happen during clear and dry weather conditions. Fatigue is a big concern because many EMS and fire departments still work 24 hour shifts. A study published in Pre-Hospital Emergency Care (Patterson, PD et al, April 2010) concluded that after 21 hours awake, individual performance is equivalent to a blood alcohol content of .08 in terms of concentration and response.

Our Goal

Establish a system that connects hospital medical systems with the MaineDOT crash data system.

Emergency Medical Services Strategies

Treatment Protocols: Maine has statewide treatment protocols that are updated approximately every three years. In 2013, the treatment protocols were published only in electronic format, with apps developed for both Android and iOS devices. Converting to electronic format enables providers to use features within their smartphones/tablets to do medication calculations, call medical control, and get GPS directions to hospitals.

Maine is a partner in the **Pediatric Evidence-based Guidelines: Assessment of EMS Utilization in States (PEGASUS) project.** PEGASUS will develop evidence-based protocols, beta test them in Texas, and then deploy them in Utah and throughout New England. Maine and the other New England states will activate the protocols in mid-2015 and measure outcomes.

Other EMS treatment protocols will be updated in the second half of 2015.

- **Lead:** Maine EMS
- **Timing:** PEGASUS training will begin in the second quarter of 2015, with activation in the third quarter. Other revised protocols will take effect in the 4th quarter of 2015.

Data: Maine has had a mandatory EMS data system since 1982. It converted to an electronic system beginning in 2006 and completed the transformation in 2009. While the earlier paper-based system was done by an outside contractor, the e-system is managed within the EMS bureau. Challenges with the conversion have ranged from ongoing training and basic technical support needs to linkages with other data systems and research. Although Maine EMS does not currently have the ability to objectively assess the quality of the data, empirically there appear to be issues with accuracy, completeness, and timely submissions.

Regarding linkage with other data sources, Maine EMS drafted legislation that was passed in 2011 that will allow MEMS to provide otherwise confidential data to agencies such as Maine Center for Disease Control, the Office of the Chief Medical Examiner, and for approved research projects. EMS is continuing to work with the Maine CODES project for opportunities to provide data.

Regarding data quality assessment, EMS will be working with MeBHS to identify resources for assessing both EMS and BHS data as recommended in a recent traffic records assessment. EMS is also developing standardized report cards that will be sent to each provider summarizing their performance in key areas and comparing their results with other providers within the EMS region and in the state.

- **Lead:** Maine EMS
- **Timing:** Ongoing

Quality Improvement: Maine EMS has conducted three statewide studies: two on the administration of aspirin for patients experiencing cardiac-related chest pain, and one on the survival of out-of- hospital cardiac arrest. Evaluation of the aspirin studies resulted in focused training for EMS providers on administering aspirin and appropriately recording this treatment.

Data for the cardiac arrest survival project is currently being compiled and should be available in late 2014.

- **Lead:** Maine EMS
- **Timing:** Ongoing

Education: Maine EMS has adopted the national education standards for all license levels and has made rule changes to transition other license levels to the appropriate national standard. Current educational activities include updating continuing education requirements to reflect concurrent skills/knowledge expectations.

- **Lead:** Maine EMS
- **Timing:** Ongoing

Emergency Medical Dispatch Determinant Codes: Maine EMS made regulatory changes that allow EMS services to modify their response based upon dispatch determinant codes. Maine EMS has specific requirements for the development and implementation of these codes, and works with interested services on this project.

National data suggests that use of determinant codes results in better utilization of resources.

- **Lead:** Maine EMS
- **Timing:** Ongoing

EMS data collection: Maine EMS requires all EMS services to submit an electronic patient care report (ePCR) within one business day of a call. The Maine ePCR system utilizes the National EMS Information System data definitions and will transition to NEMSIS 3.0 during 2015.

NEMSIS 3.0 will also contribute significantly to the goal of integrating Maine EMS data with the Maine Health Information Network (InfoNet).

