

Rockingham Planning Commission
Metropolitan Planning Organization
Safety Performance Targets & Methodology

January 10, 2018

Background

On March 15th, 2016 the Federal Highway Administration (FHWA) published the final rule on the Highway Safety Improvement Program (HSIP). The rule requires State Departments of Transportation to set targets for Safety Performance by August 31st, 2017 for calendar year 2018, and Metropolitan Planning Organizations (MPOs) to set regional targets 180 days after that. The targets deal with 5 safety measures:

1. **Number of Fatalities:** The total number of persons suffering fatal injuries in a motor vehicle crash during a calendar year.
2. **Rate of Fatalities:** The ratio of total number of fatalities to the number of vehicle miles traveled (VMT, in 100 Million VMT) in a calendar year.
3. **Number of Serious Injuries:** The total number of persons suffering at least one serious injury in a motor vehicle crash during a calendar year.
4. **Rate of Serious Injuries:** The ratio of total number of serious injuries to the number of VMT (in 100 Million VMT) in a calendar year.
5. **Number of Non-Motorized Fatalities and Non-motorized Serious Injuries:** The combined total number of non-motorized fatalities and non-motorized serious injuries involving a motor vehicle during a calendar year.

Data for the establishment of these measures is provided from three sources:

- **Fatality Analysis Reporting System (FARS):** FARS Annual Report File or Final data is utilized to provide information on fatal crashes in the state.
- **State Motor Vehicle Crash Database:** Data collected and maintained by the NH Department of Safety is utilized to determine the number of serious injury crashes in the state (currently those classified as “A” on the KABCO scale). Crashes can be aggregated at the state, region, community, or highway level.
- **Highway Performance Monitoring System (HPMS):** State Vehicle Miles of Travel (VMT) data is collected by the Department of Transportation and aggregated into a dataset for the state. VMT data can be calculated for MPO regions and individual communities.

Target Development

States establish Highway Safety Improvement Program (HSIP) targets and report them for the upcoming calendar year in the HSIP annual report that is submitted to FHWA by August 31st each year. Targets are applicable to all public roads, regardless of functional classification or ownership. The targets established for number and rate of fatalities, and number of serious injuries must be identical to those established for the National Highway Transportation Safety Agency (NHTSA) Highway Safety Grant program in the annual Highway Safety Plan. The state has the option to also establish any number of urbanized area targets and a non-urbanized area target for

the purposes of evaluating and reporting measures however those sub-state targets are not included in the significant progress determination that will be made by FHWA.

In New Hampshire, the process used to develop the required safety measures included in the annual Highway Safety Plan formed the basis for the establishment of the five FHWA mandated targets by NHDOT and the MPOs. This involved coordination and consultation between the New Hampshire Departments of Transportation and Safety, as well the four MPOs in the state. Currently available fatality, serious injury, and volume data were analyzed to establish 2007-2016 conditions in terms of total fatalities, fatality rates, total serious injuries, serious injury rates, as well as total non-motorized fatalities and serious injuries. Five year rolling averages were developed from these values and utilized to compute projected values for 2018.

State Targets

The tables on the following pages show the data supporting the targets for the five required measures as well as a graph showing the state targets for 2018.

Measure	5-Year Rolling Average			Desired Trend	2018 Target
	Previous	Current	Current Trend		
Number of Fatalities	108.4	117.6			113.2
Fatality Rate per 100 Million VMT	0.839	0.900			0.866
Number of Serious Injuries	496.8	499.8			499.8
Serious Injury Rate per 100 Million VMT	3.847	3.828			3.847
Non-Motorized Fatalities and Serious Injuries	56.4	58.8			51.4

