

**FIRST AMENDMENT TO  
VISION 2050: A REGIONAL LAND USE  
AND TRANSPORTATION PLAN FOR  
SOUTHEASTERN WISCONSIN  
ESTABLISHING TARGETS  
FOR FEDERAL PERFORMANCE  
MEASURES: HIGHWAY SAFETY**



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**VISION  
2050**  
One Region, Focusing on Our Future

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## RESOLUTION NO. 2018-11

### RESOLUTION OF THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION AMENDING THE ADOPTED YEAR 2050 REGIONAL LAND USE AND TRANSPORTATION SYSTEM PLAN (“VISION 2050”) FOR SOUTHEASTERN WISCONSIN TO INCLUDE TARGETS FOR THE FEDERAL HIGHWAY SAFETY PERFORMANCE MEASURES

WHEREAS, by Resolution 2016-07, the Southeastern Wisconsin Regional Planning Commission adopted the year 2050 regional land use and transportation system plan documented in SEWRPC Planning Report No. 55, VISION 2050: A Regional Land Use and Transportation System Plan for Southeastern Wisconsin; and

WHEREAS, a National performance management framework was created by the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012, and continued in the Fixing America’s Surface Transportation Act (FAST Act) of 2015, which included the establishment of safety-related performance measures and target setting; and

WHEREAS, as part of implementation of the National performance management framework created by MAP-21, the U.S. Department of Transportation Federal Highway Administration developed and published regulations (effective on May 27, 2016) for States and metropolitan planning organizations (MPOs) to annually establish for all public roadways targets for five safety performance measures: 1) the number of fatalities, 2) the rate of fatalities per one hundred million vehicle miles traveled (HMVMT), 3) number of serious injuries, 4) the rate of serious injuries per HMVMT, and 5) the number of non-motorized (pedestrian and bicyclist) fatalities and serious injuries; and

WHEREAS, pursuant to the regulations promulgated by the U.S. Department of Transportation Federal Highway Administration, the Commission, as the designated MPO for the five urbanized areas in Southeastern Wisconsin, is required to establish targets for the five Federal safety performance measures and report those targets in VISION 2050; and

WHEREAS, the transportation improvement program and the portion of the VISION 2050 regional transportation system plan that is fiscally constrained have been determined to conform with the 2006 24-hour fine particulate standard and the existing State of Wisconsin Air Quality Maintenance Plan for the year 2006 24-hour fine particulate standard, the 2008 eight-hour ozone standard and the existing State of Wisconsin Early Progress Plan for the 2008 eight-hour ozone standard, and the existing State of Wisconsin Air Quality Maintenance Plan for the year eight-hour ozone standard as required by the Federal Clean Air Act Amendments of 1990; and

WHEREAS, the Advisory Committees on Regional Land Use Planning and Regional Transportation Planning at their meeting held on January 18, 2018, endorsed the safety-related performance targets for the Southeastern Wisconsin metropolitan planning area and seven-county region, as documented in a SEWRPC report entitled, *First Amendment to VISION 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin, Establishing Targets for Federal Performance Measures: Highway Safety*.

NOW THEREFORE, BE IT HEREBY RESOLVED:

FIRST: That in accordance with 23 CFR 450.336(a), the Southeastern Wisconsin Regional Planning Commission hereby certifies that the regional land use-transportation planning process is addressing the issues of the metropolitan planning area, and is being conducted in accordance with all applicable Federal laws, regulations, and requirements, including:

## RESOLUTION NO. 2018-11

1. 23 U.S.C. 134, 49 U.S.C. 5303, and this subpart;
2. In nonattainment and maintenance areas, Sections 174 and 176 (c) and (d) of the Clean Air Act, as amended (42 U.S.C. 7504, 7506 (c) and (d)) and 40 CFR part 93;
3. Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CFR part 21;
4. 49 U.S.C. 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex, or age in employment or business opportunity;
5. Sections 1101(b) of the FAST Act (Pub. L. 114-357) and 49 CFR Part 26 regarding the involvement of disadvantaged business enterprises in USDOT funded projects;
6. 23 CFR part 230, regarding the implementation of an equal employment opportunity program on Federal and Federal-aid highway construction contracts;
7. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 *et seq.*) and 49 CFR Parts 27, 37, and 38;
8. The Older Americans Act, as amended (42 U.S.C. 6101), prohibiting discrimination on the basis of age in programs or activities receiving Federal financial assistance;
9. Section 324 of title 23 U.S.C. regarding the prohibition of discrimination based on gender; and
10. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and 49 CFR part 27 regarding discrimination against individuals with disabilities.

SECOND: That the year 2050 regional land use and transportation system plan, being a part of the master plan for the physical development of the Region and set forth in SEWRPC Planning Report No. 55, *VISION 2050: A Regional Land Use and Transportation System Plan for Southeastern Wisconsin*, published in July 2016, be hereby amended to include the safety targets for the five Federal safety performance measures identified in Tables ES.1 and ES.2 attached hereto.

THIRD: That a true, correct, and exact copy of this resolution should be forthwith distributed to each of the local legislative bodies of the governmental units within the Region entitled thereto and to such other bodies, agencies, or individuals as the law may require or as the Commission or its Executive Committee or its Executive Director at their discretion shall determine and direct.

The foregoing resolution, upon motion duly made and seconded, was regularly adopted at a meeting of the Southeastern Wisconsin Regional Planning Commission held on the 20<sup>th</sup> day of June 2018, with the vote being 13 ayes; 0 nays.



Charles L. Colman, Chairman

ATTEST:



Michael G. Hahn, Deputy Secretary

**Table 1**  
**Final Recommended Regional Years 2046-2050 Targets**  
**for the National Safety-Related Performance Measures**

<b>Performance Measure</b>	<b>2012-2016 Baseline Data</b>	<b>Preliminary Recommended 2046-2050 Target</b>	<b>Percent Change from 2012-2016 Base Year</b>
Number of Fatalities	152.2	91.9	-39.6
Rate of Fatalities	0.962	0.488	-49.3
Number of Serious Injuries	798.2	144.1	-82.0
Rate of Serious Injuries	5.053	0.766	-84.8
Number of Non-Motorized Fatalities and Serious Injuries	167.2	45.7	-72.7

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

**Table 2**  
**Resulting 2014-2018 Targets for the National Safety-Related Performance**  
**Measures for the Metropolitan Planning Area and Seven-County Region**  
**Based on the Final Recommended Years 2046-2050 Regional Targets**

<b>Performance Measure</b>	<b>Metropolitan Planning Area</b>		<b>Seven-County Region</b>	
	<b>2012-2016 Baseline Data</b>	<b>Resulting 2014-2018 Target</b>	<b>2012-2016 Baseline Data</b>	<b>Resulting 2014-2018 Target</b>
Number of Fatalities	137.2	133.2	152.2	147.7
Rate of Fatalities	0.923	0.884	0.962	0.922
Number of Serious Injuries	743.8	672.5	798.2	721.7
Rate of Serious Injuries	5.005	4.464	5.053	4.504
Number of Non-Motorized Fatalities and Serious Injuries	161.0	149.2	167.2	154.9

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC



FIRST AMENDMENT TO



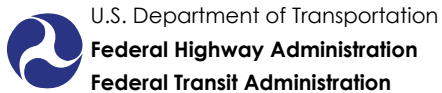
A REGIONAL LAND USE AND TRANSPORTATION  
PLAN FOR SOUTHEASTERN WISCONSIN

**ESTABLISHING TARGETS FOR FEDERAL  
PERFORMANCE MEASURES: HIGHWAY SAFETY**



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June 2018





# AMENDMENT TO VISION 2050 ESTABLISHING TARGETS FOR FEDERAL PERFORMANCE MEASURES: HIGHWAY SAFETY

## EXECUTIVE SUMMARY

The Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012, created a national performance management framework that established uniform performance measures and target setting to, in part, create a consistent nationwide process for monitoring the effectiveness of Federal transportation investments, including investments in safety-related improvements implemented with Highway Safety Improvement Program (HSIP) funding. As part of implementing the national performance management framework, States and metropolitan planning organizations (MPOs), like the Commission, are to annually establish targets for the five safety performance measures:

- Number of fatalities
- Rate of fatalities per one hundred million vehicle miles traveled (HMVMT)
- Number of serious injuries
- Rate of serious injuries per HMVMT
- Number of non-motorized (pedestrian/bicyclist) fatalities and serious injuries

Under the national performance management framework, the State is required to establish safety performance targets for the State and the Commission is required to establish safety performance targets for the Region's metropolitan planning area. The targets are set for each of the five safety measures as a rolling five-year average ending in the year after the reporting year (2018), and are compared to a base rolling five-year average ending in the year previous to the reporting year (2016). While the Commission is required to establish safety targets and plan and program for achievement of those targets, there are no consequences should those targets not met. In addition, the safety performance targets established for the Region are required to be incorporated into VISION 2050—the year 2050 regional land use and transportation plan completed in 2016.

In August 2017, the Wisconsin Department of Transportation (WisDOT) established and reported statewide targets for the five safety performance targets, in coordination with the State's metropolitan planning organizations (MPOs), including the Commission, and with the State Highway Safety Office. Following the establishment of targets by WisDOT, the Commission could either choose to accept the statewide targets (and plan and program to achieve WisDOT's targets) or establish its own targets (and plan and program to achieve the areawide targets). The Commission is permitted to choose to accept WisDOT's targets for some of the safety measures and establish its own targets for the remaining measures. The following describes the process used by the Commission in developing the safety performance targets for the Southeastern Wisconsin Region, and preliminary and final recommended targets for meeting the national performance management requirements and inclusion in VISION 2050.

### **Process for Establishing Targets**

Given the requirement to include the short-range target-setting process into VISION 2050, a long-range plan, it was determined that long-term regional targets (for the period 2046-2050) should be established for each of the five safety performance measures. The establishment of the short-term targets for the metropolitan planning area, as required as part of the national performance measure framework, was based on the long-term regional targets.

With respect to establishing long-term safety targets, the following process was used:

1. Baseline data for each of the measures was developed for the Region, plus those portions of Jefferson and Dodge Counties within the metropolitan planning area.
2. Historical regional trends in the number and rate of fatalities and serious injuries and the number of non-motorized (bicycle and pedestrian) fatalities and serious injuries were reviewed.
3. The safety-related recommendations of VISION 2050 and the State's latest Strategic Highway Safety Plan (SHSP) were reviewed to determine their potential effect on crashes in the Region.
4. Based on the evaluations of the historical trends and the review of the safety recommendations of VISION 2050 and SHSP, alternative methods for establishing targets were developed and evaluated based on their ability to meet the aspirational nature of, and quantify the safety objective and recommendations of, VISION 2050, while recognizing and considering the effect of past efforts to reduce the number and rate of crashes.
5. Based on the evaluation of the alternative methods, preliminary recommended targets for years 2046-2050 were developed for each of the five safety performance measures for inclusion in VISION 2050.

After following this process, it was determined that separate areawide short-term targets for the safety performance measures would be established for the Region, rather than accepting the State's targets.

More details on the process used to establish the safety performance targets for the Region can be found in the remainder of this document.

### **Preliminary Recommended Targets for Safety-Related Performance Measures**

Preliminary recommended years 2046-2050 regional targets for each of the five national safety performance measures were proposed for incorporation into VISION 2050, as an amendment. The preliminary recommended safety targets, along with the process to establish the targets, were reviewed and endorsed by the Commission's Advisory Committees on Regional Land Use Planning and Regional Transportation Planning at a joint meeting held on January 18, 2018, and were presented for review and comment by the public from March 14, 2018, through April 13, 2018. No comments were received during the public review and comment period. The targets were approved as part of VISION 2050 by the Advisory Committees at a joint meeting held on April 26, 2018, and by the Commission on June 20, 2018.