- **Lead:** Maine EMS
- **Timing:** NEMSIS 3.0 compliance in the first half of 2015, with integration to Maine Health InfoNet in the second half of 2015

Promote a culture of safety: The problems of EMS safety are well documented (Annals of Emergency Medicine, Pre-Hospital and Disaster Medicine, etc.) and have been discussed nationally for many years. In spite of these discussions, the rate of job-related injuries and crashes remains high.

Maine has required basic ambulance vehicle operator training for several years and continues efforts to educate providers about the importance of safe operations. Some services have installed vehicle telematics that provide data on vehicle location and some vehicle operation data such as speed, braking, sudden turns, etc. However, the overwhelming majority of services are skeptical about the benefits to such a monitoring system. Vehicle design has made only modest improvements in providing a safe environment for patients and providers during transport. This continues to be an area of considerable attention around the country because of both the paucity of data and the potential added expenses for vehicles.

While we work through vehicle design and operating issues, there are some areas where we are able to focus:

Emergency Medical Dispatch (EMD): Maine has a statewide EMD requirement and one of the goals of EMD is to decrease the frequency of lights and sirens ("code 3") responses. An essential step in implementing response codes is quality assurance within the dispatch centers. In June, the Board of EMS adopted mandatory QA reporting requirements and the EMS office is working

with services who are interested in developing response codes. Efforts to expand the use of response codes will be discussed and developed based upon lessons learned from these initial pilot services.

Transporting Children Safely in Ambulances: With funding assistance from MeBHS, Maine EMS has conducted several train-the-trainer sessions to teach EMS providers about the proper way to secure children in an ambulance. This program is now part of many initial training programs. A goal is to have it become part of all initial training programs.

- **Lead:** Maine EMS
- **Timing:** TBD

EMS: Public Information, Education, and Relations (PIER) has been an area of limited involvement with EMS services. While some have done impressive outreach programs for cardiac care, playground safety, etc., the majority of services are unsure how to go about implementing such a program. In response, the contract that MEMS has with the regional EMS offices includes improving PIER during the coming fiscal year. The Trauma Advisory Committee (TAC) offers Technical Assistance Team (TAT) visits to hospitals upon request. TAT visits are offered to all non-trauma center hospitals with a primary focus on hospitals categorized as Critical Access Hospitals; the smallest and most rural in the state. This resource is funded by a grant from the Maine Office of Rural Health, Hospital FLEX grant program.

- **Lead:** Maine EMS
- **Timing:** Ongoing

High Risk Rural Roads

Our Challenge

High risk rural roads are of safety interest and present opportunities for safety improvements. These are roads defined as having the Federal Functional Classification of Rural Major and Minor Collectors, and Rural Local roads that have significant safety risks.

A "significant safety risk" may be identified as a section of road or intersection with one or more of the following qualities:

- A crash, fatality and/or serious injury rate that is at least 10% higher than roadways of similar functional classifications in Maine.
- Meets the definition of Maine's High Crash Location criteria.
- Has significant crash clusters of head-on or went-off-road crashes.
- Are identified as high risk locations through engineering/safety field reviews, safety assessments, road safety audits, and local town/law enforcement knowledge. Using information from observations in the field can identify high risk locations that may not be identified through data analysis.
- Increases in traffic volumes that are likely to create a crash rate for fatalities and incapacitating injuries that exceed the statewide average at those locations.

Safety Planning Beyond Statewide Efforts: Metropolitan Planning Organizations, Regional Planning Organizations and Tribal Groups

Our Challenge

MPO's/RPO's: The concern for safety extends to roads and modes of all types and settings in Maine. While the four Maine Metropolitan Planning Organizations (MPO's) have a more local focus in the denser parts of the state, Maine Regional Planning Organizations (RPO's) provide transportation planning services for the rest of the mostly rural state. While the urban areas benefit from lower speed limits, they also see increased safety vulnerabilities with increased bicycle and pedestrian activity. Overall, two thirds of Maine's roads are locally maintained.