MPO Targets

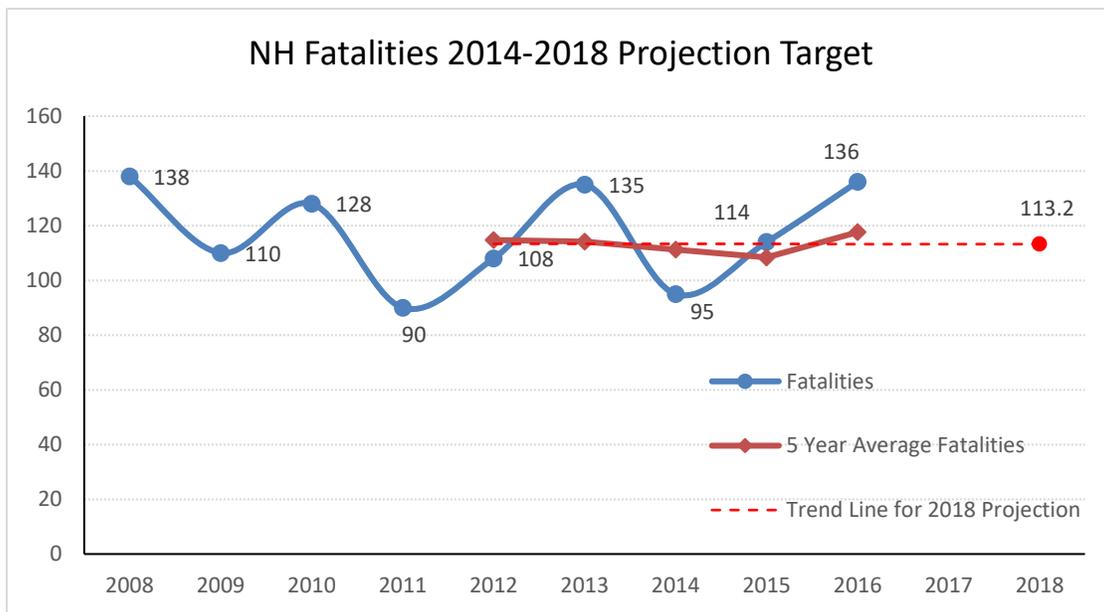
For 2018, the MPO is agreeing to support the State of New Hampshire HSIP Targets in all five mandated areas. In doing so, the MPO is agreeing to:

- Work with the State and safety stakeholders to address areas of concern for fatalities or serious injuries within the metropolitan planning area
- Coordinate with the State and include the safety performance measures and HSIP targets for all public roads in the metropolitan area in the MTP (Metropolitan Transportation Plan)
- Integrate into the metropolitan transportation planning process, the safety goals, objectives, performance measures and targets described in other State safety transportation plans and processes such as applicable portions of the HSIP, including the SHSP
- Include a description in the TIP (Transportation Improvement Program) of the anticipated effect of the TIP toward achieving HSIP targets in the MTP, linking investment priorities in the TIP to those safety targets

Number of Fatalities

The Federal Fatal Analysis Reporting System (FARS) provides the data necessary for identifying the total number of traffic crash fatalities in New Hampshire and for the MPO region. Five-year rolling averages are computed to provide a better understanding of the overall data over time without discarding years with significant increases or decreases, as well as to provide a mechanism for regression to the mean for a random variable such as fatalities.