### **Final Recommended Targets for Safety-Related Performance Measures**

The final recommended years 2046-2050 regional target for each of the five national safety performance measures are shown on Table ES.1. Table ES.2 shows the resulting short-term years 2014-2018 safety targets for both the Region's metropolitan planning area and the seven-county Region. The final targets represent the aspirational nature of, and quantify, the safety objective and safety recommendations of VISION 2050, but recognize the effect of past efforts to reduce the number and rate of fatalities and serious injuries. While there may be fluctuations in the number of fatalities and serious injuries from year-to-year (which may cause short-term targets to not be met), it is expected that with the long-term implementation of the recommendations of VISION 2050 and the State's SHSP—along with continued improvements in vehicular safety (including driver-assistance technology and automated vehicles)—the long-term decline in fatalities and serious injuries will continue.

### **Reporting and Monitoring of Safety Targets**

The safety targets will be reported and monitored in the transportation system performance section of the Commission's Annual Report and on its website. The regional long-term targets will be reviewed and potentially updated every four years as part of the interim regional plan update and every 10 years as part of the major regional plan update.

**Table ES.1**  
**Final Recommended Regional Years 2046-2050 Targets**  
**for the National Safety-Related Performance Measures**

<b>Performance Measure</b>	<b>2012-2016 Baseline Data</b>	<b>Preliminary Recommended 2046-2050 Target</b>	<b>Percent Change from 2012-2016 Base Year</b>
Number of Fatalities	152.2	91.9	-39.6
Rate of Fatalities	0.962	0.488	-49.3
Number of Serious Injuries	798.2	144.1	-82.0
Rate of Serious Injuries	5.053	0.766	-84.8
Number of Non-Motorized Fatalities and Serious Injuries	167.2	45.7	-72.7

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

**Table ES.2**  
**Resulting 2014-2018 Targets for the National Safety-Related Performance**  
**Measures for the Metropolitan Planning Area and Seven-County Region**  
**Based on the Final Recommended Years 2046-2050 Regional Targets**

<b>Performance Measure</b>	<b>Metropolitan Planning Area</b>		<b>Seven-County Region</b>	
	<b>2012-2016 Baseline Data</b>	<b>Resulting 2014-2018 Target</b>	<b>2012-2016 Baseline Data</b>	<b>Resulting 2014-2018 Target</b>
Number of Fatalities	137.2	133.2	152.2	147.7
Rate of Fatalities	0.923	0.884	0.962	0.922
Number of Serious Injuries	743.8	672.5	798.2	721.7
Rate of Serious Injuries	5.005	4.464	5.053	4.504
Number of Non-Motorized Fatalities and Serious Injuries	161.0	149.2	167.2	154.9

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC



**AMENDMENT TO VISION 2050 ESTABLISHING TARGETS FOR  
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## INTRODUCTION

The Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012, created a national performance management framework that established uniform performance measures and target setting to, in part, establish a consistent nationwide process for monitoring of the effectiveness of Federal transportation investments, including investments in safety-related improvements with Highway Safety Improvement Program (HSIP) funding. This framework was continued in the Fixing America's Surface Transportation Act (FAST Act) enacted in 2015. As part of implementing the national performance management framework established by MAP-21 and the FAST Act, the Federal Highway Administration (FHWA) has developed regulations (effective on May 27, 2016) for States and metropolitan planning organizations (MPOs), like the Regional Planning Commission, to annually establish for all public roadways targets for five safety performance measures: 1) the number of fatalities, 2) the rate of fatalities per one hundred million vehicle miles traveled (HMVMT), 3) number of serious injuries, 4) the rate of serious injuries per HMVMT, and 5) the number of non-motorized fatalities and serious injuries.<sup>1</sup> The targets are set for each of the five performance measures as a rolling five-year average<sup>2</sup> ending the year after the reporting year. The targets are compared to a base rolling five-year average ending in the year previous to the reporting year.

The safety performance targets established for the Region are required to be incorporated into VISION 2050—the year 2050 regional land use and transportation plan completed in 2016. Subsequent updates to VISION 2050 (every four years as part of interim plan updates and every 10 years as part of major updates) will also include a monitoring of the achievement of the targets. In addition, the regional transportation improvement program (TIP) is required to include a description of how the projects programmed in the TIP promote the achievement of the safety performance targets. The deadline for incorporating the safety performance targets is May 27, 2018, or two years after the effective date of the safety performance regulations. While the Commission is required to establish safety targets and plan and program for achievement of those targets, there are no consequences—unlike for the State<sup>3</sup>—should those targets not be met.

In August 2017, the Wisconsin Department of Transportation (WisDOT) established statewide targets for the five safety performance targets, in coordination with the State's MPOs, including the Commission, and with the State Highway Safety Office. Table 1 shows the WisDOT established targets for the five-year rolling average for the years 2014-2018 based on the baseline five-year rolling average for the years 2012-2016. The targets represent a reduction in the two-year period in the five-year rolling average of 2 percent for the safety performance measures related to the number and rate of fatalities and of 5 percent for the safety performance measures related to the number and rate of serious injuries and the number of non-motorized fatalities and serious injuries. These targets were reported in the State's year 2017 HSIP report completed on August 31, 2017.

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<sup>1</sup> A non-motorized fatality or serious injury involves any vehicular crash that results in the death or serious injury of a pedestrian, bicyclist, or person utilizing a wheel chair (manual or motorized).

<sup>2</sup> Due to the somewhat random nature of crashes, the frequency of crashes from year-to-year can fluctuate, and it is possible that the number of crashes in one year may be lower or higher than a typical year. Thus, to avoid annual anomalies, the annual average of the number of crashes over a certain time period is commonly used (such as three or five years). The safety performance measure regulations developed by FHWA specify that the five-year rolling average be used for base year and target-setting purposes.

<sup>3</sup> The State's targets are evaluated each year by FHWA to determine whether the State has "met or made significant progress" towards achieving the safety performance targets. This is determined for each safety performance measure by whether its outcome for the evaluation year is either at or below the established target (or meeting the target) or less than the base five-year rolling average used to establish the target. If these conditions are met for four out of the five performance measures, FHWA would consider WisDOT having met or made significant progress towards achieving the statewide safety targets. If the State is determined to not have met or made significant progress, the State would be required to use in the following year all of the HSIP funding it receives only on highway safety improvement projects (and would not have the flexibility to transfer HSIP funding to other FHWA funding programs). The first determination of whether the State met or made significant progress towards its safety targets would be conducted by FHWA in 2019. Should WisDOT not meet or show significant progress for at least four performance measures that year, the restrictions would apply to the use of HSIP funding in 2020.

**Table 1**  
**Year 2014-2018 Statewide Baseline Levels and Targets for**  
**the National Safety Performance Measures**

<b>Performance Measure</b>	<b>Year 2012-2016 Baseline 5-Year Average</b>	<b>Year 2014-2018 Target</b>
Number of Fatalities	567.4	556.1
Fatalities Per 100 Million Vehicle-Miles Traveled	0.936	0.917
Number of Serious Injuries	3,183.0	3,023.9
Serious Injuries Per 100 Million Vehicle-Miles Traveled	5.260	4.997
Number of Non-Motorized Fatalities and Serious Injuries	361.4	343.3

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

Based on the regulations, the Commission is required to establish safety performance targets for the Region’s metropolitan planning area (see Map 1) for the same five-year period as WisDOT’s targets. The Commission can either choose to accept the targets established by the State (and plan and program to achieve the State targets) or establish its own targets (and plan and program to achieve the areawide targets), with the Commission being permitted to choose to accept WisDOT’s targets for some of the safety measures and establish its own targets for the remaining measures.<sup>4</sup> The short-term (two-year) targets for the safety performance measures need to be established by February 27, 2018 (or within 180 days following WisDOT reporting its targets).

The remainder of this memorandum documents the process followed by the Commission in establishing targets for the five safety-related performance measures, and amending VISION 2050 to incorporate the establishing and monitoring of the safety targets.

## **PROCESS FOR ESTABLISHING SAFETY TARGETS**

To allow the effective monitoring of safety-related plan recommendations and projects programmed in the Region in achieving the targets, separate areawide short-term targets for the safety performance measures were established for the Region, rather than accepting the State’s targets. To integrate the target-setting process into VISION 2050, regional long-term targets (for the period 2046-2050) were established for each of the five safety performance measures, and have been amended into VISION 2050. The transportation system performance section of the Commission’s Annual Report will include the monitoring of achievement of the safety targets, and the regional long-term targets will be reviewed and potentially updated every four years as part of the interim regional plan update and every 10 years as part of the major regional plan update. The establishment of the short-term targets for the metropolitan planning area, as required by the planning regulations, will be based on the long-term regional targets.

The first step to develop years 2046-2050 safety targets for each of the five safety-related performance measures was the establishment of the baseline data for each of the measures for the Region, plus those portions of Jefferson and Dodge Counties within the metropolitan planning area. The next step in establishing the years 2046-2050 safety targets involved a review of trends in the number and rate of fatalities and serious injuries, along with the number of non-motorized (bicycle and pedestrian) fatalities and serious injuries, that have occurred historically in the Region. In addition, the safety-related recommendations of VISION 2050 and the State’s latest Strategic Highway Safety Plan (SHSP) were reviewed to determine their potential effect on crashes in the Region. Based on these evaluations, Commission staff developed and evaluated alternative targets for each of the three number-based performance measures—fatalities, serious injuries, and non-motorized fatalities and serious injuries. For the two rate-related criteria, the alternatives considered included applying projected vehicle-miles traveled (VMT) data to the alternatives developed for the number of fatalities and number of serious injuries criteria. Based on the evaluation of the alternatives, Commission staff identified preliminary recommended targets for years 2046-2050 for each of the five safety performance measures for inclusion in VISION 2050.

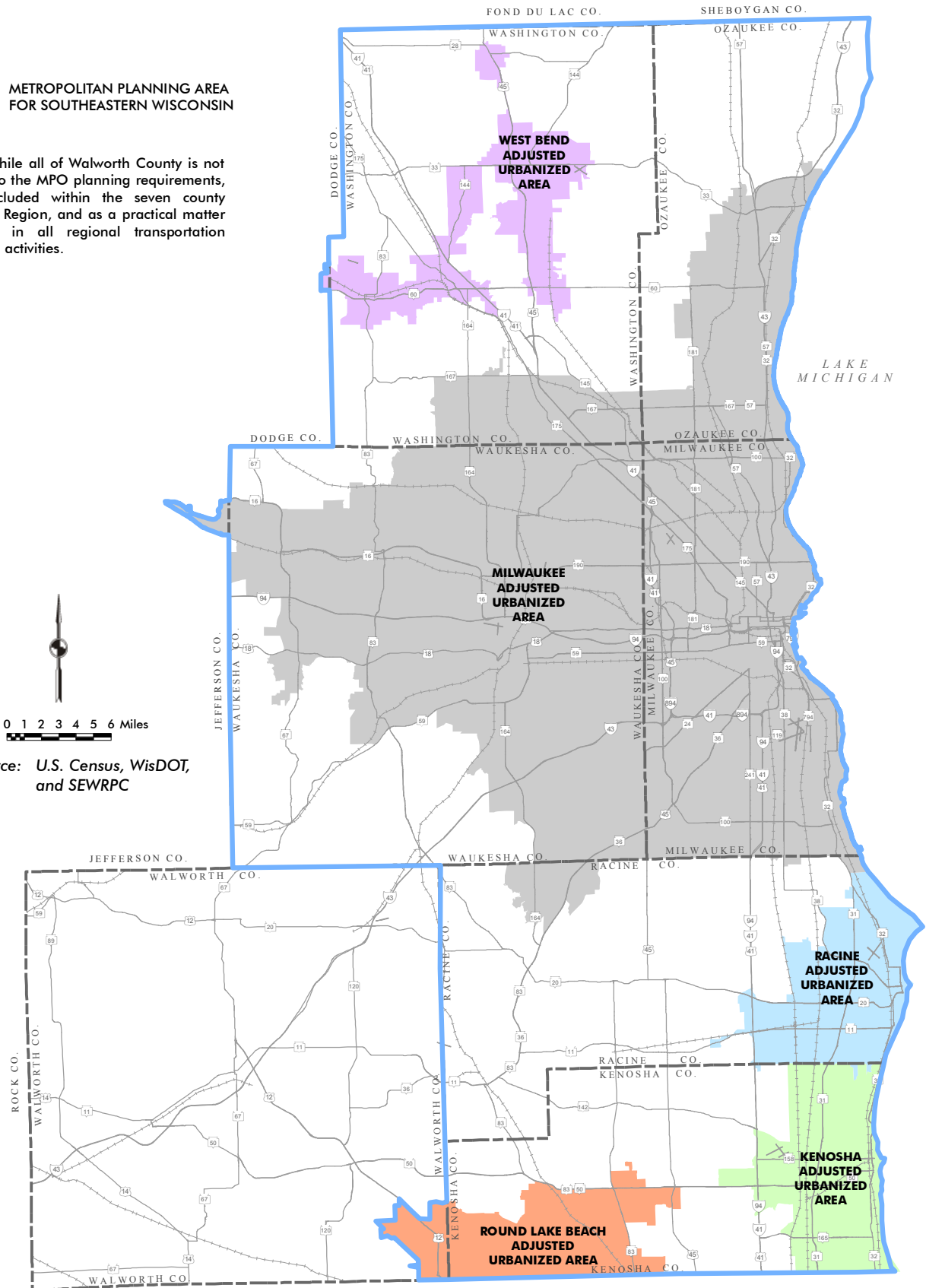
<sup>4</sup> This was included in the regulation to recognize that some MPOs may not have the resources to establish their own targets for the performance measures.

