

Overcoming Barriers

Strengthening Connections



Ensuring Opportunities

Planning One Community

“A community that provides a variety of complementary transportation choices, that are fiscally constrained, for people and goods.”

MPO Staff Report

MPO Technical Advisory Committee, September 11, 2019 1:30 pm

MPO Executive Policy Board, September 18, 2019 12:00 Noon

RECOMMENDED ACTION

For Information Update

Matter of the Safety Performance Management (PM-1) Crash Analysis for Y2014-2018

BACKGROUND:

Performance Measures and Performance Target regulations and requirements emanate from the enacted FAST (*Fixing America Surface Transportation*) (2015) Act. FAST encourages a performance-driven and outcome-based transportation planning process. MPOs are required by the Federal Highway Administration (FHWA) to adopt targets for defined performance measures.

Targets are established by State DOT's for:

- (1) Safety
- (2) Transit asset management
- (3) System performance
- (4) Bridge condition and
- (5) Pavement condition

Current rules require MPOs to either: **a)** adopt the State measures for all five factors; or **b)** choose a combination of either the state's or a MPOs measure. Bi-state MPOs must address each state independently. Performance Measures and Targets established for the Grand Forks-East Grand Forks MPO are included in the adopted *2045 Metropolitan Transportation Plan (MTP)* and related Transit and Bicycle and Pedestrian Elements.

This report illustrates progress toward the attainment of established Safety Targets in the MPO's Planning Area. The examination is based on crash data provided by MN DOT and NDDOT for Year 2018. The following elements are considered during the analysis:

- Serious Injury Analysis (*A: Incapacitating Injury, MN; Coded A: Incapacitating Injury, ND*)
- Calculation of the 5-Years Rolling Average
- Vehicle Miles Traveled (VMT) (*327 000 000*)

At the MPO Planning Area level, fatality and serious injury rate targets are determined by using the 5-years rolling average. The figure has been calculated for each safety performance measure for the following years: 2014-2018. The 5-years rolling average is calculated by adding the figures corresponding to each safety factor in a 5-calendar years period which includes the year for which the targets are established.

The results are divided by 5, and rounded to the tenth or hundredth decimal place depending on the performance measure. The Safety Factors analysis includes consideration for Motorized and Non-motorized Fatalities & Number of Non-Motorized Injuries.

Vehicle Miles Traveled (VMT) estimates which are generated through the Travel Demand Model. VMT estimates include traveling activity reported for all roadways regardless of ownership or functional class within the MPO boundaries. VMT estimates are subject to variations from time to time as the number of vehicles; number of drivers and/or the number of miles traveled miles is subject to change. The Vehicle Miles Traveled (VMT) included in the analysis corresponds to the volumes used for Y 2015.

ANALYSIS AND FINDINGS OF FACT:

Annual State DOTs and MPOs established performance targets for Safety includes an examination of the following factors:

SAFETY PERFORMANCE MEASURES	DOT's STATE TARGETS						Grand Forks- East Grand Forks MPO's Targets			TREND
	Minnesota, 2018	Minnesota, 2019	Minnesota, 2020	North Dakota, 2018	North Dakota, 2019	North Dakota, 2020	MPO Planning Area, 2018	MPO Planning Area, 2019	PROPOSED Y2020 TARGET	
1. Number of Traffic Fatalities	375.0	372.2	375.4	138	127	108.3	3 or Fewer	3 or Fewer	1.8 or Fewer	Decline
2. Number of Fatalities (Per 100 M VMT)	0.62	0.622	0.626	1.34	1.27	1.106	0.673	0.599	0.5504	Decline
3. Number of Crash Related Serious Injuries	1,935	1,711	1,714.2	516	486.2	413.9	18 or Fewer	15 or Fewer	13.0 or Fewer	Decline
4. Number of Serious Injuries(Per 100 M VMT)	3.19	2.854	2.854	5.09	4.848	4.23	5.933	5.296	3.975	Decline
5. Number of Non-Motorized Fatalities & Number of Non Motorized Injuries	348	267.5	317	34	34.6	33.4	3 or Fewer	4 or Fewer	3 or Fewer	Decline

SUPPORT MATERIALS:

Table 1: Analysis of Safety Factors for the MPO Area, 2014-2018

1. All Crashes (2014-2018)

2. Non-Motorized Crashes (2014-2018)

GRAND FORKS-EAST GRAND FORKS MPO SAFETY PERFORMANCE MANAGEMENT (SAFETY PM-1) 2014-2018										
North Dakota + Minnesota										
All Crashes					Non-Motorized					
Year	Fatal (K)	Incapacitating Injury (A)	Non-incapacitating injury	Total Injury		Year	Fatal (k)	Incapacitating Injury (A)	Non-incapacitating injury	Total Injury
2007	2	20	264	284		2007	0	2	16	17
2008	3	13	278	291		2008	0	3	11	14
2009	1	8	194	202		2009	0	1	10	10
2010	4	18	92	110		2010	0	3	13	14
2011	1	16	78	94		2011	0	5	8	12
2012	2	24	72	96		2012	0	0	8	8
2013	3	18	65	83		2013	0	4	8	11
2014	3	19	84	103		2014	0	5	6	11
2015	0	20	101	121		2015	0	2	10	12
2016	0	3	26	29		2016	0	2	13	15
2017	2	13	120	135		2017	0	4	9	13
2018	4	10	99	113		2018	1	1	9	11

3) 5-Years Rolling Average Annual Number of Fatalities

4) 5-Years Rolling Average Number of Non-Motorized Fatalities + Serious Injuries

5-Year Averages (All Crashes)		
Year	Fatal	A
2007-2011	2.2	15.00000
2008-2012	2.2	15.80000
2009-2013	2.2	16.80000
2010-2014	2.6	19.00000
2011-2015	1.8	19.40000
2012-2016	1.6	16.80000
2013-2017	1.6	14.60000
2014-2018	1.8	13.00000

5-Year Averages (Non-Motorized Fatalities & Serious Injuries)	
Year	Fatal + A
2007-2011	2.8000
2008-2012	2.4000
2009-2013	2.6000
2010-2014	3.4000
2011-2015	3.2000
2012-2016	2.6000
2013-2017	3.4000
2014-2018	3.0000

5) All Crash Rates Fatalities per 100 MVMT

Crash Rates per 100 Million Vehicle Miles Traveled (MVMT)		
Year	Fatal	A
2007-2011	0.67278	4.58716
2008-2012	0.67278	4.83180
2009-2013	0.67278	5.13761
2010-2014	0.79511	5.81040
2011-2015	0.55046	5.93272
2012-2016	0.48930	5.13761
2013-2017	0.48930	4.46483
2014-2018	0.55046	3.97554

Note: VMT for 2015 used in calculation for all year ranges