The MPO's and RPO's are an important part of the safety and State Highway Safety Plan conversation. Maine's MPO's and RPO's have a variety of efforts under way to integrate safety into their planning. For further details about their plans, go to the individual MPO/RPO website. The items below provide a sampling of activities being conducted by some of Maine's MPO's/ RPO's and coordinated activities with tribal groups.

MPOs

Safety has always been a part of the project selection and prioritization process for **Androscoggin Transportation Resource Center (ATRC – the Lewiston/Auburn area MPO)**. Recent efforts have been made to enhance this component by more than just targeting MaineDOT's defined High Crash Locations. The ATRC Technical Committee now evaluates and scores projects based on whether they have correctable safety issues that will be addressed rather than awarding points for a project that will not directly improve safety factors at a high crash location.

Categorically, ATRC focuses on two safety subjects: bicycle/pedestrian and traffic signals. The Lewiston/Auburn downtowns see much heavier bicycle and pedestrian usage than other areas, with concurrent higher crashes. Investments have been made in capital projects to improve bicycle and pedestrian facilities, and arterial coordination and management. Planning studies have also been funded which seek to enhance bicycle and pedestrian safety by increasing bike lanes through the cities and on/off road facilities for pedestrians. Studies have also made recommendations for a phased approach to improved traffic operations by corridor.

Portland Area Comprehensive Transportation System (PACTS) which is the state's largest MPO, with an area population over 200,000, realizes the importance of safety for all users of the transportation system. MaineDOT tends to focus on motor vehicle high crash locations and the Interstate system in our region. PACTS and its communities use crash and injury data and suggested

infrastructure improvements to calculate expected reductions as part of our project review and selection criteria. Given the highly urbanized area that includes Portland, the largest city in Maine, a shift in priorities is to look more closely at the safety of the vulnerable user, the bicyclist, the pedestrian and other non-vehicular users.

PACTS works closely with GPCOG, the Greater Portland Council of Governments (Cumberland County's RPO), since the needs for those communities are similar to the PACTS communities. They combine efforts to obtain state and local crash and injury data, determine areas of high conflict or injuries and study the crash data and specific crash sites to determine causation. In other words, "what's taking place out there?" In many instances, they bring in bike and pedestrian volume data to reinforce the "hot spot" areas.

After the data has been reviewed, to determine the behavioral aspects and the causes of the incidents, PACTS staff works with our communities and MaineDOT to fund infrastructure projects where applicable. PACTS also works with other partners such as the Bicycle Coalition of Maine and local law enforcement agencies to target educational and enforcement efforts. This all-encompassing approach will, over time, improve the levels of safety for all transportation users in the Greater Portland region.

Bangor Area Comprehensive Transportation System is the Bangor area MPO, made up of ten communities and the Penobscot Indian Reservation. BACTS' objective is to increase safety for all users of the transportation system by promoting a greater awareness of transportation safety design and practice and by implementing targeted safety projects at high-crash locations and in areas with high potential for vehicle-pedestrian conflicts. BACTS coordinates closely with all area municipalities and MaineDOT to identify and implement projects aimed at reducing the number and severity of crashes within the urban area. BACTS has long advocated for innovative and cost-effective safety treatments at appropriate locations within the urban area. BACTS monitors and updates information as needed from MaineDOT's statewide database and reports to analyze area crash statistics, identify contributing factors at problem locations, and develop appropriate countermeasures.

As part of the Transportation Improvement Plan selection process all project submissions are reviewed for crash history; however, points are primarily awarded for intersection projects. For this project type, safety is evaluated based on the percentage of injuries (PI) and the critical rate factor (CRF) for a given intersection, as determined by MaineDOT.

RPO's

The state of Maine has 11 Regional Planning Organizations which provide transportation planning assistance to Maine's rural communities. The nature and breadth of safety planning efforts can differ by region, depending upon local/regional issues and opportunities for improvement.

In Western Maine, **Androscoggin Valley Council of Governments (AVCOG)** provides technical assistance to more than 50 communities in three counties. AVCOG's safety-related transportation planning includes identifying and analyzing high crash locations during the municipal comprehensive planning process, monitoring perpetual high crash locations for changes in crash data, advocating for municipalities regarding transportation safety issues, making requests for MaineDOT to conduct safety studies or road safety audits, and participating in road safety audits. Recently, AVCOG has added a new feature to its agency newsletter specific to transportation safety issues.