# Map 1 Southeastern Wisconsin Metropolitan Planning Area

**LEGEND**

 METROPOLITAN PLANNING AREA FOR SOUTHEASTERN WISCONSIN

Note: While all of Walworth County is not subject to the MPO planning requirements, it is included within the seven county SEWRPC Region, and as a practical matter included in all regional transportation planning activities.



Source: U.S. Census, WisDOT, and SEWRPC

**Table 2**  
**Year 2012-2016 Baseline Levels for the National Safety Performance**  
**Measures: Seven-County Southeastern Wisconsin Region<sup>a</sup>**

Performance Measure	Year					5-Year Average
	2012	2013	2014	2015	2016	
Number of Fatalities	162	125	145	150	179	152.2
Fatalities Per 100 Million Vehicle-Miles Traveled	1.038	0.792	0.930	0.945	1.108	0.962
Number of Serious Injuries	898	834	745	716	798	798.2
Serious Injuries Per 100 Million Vehicle-Miles Traveled	5.751	5.283	4.778	4.512	4.940	5.053
Number of Non-Motorized Fatalities and Serious Injuries	183	168	151	165	169	167.2

<sup>a</sup> Includes the portion of Jefferson County within the Milwaukee urbanized area and the portion of Dodge County within the West Bend urbanized area.

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

The preliminary year 2046-2050 targets were reviewed and considered by the Commission’s Advisory Committees on Regional Land Use Planning and Regional Transportation Planning for incorporation into VISION 2050 as a plan amendment. The public had an opportunity to review and provide comment on the targets during a 30-day public comment period. The preliminary targets, along with any comments received and addressed by Commission staff, were then reviewed and considered by the Commission as an amendment to VISION 2050.

### Regional Baseline Data

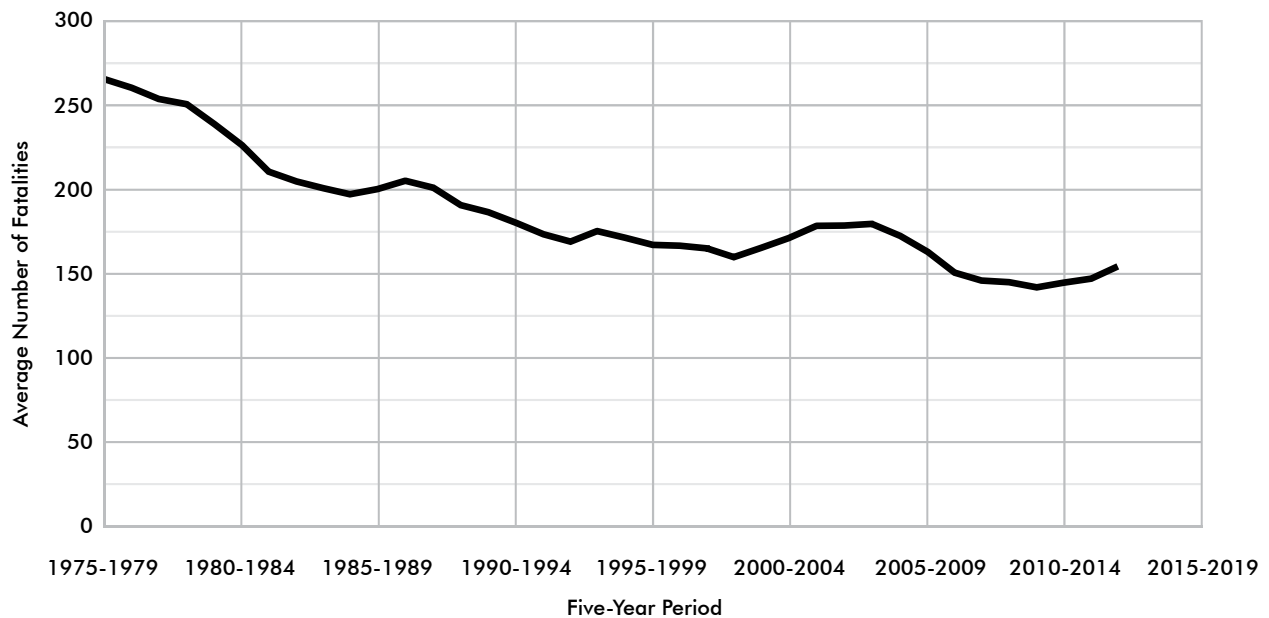
Table 2 shows the years 2012-2016 five-year rolling average (representing the baseline) for the five safety performance measures for the Region, including the portions of Jefferson and Dodge Counties within the metropolitan planning area. The number of fatalities, number of serious injuries, and number of non-motorized fatalities and non-motorized serious injuries reported were based on county-level crash data reported by WisDOT. The numbers for each of the performance measures for the small portions of Jefferson and Dodge Counties were estimated based on reviewing the crashes recorded in the State’s crash database maintained by the University of Wisconsin-Madison’s Transportation Operations and Safety Laboratory (TOPS Lab). The VMT data used for the two safety performance measures involving rates were based on VMT data maintained by the Commission for the Region. The methodology utilized by the Commission for estimating historical VMT for the Region is documented in Attachment B of this document.

The Region’s five-year rolling average for both the number of fatalities and the number of serious injuries represents about one-quarter of the State’s five-year rolling average. Similarly, the year 2016 VMT within the Region accounts for a quarter of the year 2016 VMT within the State. However, the Region accounts for about 45 percent of the State’s five-year rolling number of bicycle/pedestrian fatalities and serious injuries. This exceeds the Region’s share of 2016 VMT of 25 percent and share of population of 35 percent. Given the significant share that the Region has of the State’s fatalities and serious injuries, it would be expected that efforts to reduce fatalities and serious injuries in the Region would significantly contribute to the State achieving its targets.

### Evaluation of Historical Trends

As part of establishing targets for the five safety performance measures, an evaluation was conducted on the historical number and rate of fatalities, number and rate of serious injuries, and number of non-motorized (pedestrian and bicyclist) fatalities and serious injuries. To avoid the annual anomalies that can occur with these data, the trends of the historical five-year rolling averages were evaluated. The number of fatalities and serious injuries in the Region (including the portion of Jefferson and Dodge Counties within the metropolitan planning area) was evaluated. A separate review of the number of total crashes that have occurred within the Region is provided in Attachment A of this document. This attachment provides an update to the crash review that was conducted and included in the inventory sections of the VISION 2050 plan report.

**Figure 1**  
**Five-Year Rolling Average of Number of Fatalities in Southeastern Wisconsin: 1975-2016**



Source: Fatality Analysis Reporting System (FARS)

**Number of Fatalities**

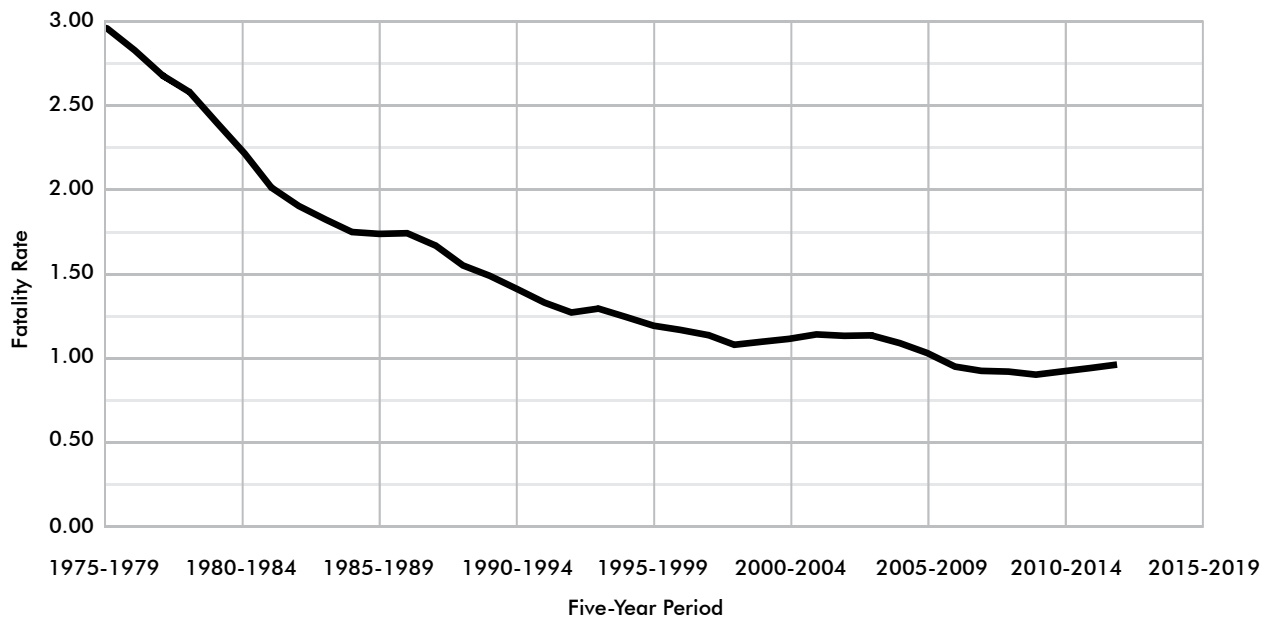
Figure 1 shows the rolling five-year average of the number of fatalities within the Region (including the portions of Jefferson and Dodge Counties within the metropolitan planning area) over the 42-year period of 1975 through 2016.<sup>5</sup> Over this time period, there has been an overall decline in the rolling average of about 42.3 percent (or an average annual decline of about 1.5 percent). The decline in the five-year rolling average was fairly uniform from the 1975-1979 period to the 1998-2002 period. While the overall five-year rolling average has decreased by only about 3.5 percent since the 1998-2002 time period (or an average annual decline of about 0.3 percent), there have been large fluctuations in the five-year rolling average over this time period. From the 1998-2002 time period, the five-year rolling average increased from 157.8 fatalities to a high of 177.4 fatalities in the 2003-2007 time period, an increase of about 12.4 percent (or an average increase of about 2.3 percent). This was followed by a decline from the 2003-2007 period to a historical low of 139.8 fatalities in the 2009-2013 period, a decline of about 21.2 percent (or an average annual decline of about 3.9 percent). However, since the historical low in the 2009-2013 period, the five-year rolling average of the number of fatalities has gradually increased to 152.2 fatalities in the 2012-2016 period, an increase of about 8.9 percent (or an average annual increase of about 2.9 percent). While there has been a recent increase in the five-year rolling average for the number of fatalities, the decrease from the recent high in the 2003-2007 period to the 2012-2016 period is consistent with the historical average annual decline of about 1.7 percent.