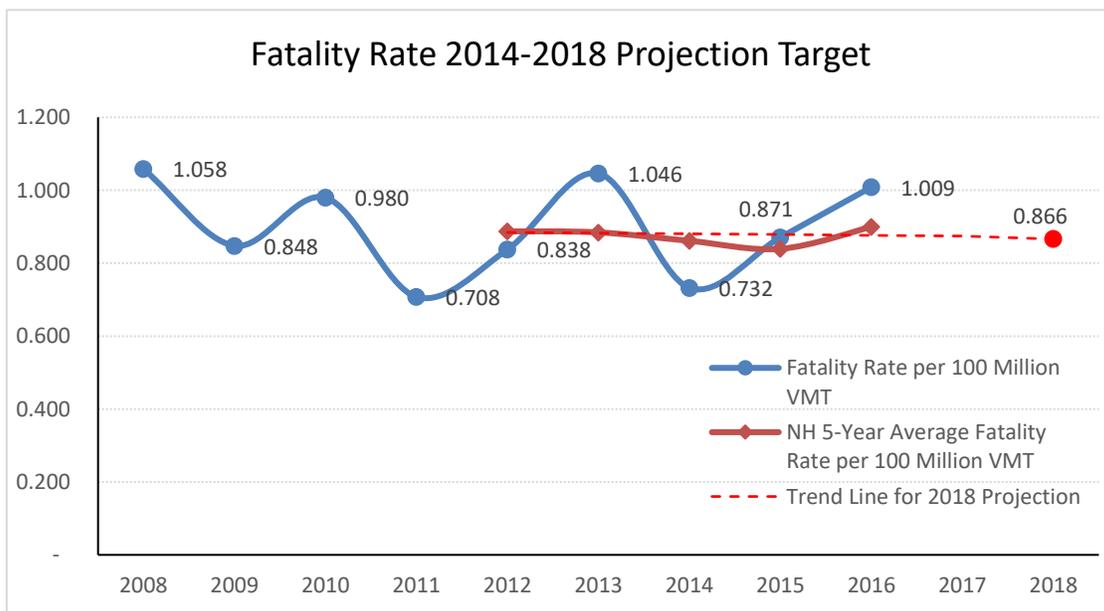
Year	Annual Crash Fatalities		5-Year Period	5-Year Rolling Average Crash Fatalities	
	New Hampshire	MPO Region		New Hampshire	MPO Region
2008	138	14			
2009	110	14			
2010	128	17			
2011	90	9			
2012	108	20	2008-2012	114.8	14.8
2013	135	16	2009-2013	114.2	15.2
2014	95	10	2010-2014	111.2	14.4
2015	114	16	2011-2015	108.4	14.2
2016	136	17	2012-2016	117.6	15.8



Rate of Fatalities

The Federal Fatal Analysis Reporting System (FARS) maintained by the National Highway Traffic Safety Administration (NHTSA) provides the data necessary for identifying the total number of traffic crash fatalities in New Hampshire and the MPO region specifically. This information is combined with data from the Highway Performance Monitoring System (HPMS) which provides annual Vehicle Miles of Travel (VMT) at the State and community level. Combining the total number of fatalities in a particular year with the aggregated volume of travel in the state during that same year provides a fatality rate per 100 Million VMT. This data is further aggregated into 5-year averages to reduce the impacts of the high variability in the number of fatalities from year to year and to provide some indicators of longer-term trends.

Year	100 Million Vehicle Miles of Travel (VMT)		Fatality Rate per 100 Million VMT		5-Year Period	5-Year Average Fatality Rates per 100 Million VMT	
	New Hampshire	MPO Region	New Hampshire	MPO Region		New Hampshire	MPO Region
2008	130.40	22.30	1.058	0.628			
2009	129.75	22.19	0.848	0.631			
2010	130.65	22.34	0.980	0.761			
2011	127.20	21.75	0.708	0.414			
2012	128.94	22.05	0.838	0.907	2008-2012	0.887	0.885
2013	129.03	23.48	1.046	0.681	2009-2013	0.884	0.883
2014	129.70	21.66	0.732	0.462	2010-2014	0.861	0.881
2015	130.94	21.61	0.871	0.741	2011-2015	0.839	0.879
2016	134.85	24.20	1.009	0.703	2012-2016	0.900	0.877