In the Portland region, the **Greater Portland Council of Governments (GPCOG)** provides a wide range of planning services to its 25 member municipalities. GPCOG's transportation safety efforts have mainly focused on enhancing the quality of place and livability of the region's communities. A key consideration in doing this has been managing traffic in the region's corridors, village centers, downtowns, neighborhoods, and school zones. In the last several years, GPCOG has placed a strong emphasis on improving conditions and safety specifically for bicyclists and pedestrians. Relevant projects include village master plans, extensive audits and inventories of bicycle and pedestrian conditions, draft Complete Streets policies, town-wide bicycle and pedestrian plans, and GIS analysis of high crash locations.

GPCOG staff also participate regularly in the Public Health in Transportation (PHiT) committee, a coalition of individuals and organizations from a number of sectors including health, transportation planning, law enforcement, education, recreation, and governments at all levels. The group's mission is to build awareness of the relationship between transportation design and health, and to influence policy development and infrastructure investment to improve health and safety outcomes.

The **Washington County Council of Governments** is finalizing a corridor management plan for the Bold Coast Scenic Byway, a 125-mile coastal driving route extending along the coast from Milbridge to Eastport. The scenic byway route physically and culturally links 24 communities. Through this interconnection of assets provided by the roadway, a "critical mass" of stories and activities is created, and visitors are encouraged to stay longer and explore deeper. The scenic byway is a critical component of the Experience Maritime Maine and the Two-Nation Vacation initiatives, both of which promote the entire coastal corridor as part of a much larger traveling destination.

The Bold Coast Scenic Byway Corridor Management Plan identifies important local assets, describes the physical conditions and safety/mobility issues along the transportation corridor, and makes recommendations for both organizational and infrastructure improvements to support anticipated traveler needs. The Corridor Management Plan includes a goal of increasing transportation safety and multimodal opportunities by providing a safe, efficient, and attractive transportation corridor that balances the needs of visitors, residents, and businesses. Locally, the byway planning process provides a forum for community collaboration around shared resources and values, thereby uniting efforts at creating a healthy economic and cultural future.