**Rate of Fatalities**

Figure 2 shows the rolling five-year average of the rate of fatalities, which represents the number of fatalities per 100 million vehicle-miles of travel (HMVMT), within the Region over the 42-year period of 1975 through 2016. As expected, the five-year rolling average for the rate of fatalities declined in a similar manner to the number of fatalities over the same time period, including fluctuations in the number of fatalities over time (particularly since the 1998-2002 period). However, because of the general increase in total VMT over the same time period (as shown on Figure 3), the rolling average of the rate of fatalities had greater declines, or lesser increases, than the rolling average for the number of fatalities. Specifically, from 1975 through 2016, there has been an overall decline in the five-year rolling average in the rate of fatalities of about 67.6 percent (or an average annual decline of about

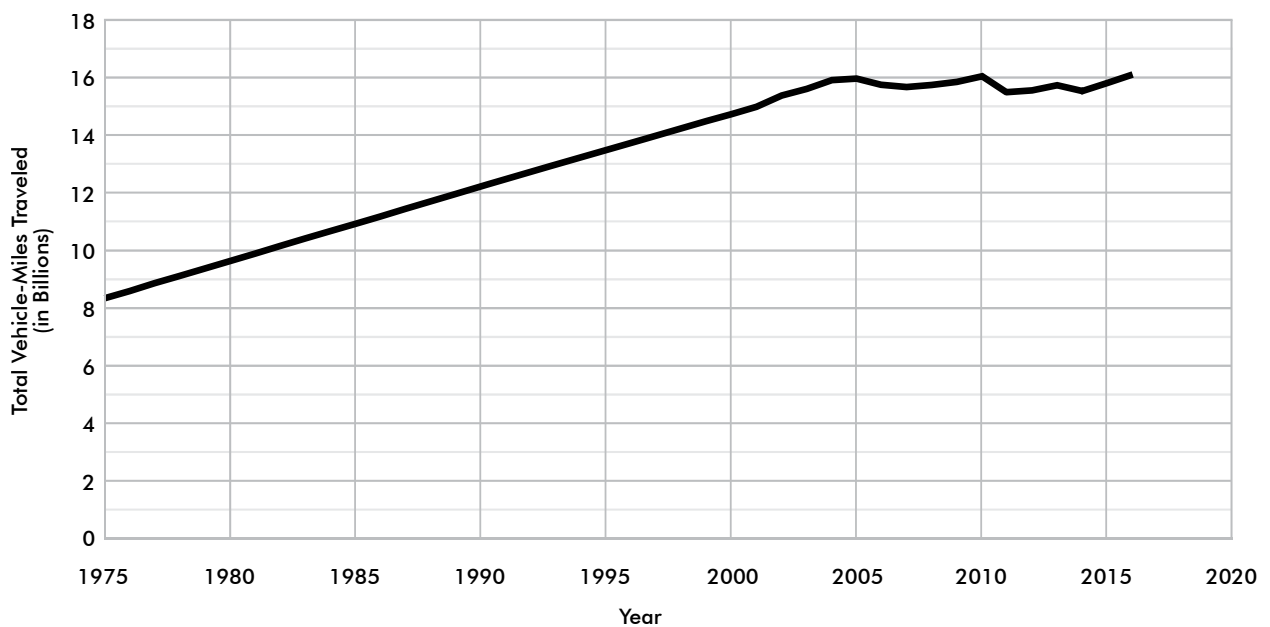
<sup>5</sup> The source of the number of vehicular-crash related fatalities is the Fatality Analysis Reporting System (FARS), which has historical fatality numbers available for each county for crashes that have occurred from 1975 to 2016.

**Figure 2**  
**Five-Year Rolling Average of the Fatality Rate in Southeastern Wisconsin: 1975-2016**



Source: Fatality Analysis Reporting System (FARS)

**Figure 3**  
**Total Annual Vehicle-Miles Traveled in Southeastern Wisconsin: 1975-2016**



Source: SEWRPC

3.1 percent), a greater decline than the rolling average of the number of fatalities over the same time period. However, from the 2009-2013 period to the 2012-2016 period, the rolling average of the fatality rate increased by about 8.6 percent (or an average annual increase of about 2.7 percent), which is slightly less of an increase than the increase in the rolling average for the number of fatalities over the same time period.

### **Number of Serious Injuries**

As shown on Figure 4, the five-year rolling average of the number of serious injuries<sup>6</sup> has consistently declined within the Region over the time period of 1994 to 2016<sup>7</sup> by about 59.6 percent (or an average annual decline of about 4.9 percent). One exception to this occurred between the two most recent five-year periods—2011-2015 and 2012-2016—where the percent change was only about 1.6 percent.

### **Rate of Serious Injuries**

As shown on Figure 5, similar to the number of serious injuries, the rolling average of the serious injury rate has consistently declined in the Region over the time period from 1994 to 2016. The five-year rolling average of the rate of serious injuries has decreased over this time period by about 64.9 percent (or an average annual decline of 5.6 percent), a slightly higher decline than that for the number of fatalities over the same time period. The higher decline in the rate of serious injuries is due to the general increase in VMT over the same time period.

### **Non-Motorized Fatalities and Serious Injuries**

Figure 6 shows the five-year rolling average of the number of non-motorized (pedestrian/bicyclist) fatalities and serious injuries (with about 10-20 percent representing the number of non-motorized fatalities and 80 to 90 percent representing the number of non-motorized serious injuries). The five-year rolling average of non-motorized fatalities and serious injuries has consistently declined from 1994 to 2016 by about 49.7 percent (or an average annual decline of about 3.7 percent). However, the rate of decline is less in more recent years. Following about a 42.9 percent decline between the 1994-1998 and 2004-2008 periods (or an average annual decline of about 5.5 percent), the five-year rolling average for non-motorized fatalities and serious injuries declined from the 2003-2008 period to the 2012-2016 period by about 12.5 percent (or an average annual decline of about 1.5 percent). In the last few five-year periods, the five-year rolling average has essentially been flat with the five-year rolling average slightly rising from 166.8 non-motorized fatalities and serious injuries in the 2010-2014 period to 167.2 non-motorized fatalities and serious injuries in the 2012-2016 period, an increase of about 0.2 percent (or an average annual increase of about 0.1 percent).

### **Evaluation of Trends**

The overall decline in the number of fatalities and serious injuries is significant given the growth in population (see Figure 7), registered vehicles (see Figure 8), and VMT (see Figure 3) that has occurred. The decline in fatalities and serious injuries has occurred, in large part, through efforts by many groups and agencies, including advances in vehicle and roadway technology, changes in traffic laws and enforcement levels, advances in emergency medical services, education efforts, and the implementation of engineered safety solutions.

### **Review of Relevant Plans**

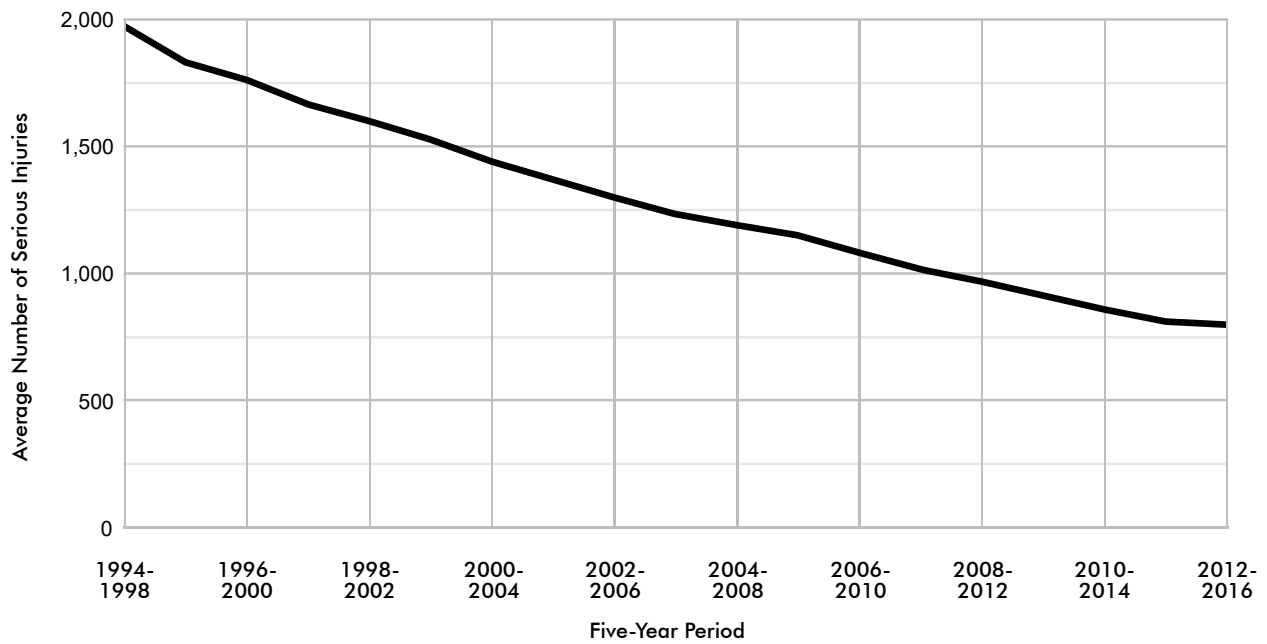
The State's 2017-2020 Strategic Highway Safety Plan (SHSP) and the year 2050 regional land use and transportation plan—VISION 2050—were reviewed as part of the target-setting process. Both of these plans include recommendations for addressing vehicular crashes in the future—the next four years with respect to the SHSP and the next 35 years with respect to VISION 2050.

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<sup>6</sup> Under the KABC system for reporting the severity of crashes that is currently used by the State of Wisconsin, the actual number of suspected serious injuries is not recorded in the crash report by the presiding officer, unlike the number of fatalities. The crash reports in Wisconsin only indicate whether any of the drivers of the vehicles or a pedestrian/bicyclist involved in a crash was suspected of having a serious injury. As a result, the number of serious injuries included in this table is based on applying adjustment factors specified by FHWA to the number of suspected serious injuries provided in the police reports. MAP-21 specified that all states by April 15, 2019, are to determine serious injuries using the Model Minimum Uniform Crash Criteria (MMUCC) 4<sup>th</sup> Edition, which includes the reporting of the number of serious injuries of all persons involved in each crash, similar to what is done for the number of suspected fatalities. Thus, there may be an increase in the number of serious injuries that result from a vehicular crash following the implementation of the MMUCC on April 15, 2019, by the State. However, it would be expected that there would still be a declining trend in the number of serious injuries.