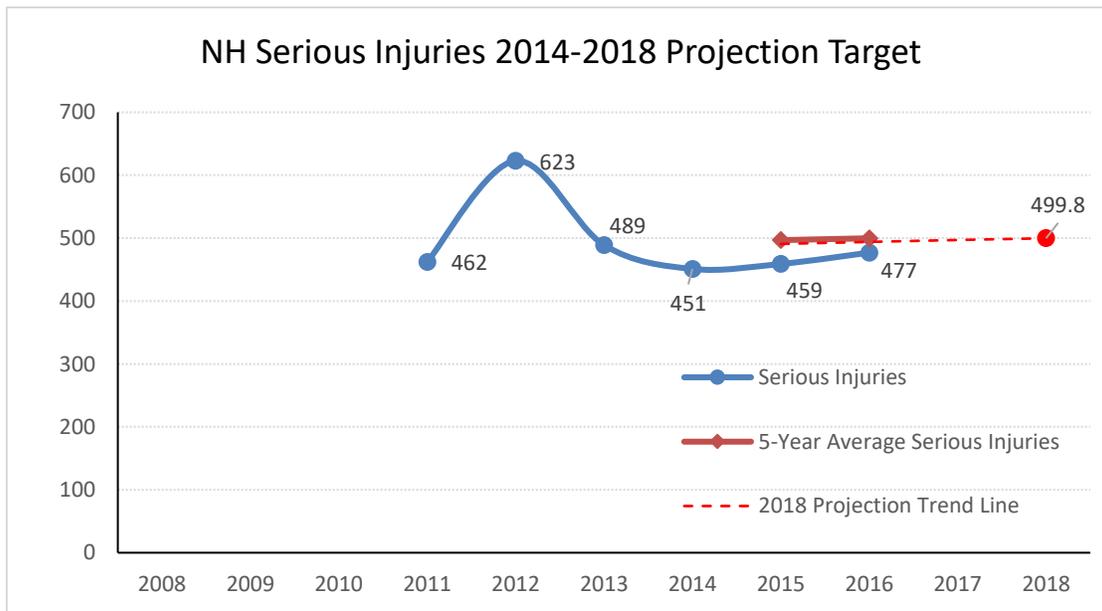


Serious Injuries

Serious injuries are defined currently as those that are designated as “A” or “4 Incapacitating” on the crash report form used by the New Hampshire Department of Safety (State of New Hampshire Uniform Police Traffic Crash Report, 2007). This includes injuries that involve severe lacerations, broke or distorted limbs, skull fracture, crushed chest, internal injuries, unconscious when taken from the accident scene, or unable to leave the accident scene without assistance. The State Crash Records database maintained by the New Hampshire Department of Safety provides the data necessary for identifying the total number of serious injuries from traffic crashes in New Hampshire and the MPO region specifically. Data can be analyzed at the state, regional, municipal, or corridor level.

Year	New Hampshire Serious Injuries	MPO Region* Serious Injuries	5-Year Period	5-Year Rolling Average Serious Injuries	
				New Hampshire	MPO Region
2011	462	65			
2012	623	90			
2013	489	94			
2014	451	61			
2015	459	70	2011-2015	496.8	76.0
2016	477	68	2012-2016	499.8	76.6