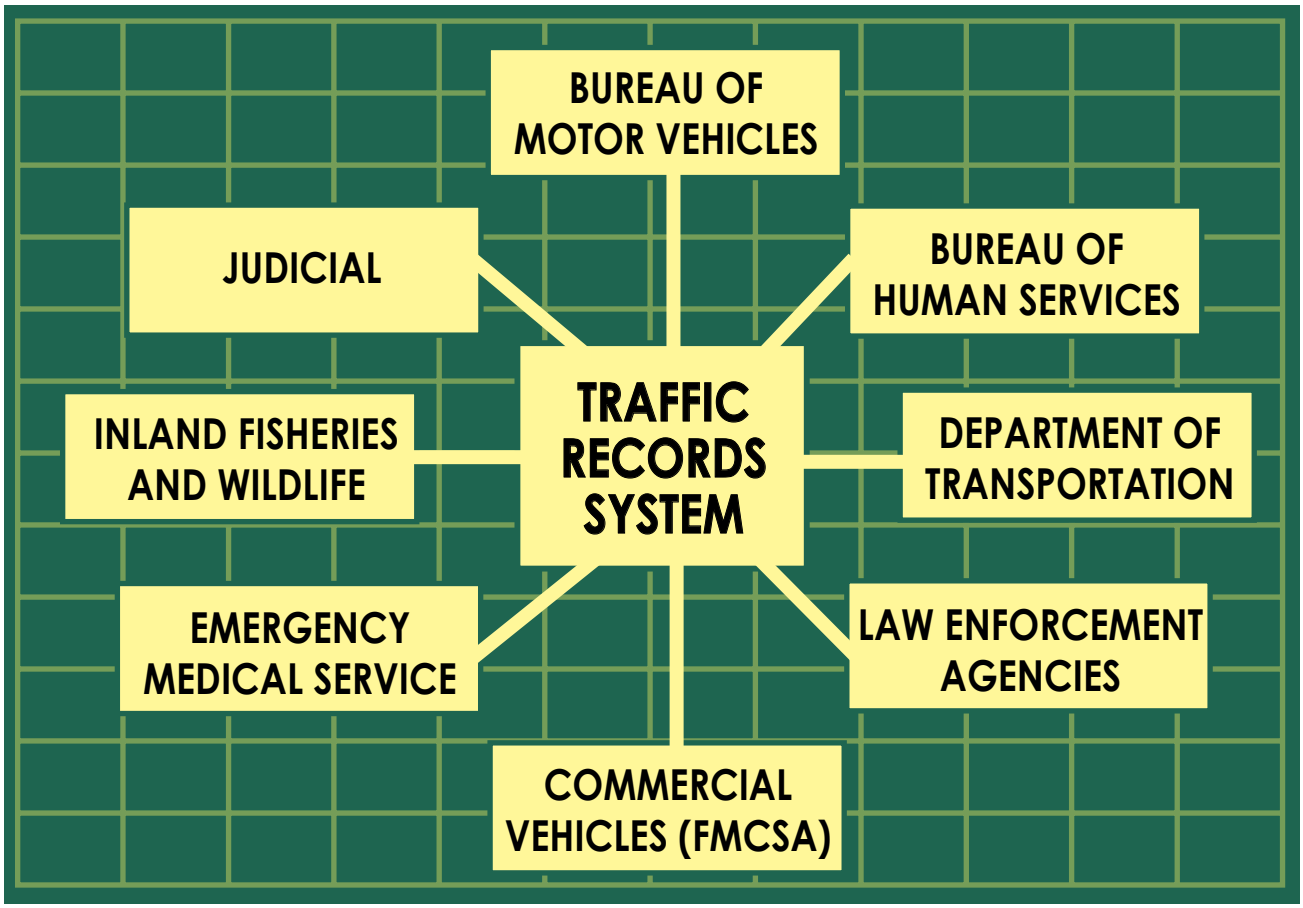
Tribal

Tribal groups are also responsible for transportation safety planning. MaineDOT is actively keeping these groups informed about the SHSP and is seeking ways to coordinate transportation safety planning by discussing tribal transportation safety plans, identifying specific safety project opportunities and participating in road safety audits.

Traffic Records

Our Challenge

Maine's Strategic Highway Safety Plan is data driven. Maine enjoys having very good traffic records data systems. This quality data has enabled us to define the "what" and "why's" of safety needs. Maine has published crash results in key performance areas during recent years. It is important that Maine continuously evaluates how to more effectively and efficiently gather, evaluate and report crash results and to evaluate various safety aspects. A good understanding of the safety issues that data analysis provides will help lead to the best strategies to improve safety and save lives.



Our Goal

Enhance Maine's traffic records capabilities.

Traffic Records Strategies

Future areas of attention for the TRCC are:

- Electronic collection of EMS run report data
- Online registration renewal
- E-Citation
- Maine CODES
- Public Access Reports – Traffic

Maine does have a Traffic Records Coordinating Committee that has multi-agency representation, meets on a quarterly basis and identifies areas of future data system enhancements. The types of records that are evaluated in this process are:

- Crash Data System
- Citation and Adjudication
- Injury Surveillance System
- Vehicle Data System
- Driver Data System
- Roadway Data System