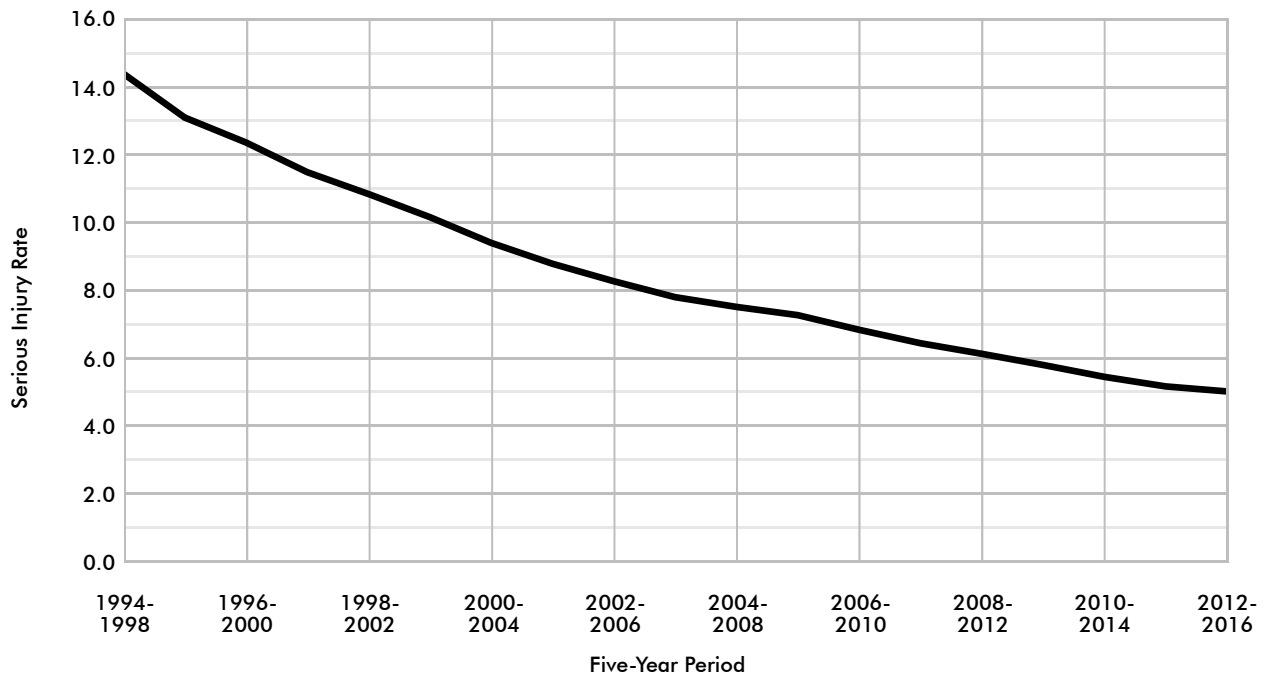
<sup>7</sup> The source of the number of vehicular-related serious injuries is the TOPS Lab database, which has historical crash data available for each county for crashes that have occurred from 1994 to 2016.

**Figure 4**  
**Five-Year Rolling Average of Number of Serious Injuries**  
**in Southeastern Wisconsin: 1994-2016**



Source: Wisconsin Traffic Operations and Safety (TOPS) Laboratory

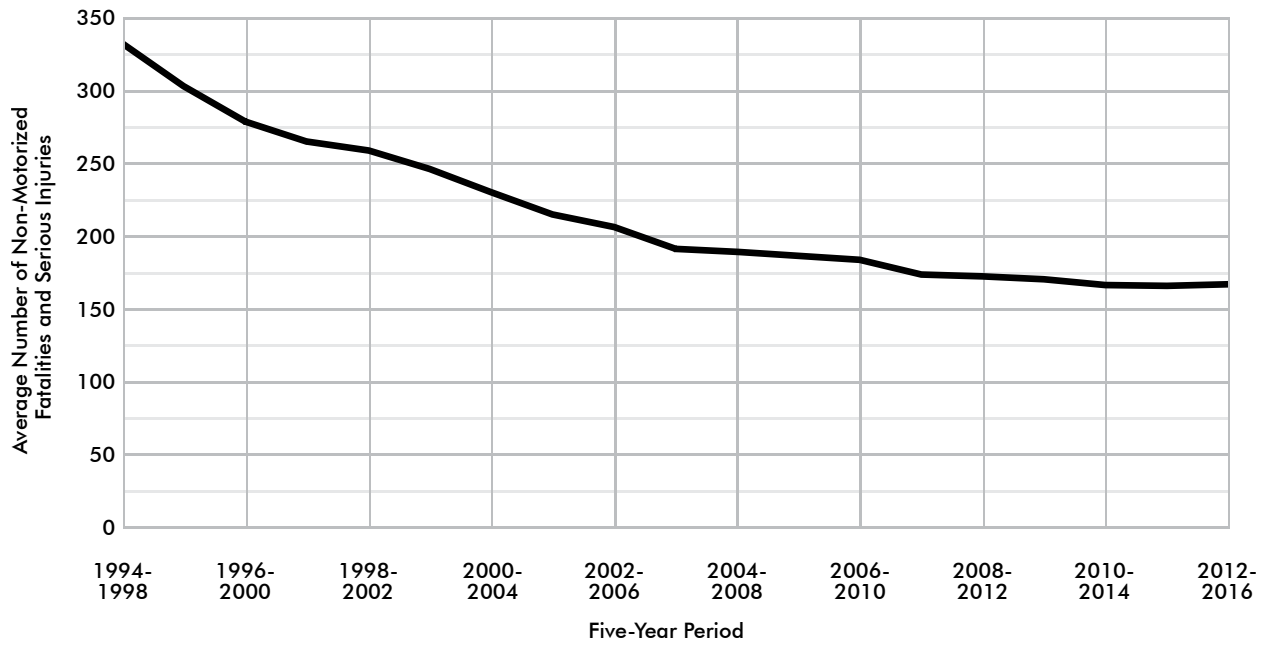
**Figure 5**  
**Five-Year Rolling Average of the Serious Injury Rate in Southeastern Wisconsin: 1994-2016**



Source: Wisconsin Traffic Operations and Safety (TOPS) Laboratory

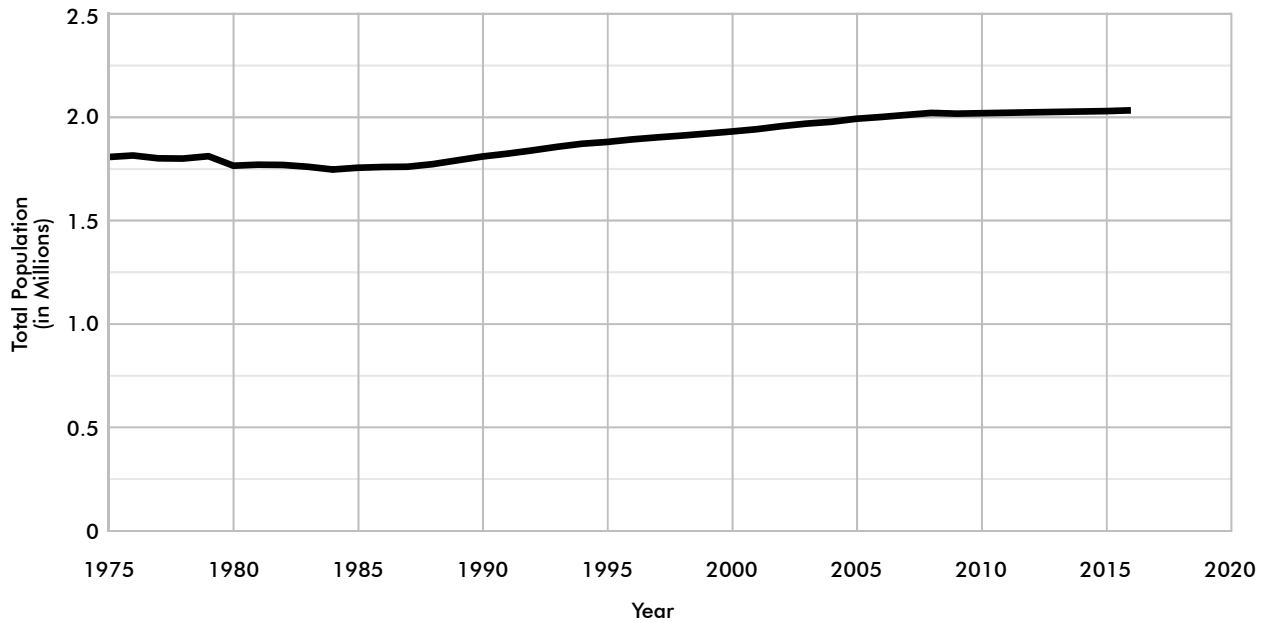


**Figure 6**  
**Five-Year Rolling Average of Number of Non-Motorized Fatalities and Serious Injuries in Southeastern Wisconsin: 1994-2016**