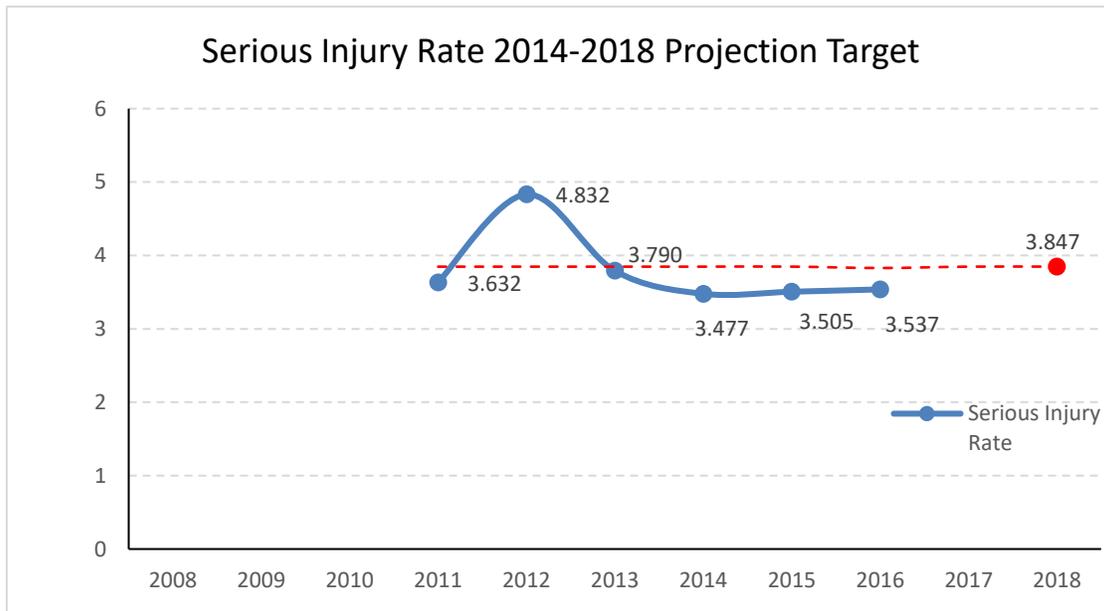
*Estimated based on data in NH Highway Safety Plans 2013-2017 from the State of New Hampshire Office of Highway Safety



Rate of Serious Injuries

The Rate of Serious Injuries is calculated by applying an estimate of annual travel in the state to the serious injury totals for the same year. The State Crash Records database maintained by the New Hampshire Department of Safety provides the data necessary for identifying the total number of serious injuries from traffic crashes in New Hampshire and the MPO region specifically. This information is combined with data from the Highway Performance Monitoring System (HPMS) which provides annual Vehicle Miles of Travel (VMT) at the State and community level to produce a rate of serious injuries per 100 Million VMT. This value is further aggregated into 5-year averages to identify longer-term trends and reduce the impacts of the variability of the data.

Year	100 Million Vehicle Miles of Travel (VMT)		Serious Injury Rate per 100 Million VMT		5-Year Period	5-Year Average Fatality Rates per 100 Million VMT	
	New Hampshire	MPO Region	New Hampshire	MPO Region		New Hampshire	MPO Region
2011	127.20	21.75	3.632	2.988			
2012	128.94	22.05	4.832	4.082			
2013	129.03	23.48	3.790	4.003			
2014	129.70	21.66	3.477	2.816			
2015	130.94	21.61	3.505	3.240	2011-2015	3.847	3.426
2016	134.85	24.20	3.537	2.949	2012-2016	3.828	3.418



Non-motorized Fatalities and Serious Injuries

This performance measure utilizes data from both NHTSA's FARS database and the State Crash Records Database which is maintained by the New Hampshire Department of Safety. Each dataset is queried for non-motorized vehicle crashes and the results are tabulated below. This data can be analyzed at the state, regional, municipal, or corridor level.

Year	New Hampshire Non-Motorized Crashes			MPO Region Non-Motorized Crashes			5-Year Rolling Average Non-Motorized Fatalities & Serious Injuries		
	Fatalities	Serious Injuries	Total	Fatalities	Serious Injuries	Total	5-Year Period	New Hampshire	MPO Region
2007	16	49	65	1	8	9			
2008	12	37	48	0	7	7			
2009	10	35	44	1	7	8			
2010	9	32	41	0	3	3			
2011	10	43	52	1	5	6	2007-2011	50.0	6.6
2012	10	50	58	3	11	14	2008-2012	48.6	7.6
2013	20	40	56	5	7	12	2009-2013	50.2	8.6
2014	16	37	52	0	6	6	2010-2014	51.8	8.2
2015	14	51	64	2	9	11	2011-2015	56.4	9.8
2016	21	47	64	1	10	11	2012-2016	58.8	10.8