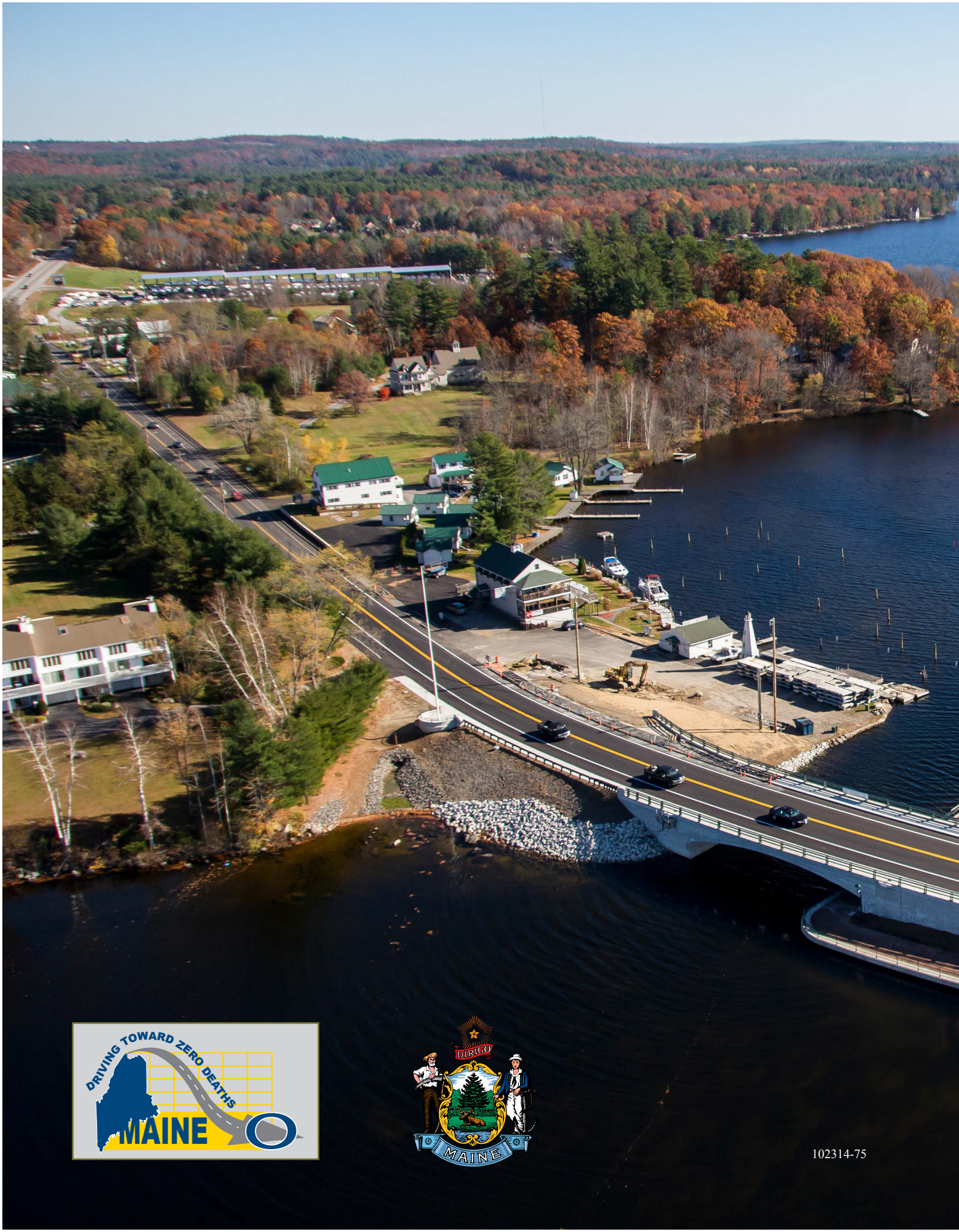
Each one of these systems is evaluated in these performance areas

- Timeliness
- Accuracy
- Completeness
- Uniformity
- Integration
- Accessibility

During 2011, Maine updated its crash reporting system to bring it into closer alignment with the most recent existing Model Minimum Uniform Crash Criteria Guideline (MMUCC). MMUCC is a minimum, standardized data set for describing motor vehicle crashes and the vehicles, persons and environment involved. The Guideline is designed to generate the information necessary to improve highway safety within each state and nationally.

Future projects have been identified in the state's approved Traffic Records Plan:

- Collection of electronic citation data
- Maine-specific CODES project
- Public access to crash records and data analysis (planned for late 2014/early 2015 completion)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