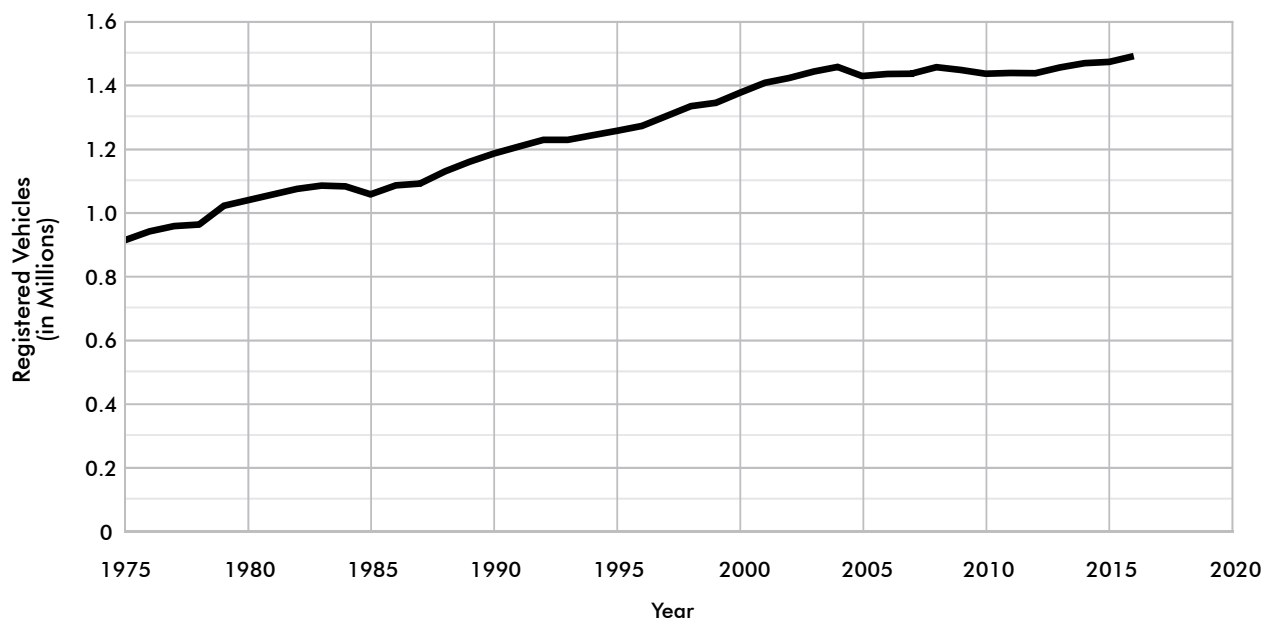
Source: SEWRPC

**Figure 7**  
**Total Population in Southeastern Wisconsin: 1975-2016**



Source: SEWRPC

**Figure 8**  
**Total Registered Vehicles in Southeastern Wisconsin: 1975-2016**



Source: SEWRPC

### **Strategic Highway Safety Plan**

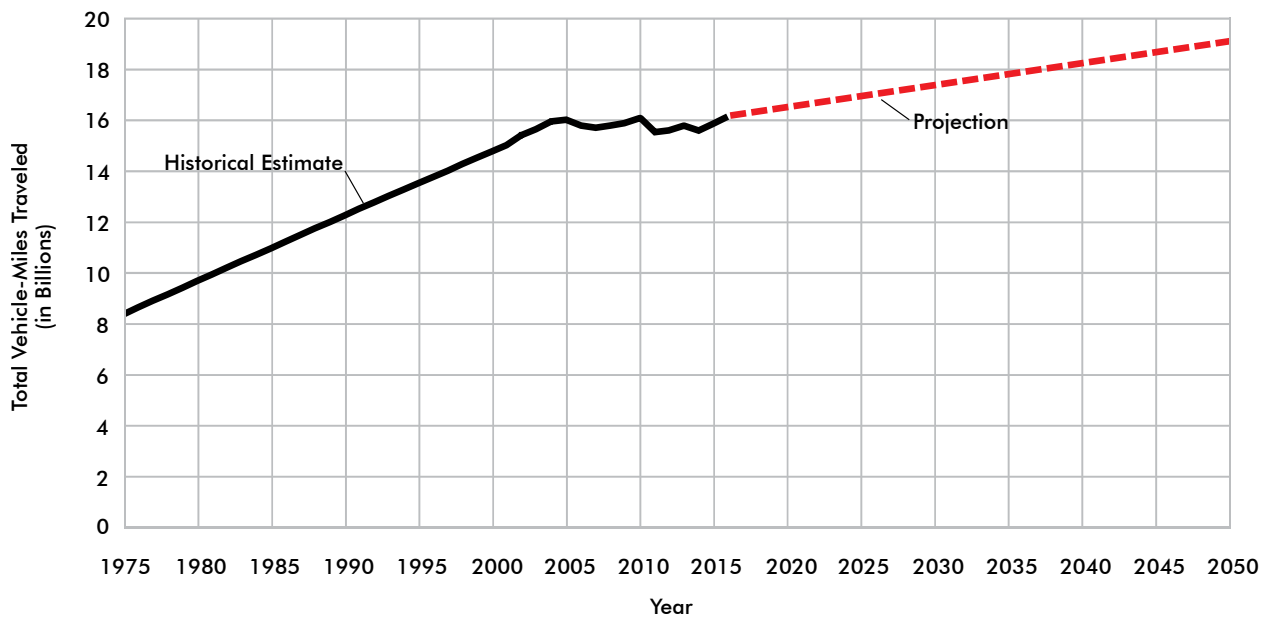
The State's Strategic Highway Safety Plan (SHSP) provides a framework for all State planning and programming activities related to reducing fatalities and serious injuries on all public roads. The SHSP identifies strategies and countermeasures to address the State's most critical safety issues. Specifically, the SHSP is developed every three to four years and identifies the types of crashes for which reductions are to be emphasized over a three- to four-year period. For each of the crash types identified, the SHSP identifies engineering, enforcement, emergency, and education measures and policies recommended to be implemented over the time period. The most recent SHSP was completed in 2017 for the years 2017-2020.<sup>8</sup> The 2017-2020 SHSP was collaboratively developed by the State, and a number of safety stakeholders, including the Commission. The types of crashes prioritized in the 2017-2020 SHSP for reduction include distracted driving, intersection crashes, speed-related crashes, roadway departure crashes, non-motorized crashes, alcohol/drug-related crashes, and crashes involving the driver or passengers not wearing a seatbelt. In addition, the 2017-2020 SHSP has identified two other emphasis areas to be addressed over the four-year period—driver performance (particularly young and elderly drivers) and safety culture, data, and technology. The executive summary for the 2017-2020 SHSP is included as Attachment C to this document.

### **Safety-Related Recommendations of VISION 2050**

VISION 2050 recognizes the negative effect vehicular crashes—particularly those crashes that result in fatalities and serious injuries—have on the Region, and recommends (through Recommendation 6.5) that Federal, State, and local governments, and the Commission, work to minimize and reduce crashes. Details on Recommendation 6.5 are contained in Attachment D of this document. The effects of implementing VISION 2050 recommendations related to transit, bicycle/pedestrian, transportation system management (TSM), travel demand management (TDM), and the arterial street and highway system on traffic crashes were estimated as part of the VISION 2050 effort. While, as part of the development of VISION 2050, VMT was forecast to increase 23 percent by the year 2050, total vehicular crashes were estimated to increase by only 16 to 22 percent with full implementation of VISION 2050, including implementation of the recommended improvement and expansion of public transit and bicycle/pedestrian facilities, and the recommended TDM measures. These estimates also rely on implementing the recommended reconstruction of the freeway system with additional traffic lanes, which would reduce

<sup>8</sup> The 2017-2020 SHSP can be found at [wisconsindot.gov/Pages/safety/education/frms-pubs](http://wisconsindot.gov/Pages/safety/education/frms-pubs).

**Figure 9**  
**Total Annual Vehicle-Miles Traveled in Southeastern Wisconsin: 1975-2050**



Source: SEWRPC

traffic congestion and related traffic crashes. The estimated increase in total vehicular crashes did not take into account the long-term trend in crash reductions that have occurred over the last few decades. Such reductions would be difficult to quantify without a rigorous analysis of potential crash reductions related to implementation of project-level and system-wide safety improvements. The Regional Safety Improvement Plan, to be developed by the Commission (as recommended in VISION 2050), could assist in determining the effect safety measures would have on the potential reduction of vehicular crashes, including crashes involving fatalities, serious injuries, and pedestrians/bicyclists.

### Alternative Methodologies for Setting Targets

VISION 2050 contained a safety-related objective to provide safe and secure travel environments that minimize loss of life, injury, and property damage, and, as previously indicated, made specific recommendations for achieving that objective. Thus, when developing alternative methods for setting targets for the Region, and the metropolitan planning area, for the five national safety performance measures, Commission staff attempted to develop alternatives that would meet the aspirational nature of, and quantify, the safety objective of VISION 2050, while recognizing and considering the effect of past efforts to reduce the number and rate of crashes. Setting the target in such a way would recognize the continued efforts to reduce fatalities and serious injuries in the Region, including implementation of the recommendations of the 2017-2020 SHSP and VISION 2050. Alternative methods based on the Region's share of the State's targets were also developed and considered.

Specifically, under each alternative method, the alternative years 2046-2050 targets for the number-related criteria—fatalities, serious injuries, and non-motorized fatalities and serious injuries—were developed based on the review of historical trends in the number of fatalities and serious injuries and the recommendations of the 2017-2020 SHSP and VISION 2050. The alternative targets for the rate-related performance measures were estimated based on the alternative targets for the number of fatalities and number of serious injuries measures and the forecast of total VMT based on VISION 2050 (as shown on Figure 9). The methodology for estimating historical and forecast VMT is documented in Attachment B of this document. The alternative targets were developed based on the baseline data, and the evaluation of the historical trends, for the Region. The following sections describe the alternative safety targets developed, and their evaluation.

**Table 3**  
**Alternative Years 2046-2050 Regional Targets for the National Safety Performance Measures**

Performance Measure	Alternative	Potential Target	Percent Change from 2012-2016 Base Year	Average Annual Percent Change
Number of Fatalities	Baseline	152.2	--	--
	1 – State	107.8	-29.2	-1.0
	2 – Long Term	91.9	-39.6	-1.5
	3 – Short Term	138.4	-8.4	-0.3
Rate of Fatalities	Baseline	0.962	--	--
	1 – State	0.572	-40.5	-1.5
	2 – Long Term	0.488	-49.3	-2.0
	3 – Short Term	0.740	-23.1	-0.8
Number of Serious Injuries	Baseline	798.2	--	--
	1 – State	334.0	-58.2	-2.5
	2 – Long Term	144.1	-82.0	-4.9
	3 – Short Term	460.9	-42.3	-1.6
Rate of Serious Injuries	Baseline	5.053	--	--
	1 – State	1.774	-64.9	-3.0
	2 – Long Term	0.766	-84.8	-5.4
	3 – Short Term	2.447	-51.6	-2.1
Number of Non-Motorized Fatalities and Serious Injuries	Baseline	167.2	--	--
	1 – State	70.0	-58.2	-2.5
	2 – Long Term	45.7	-72.7	-3.7
	3 – Short Term	101.1	-39.5	-1.5

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

**Alternative Method 1 (Based on State Reductions)**

One alternative method considered was basing the years 2046-2050 targets for the five safety performance measures on a similar reduction to those used by the State in developing their targets from the 2012-2016 period to the 2014-2018 period—about 1.0 percent annually for the number of fatalities and 2.5 percent annually for the number of serious injuries and the number of non-motorized fatalities and serious injuries.<sup>9</sup> Table 3 shows what the Region years 2046-2050 targets would be for the five performance measures under this target-setting method.

**Alternative Method 2 (Based on Long-Term Trends)**

Another alternative method considered was basing the safety targets on the long-term trends. This alternative assumes that the long-term trend of reduced fatalities and serious injuries will continue based on the continued efforts to reduce crashes in the Region (such as the safety measures recommended in the SHSP and VISION 2050, the safety-related projects programmed in the TIP, and the continued advancement in vehicle safety technology, including driver-assistance technology and automated vehicles). With respect to the number of fatalities, it is assumed under this alternative that the five-year rolling average for the number of fatalities would decrease by about 39.6 percent (or decline by about 1.5 percent annually consistent with the long-term trend from 1975 through 2016) from the 2012-2016 five-year period to the 2046-2050 five-year period. This would result in a five-year rolling average for this five-year period of 91.9 fatalities and 0.488 fatalities per HMVMT for the Region, as shown in Table 3.

With respect to the number of serious injuries, it is assumed under this alternative that the five-year rolling average for the number of fatalities would decrease by about 82.0 percent (or decline by about 4.9 percent annually consistent with the long-term trend between 1994 and 2016) from the 2012-2016 five-year period to the 2046-2050 five-year period. This would result in a five-year rolling average for this five-year period of 144.1 serious injuries and 0.766 serious injuries per HMVMT for the Region, as shown in Table 3.

<sup>9</sup> To be consistent with the rate-related targets developed under the other alternative methods, the rate-related targets under Alternative Method 1 were estimated based on the alternative targets for the number of fatalities and number of serious injuries measures and the forecast of total VMT based on VISION 2050.

With respect to the number of non-motorized fatalities and serious injuries, it is assumed under this alternative that the five-year rolling average for the number of fatalities would decrease by about 72.7 percent (or decline by about 3.7 percent annually consistent with the long-term trend between 1994 and 2016) from the 2012-2016 five-year period to the 2046-2050 five-year period. This would result in a five-year rolling average for this five-year period of 45.7 non-motorized fatalities and serious injuries for the Region, as shown in Table 3.

### ***Alternative Method 3 (Based on Short-Term Trends)***

Another alternative considered was basing the targets on the short-term (more recent) trends. With respect to the number of fatalities, it is assumed under this alternative that the five-year rolling average for the number of fatalities would decrease by about 8.4 percent (or decrease by about 0.3 percent annually consistent with the short-term trend from 1998 through 2016) from the 2012-2016 five-year period to the 2046-2050 five-year period. This would result in a five-year rolling average for this five-year period of 139.4 fatalities and 0.740 fatalities per HMVMT for the Region, as shown in Table 3.

With respect to the number of serious injuries, it is assumed under this alternative that the five-year rolling average for the number of fatalities would decrease by about 42.3 percent (or decline by about 1.6 percent annually consistent with the short-term trend between 2011 and 2016) from the 2012-2016 five-year period to the 2046-2050 five-year period. This would result in a five-year rolling average for this five-year period of 460.9 serious injuries and 2.447 serious injuries per HMVMT for the Region, as shown in Table 3.

With respect to the number of non-motorized fatalities and serious injuries, it is assumed under this alternative the five-year rolling average for the number of fatalities would decrease by about 39.5 percent (or decline by about 1.5 percent annually consistent with the short-term trend between 2004 and 2016) from the 2012-2016 five-year period to the 2046-2050 five-year period. This would result in a five-year rolling average for this five-year period of 101.1 non-motorized fatalities and serious injuries for the Region, as shown in Table 3.

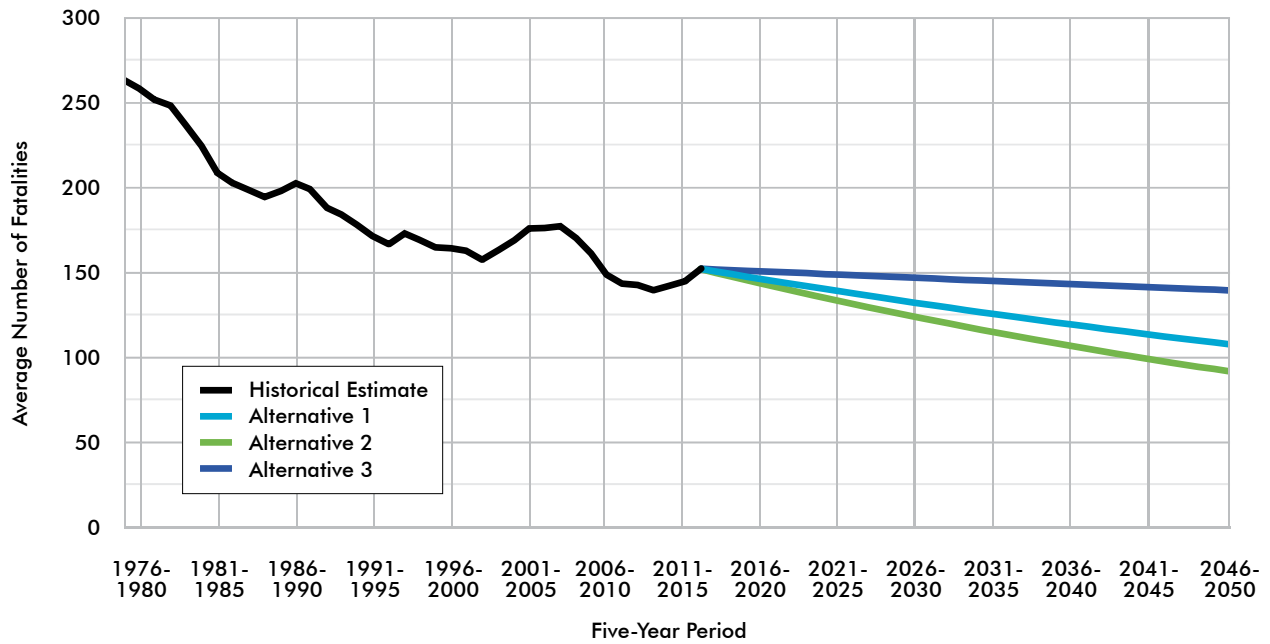
### ***Comparison of the Alternatives for the Number-Based Targets***

Table 3 compares the alternative years 2046-2050 targets developed for each of the five performance measures. For reference, Table 3 also includes the years 2012-2016 baseline data for the five safety performance measures. Figures 10 through 14 compare the declines over the 34-year timeframe between 2017 and 2050 resulting from different alternative methods for the five safety performance measures. In general, the assumed percent decline in the number of fatalities and serious injuries for all three performance measures under Alternative Method 1 (based on the State's targets) is less than the percent decline assumed based on the long-term trends (Alternative Method 2). However, the percent decline under Alternative Method 1 is higher than the decline assumed for the targets based on the short-term trend (Alternative Method 3).

### ***Number and Rate of Fatalities***

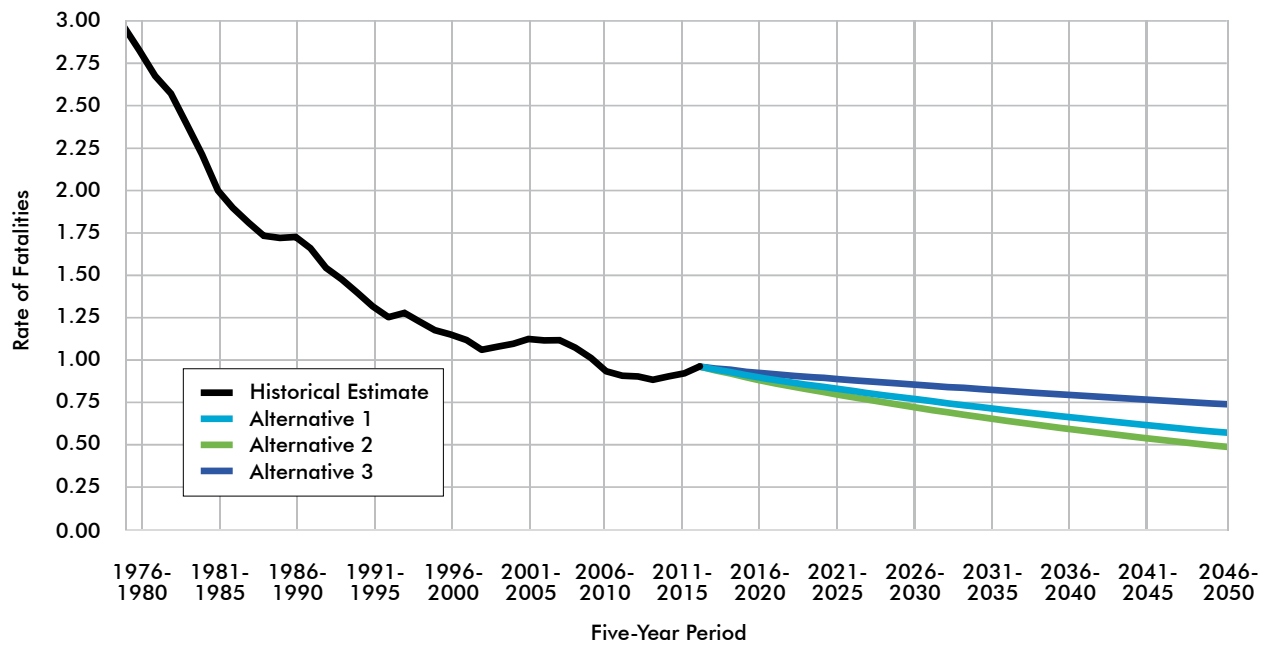
While the rolling five-year average in the number of fatalities has continually increased since the 2009-2013 period, there has been a cycle of periods of time with continued increases in fatalities, followed by continued decreases in fatalities, throughout the last 20 years. As such, efforts in reducing crashes may only have a minimal effect on the number of fatalities that occur in the short-term. However, if recent trends hold true, it would be expected that further efforts to implement safety improvement measures (such as those recommended in the 2017-2020 SHSP and VISION 2050) would eventually begin to reduce the number of fatalities in the long term. That is, while it may be more realistic to choose a years 2046-2050 target for the number of fatalities performance measure based on the short-term trend that is above or—in the case of Alternative 3—at about the baseline year levels, it may be desirable to set the target for the number of fatalities to reflect a higher percentage of decline to be consistent with the objectives of VISION 2050 to minimize the loss of life. Both Alternative 1 (based on the State's targets) and Alternative 2 (based on the long-term trend) assume such a reduction. Commission staff preliminarily recommends that the years 2046-2050 target for the number of fatalities performance measure be 91.9 fatalities and 0.488 fatalities per HMVMT based on the long-term trend (Alternative 2), rather than based the State's targets (Alternative 1), as it represents a more aggressive reduction, but is still consistent with the annual decline that has occurred between 2003 and 2016.

**Figure 10**  
**Comparison of the Results of the Alternative Methods for Establishing**  
**Targets for the Number of Fatalities Performance Measure: 2017-2050**



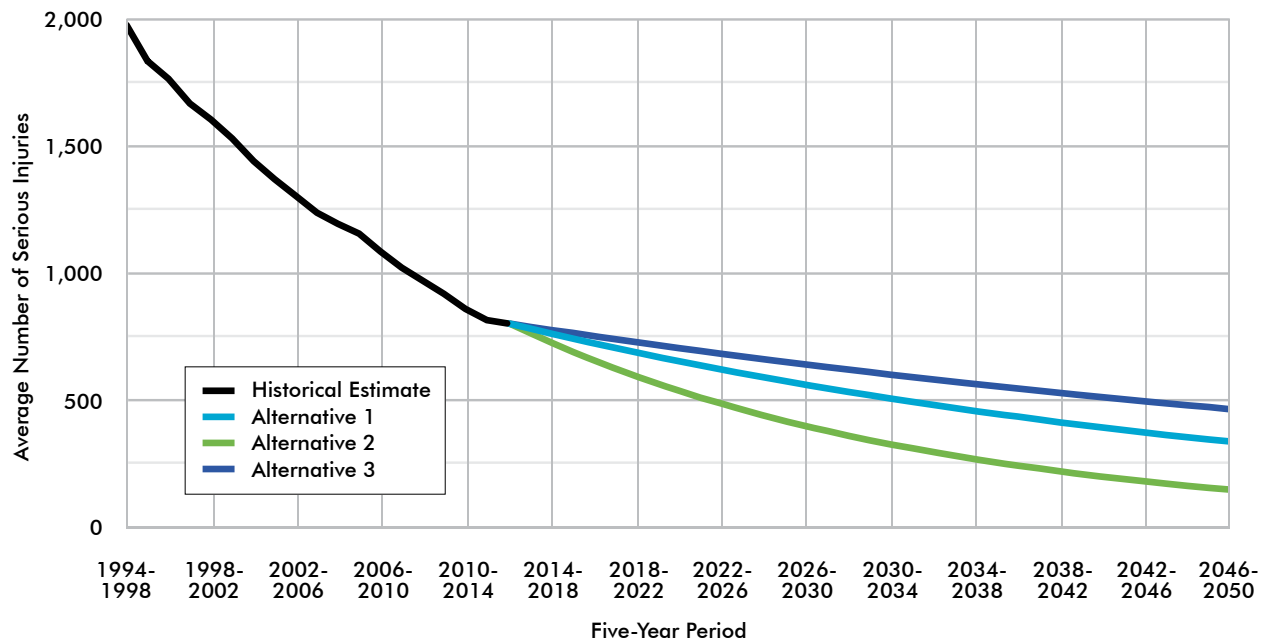
Source: Fatality Analysis Reporting System (FARS) and SEWRPC

**Figure 11**  
**Comparison of the Results of the Alternative Methods for Establishing**  
**Targets for the Rate of Fatalities Performance Measure: 2017-2050**



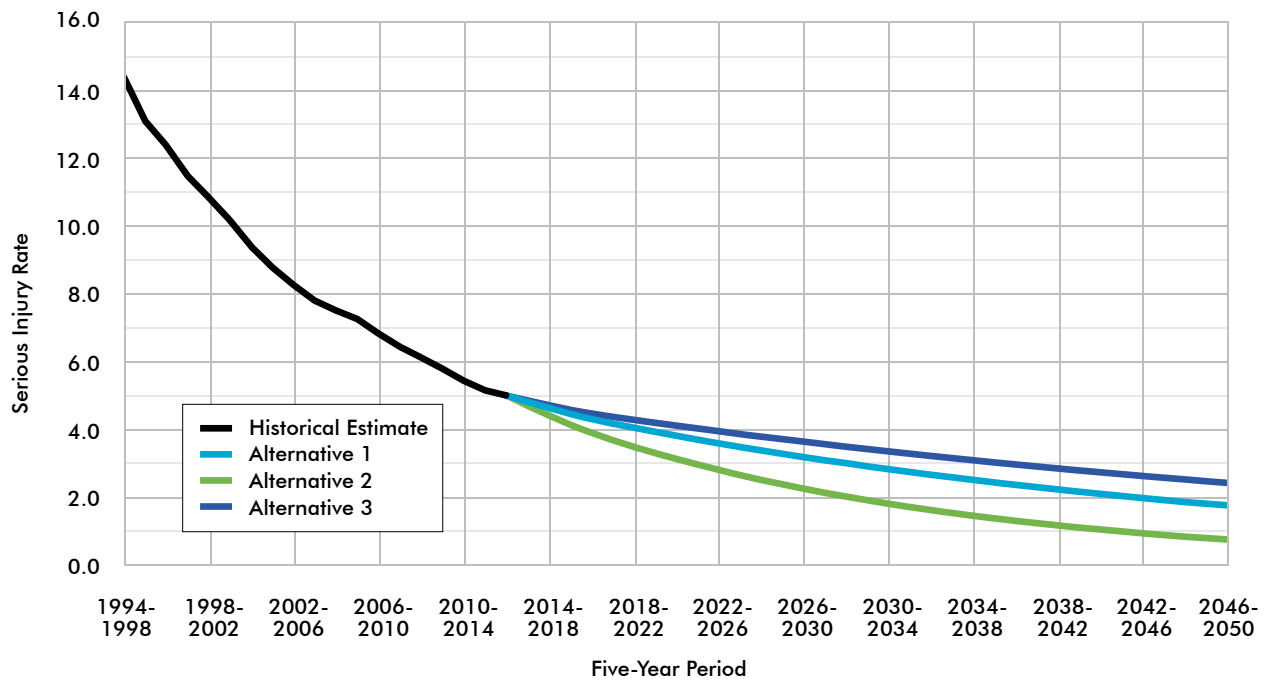
Source: Fatality Analysis Reporting System (FARS) and SEWRPC

**Figure 12**  
**Comparison of the Results of the Alternative Methods for Establishing**  
**argets for the Number of Serious Injuries Performance Measure: 2017-2050**



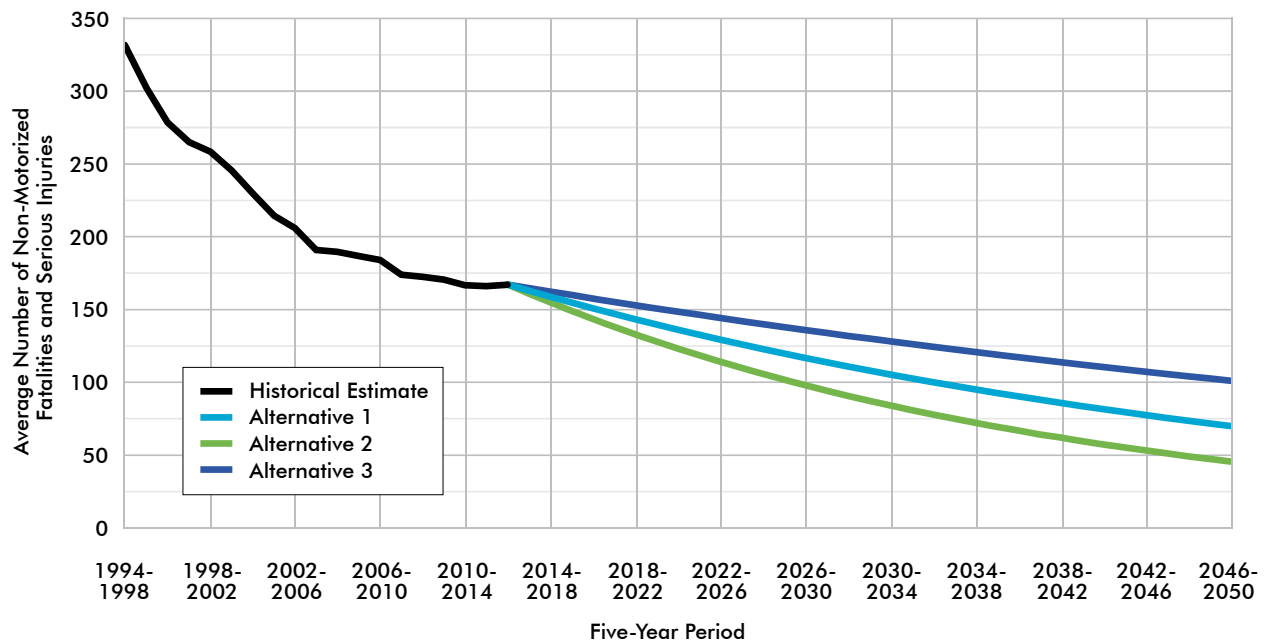
Source: Wisconsin Traffic Operations and Safety (TOPS) Laboratory and SEWRPC

**Figure 13**  
**Comparison of the Results of the Alternative Methods for Establishing**  
**Targets for the Rate of Serious Injuries Performance Measure: 2017-2050**



Source: Wisconsin Traffic Operations and Safety (TOPS) Laboratory and SEWRPC

**Figure 14**  
**Comparison of the Results of the Alternative Methods for Establishing Targets for the**  
**Number of Non-Motorized Fatalities and Serious Injuries Performance Measure: 2017-2050**



Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

**Number and Rate of Serious Injuries**

With the exception of the decline between the latest two periods (2011-2015 and 2012-2016), the rolling five-year average of the number of serious injuries has consistently declined over the last 20 years at a rate consistent with Alternative 2 (based on the long-term trend). The decline between the most recent periods could be the beginning of a new trend (consistent with Alternative 3), however it could be an anomaly. While the percent decline under Alternative 1 (based on the State’s targets) would be a compromise between the decline assumed under Alternatives 2 and 3, Commission staff preliminarily recommends that the years 2016-2050 targets for the number of serious injuries performance measure be 144.1 serious injuries and 0.766 serious injuries per HVMVT based on the long-term trend of consistent decline (Alternative 2).

**Number of Non-Motorized Fatalities and Serious Injuries**

While Alternative 3 may be representative of the short-term trend, this alternative may not be considered aspirational. Both Alternative 1 (based on the State’s target) and Alternative 2 (based on the long-term trend) would be fairly aspirational given that the declines estimated under these alternatives have not been experienced since 2003. Because of the high proportion of the number of non-motorized fatalities and serious injuries being represented by serious injuries (80 to 90 percent), Commission staff preliminarily recommends that the 2046-2050 target for non-motorized fatalities and serious injuries be 45.7 based on Alternative 2, which has an average annual decline similar to the preliminary recommended target set for the number of serious injuries performance measure.

**Preliminary Recommended Targets for Safety-Related Performance Measures**

Preliminary recommended years 2046-2050 regional targets for each of the five national safety performance measures were proposed for incorporation into VISION 2050, as an amendment. The preliminary recommended targets were based on an evaluation of short-term and long-term trends in the number of fatalities and serious injuries and consideration of the safety improvement recommendations of the 2017-2020 SHSP and VISION 2050. The recommended targets for the rate-related performance measures were calculated using the annual average number of fatalities or serious injuries needed to achieve their respective targets and the projected VMT. The preliminary recommended safety targets, along with the process to establish the targets, were reviewed and endorsed by the Commission’s



**Table 4**  
**Final Recommended Regional Years 2046-2050 Targets**  
**for the National Safety-Related Performance Measures**

<b>Performance Measure</b>	<b>2012-2016 Baseline Data</b>	<b>Preliminary Recommended 2046-2050 Target</b>	<b>Percent Change from 2012-2016 Base Year</b>
Number of Fatalities	152.2	91.9	-39.6
Rate of Fatalities	0.962	0.488	-49.3
Number of Serious Injuries	798.2	144.1	-82.0
Rate of Serious Injuries	5.053	0.766	-84.8
Number of Non-Motorized Fatalities and Serious Injuries	167.2	45.7	-72.7

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

**Table 5**  
**Resulting 2014-2018 Targets for the National Safety-Related Performance**  
**Measures for the Metropolitan Planning Area and Seven-County Region**  
**Based on the Final Recommended Years 2046-2050 Regional Targets**

<b>Performance Measure</b>	<b>Metropolitan Planning Area</b>		<b>Seven-County Region</b>	
	<b>2012-2016 Baseline Data</b>	<b>Resulting 2014-2018 Target</b>	<b>2012-2016 Baseline Data</b>	<b>Resulting 2014-2018 Target</b>
Number of Fatalities	137.2	133.2	152.2	147.7
Rate of Fatalities	0.923	0.884	0.962	0.922
Number of Serious Injuries	743.8	672.5	798.2	721.7
Rate of Serious Injuries	5.005	4.464	5.053	4.504
Number of Non-Motorized Fatalities and Serious Injuries	161.0	149.2	167.2	154.9

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

Advisory Committees on Regional Land Use Planning and Regional Transportation System Planning at a joint meeting held on January 18, 2018. The public was provided an opportunity to review and provide comment on the safety targets and the process to develop the targets, from March 14, 2018, through April 13, 2018. No comments were received during the public comment period. A record of the public comment is provided in Attachment E to this document. The targets were approved for inclusion into VISION 2050 as an amendment by the Advisory Committees at a joint meeting held on April 26, 2018, and by the Commission on June 20, 2018.

**Final Recommended Targets for Safety-Related Performance Measures**

The final recommended years 2046-2050 regional targets for the five national safety performance measures are shown on Table 4. Table 5 shows the resulting short-term years 2014-2018 safety targets for both the Region’s metropolitan planning area and the seven-county Region. The final targets represent the aspirational nature of, and quantify, the safety objective and safety recommendations of VISION 2050, but recognize the effect of past efforts to reduce the number and rate of fatalities and serious injury. While there may continue to be fluctuation in the number of fatalities and, to a lesser extent, serious injuries (which may cause targets to not be met), it is expected that with the long-term implementation of the recommendations of VISION 2050 and the State’s SHSP—along with continued improvement in vehicular safety (including driver-assistance technology and automated vehicles)—the long-term decline in fatalities and serious injuries would continue. The five performance measures will be monitored annually and reported in the Commission’s Annual Report and on the Commission’s website. The long-range targets will be reviewed every four years as part of an interim update to the regional plan—currently VISION 2050—and every 10 years as part of a major review and update of the regional plan.

To assist local governments in the Region and the State in achieving the safety targets, it is also recommended that Commission staff initiate work, along with WisDOT and local governments, on a Regional Safety Implementation Plan (RSIP) that will identify a list of intersections and corridors along

the Region's arterial streets and highways with the most severe crash rates in each county. These intersections and corridors would be prioritized based on the nature of the crashes and frequency of the crashes resulting in fatalities and serious injuries. This prioritization could be used by the State and local governments to identify intersections and corridors for further, more detailed safety studies and for identifying and prioritizing projects for Federal Highway Safety Improvement Program (HSIP) funds. The study would also identify a list of corrective measures to reduce the number and severity of crashes. The results of the study could assist in determining the effect recommended measures would have on the potential reduction of vehicular crashes, including crashes involving fatalities, serious injuries, and pedestrians/bicyclists.

The following sections contain an evaluation of historical crashes that have occurred within the seven-county Region, including the portions of Jefferson and Dodge Counties in the metropolitan planning area. The data below provide an update to some of the crash data provided in the inventory sections of the VISION 2050 plan report. However, unlike the crash data provided in VISION 2050, the data provided in the following sections include crashes involving deer, as such crashes were included in the data used to develop the targets for the national safety performance measures.

### **TOTAL CRASHES**

Figure A.1 shows that there has been a general decline in the number of vehicle crashes from 1994 through 2016, representing a nearly 8 percent decline in vehicular crashes since 1994. However, the number of crashes has steadily increased since 2012 by about 26 percent. Crashes involving an injury or a fatality decreased by about 25 percent over the period from 1994 to 2016. In addition, the percentage of the total crashes that resulted in an injury or fatality decreased from about 34 percent in 1994 to about 28 percent in 2016. However, the crashes involving an injury or a fatality increased by about 17 percent from a low in 2011 to 2016. The overall decrease in vehicular crashes since 1994 is significant given the increase over that same time period in population within Southeastern Wisconsin of 9 percent and in vehicle-miles traveled over that same time period of 20 percent.

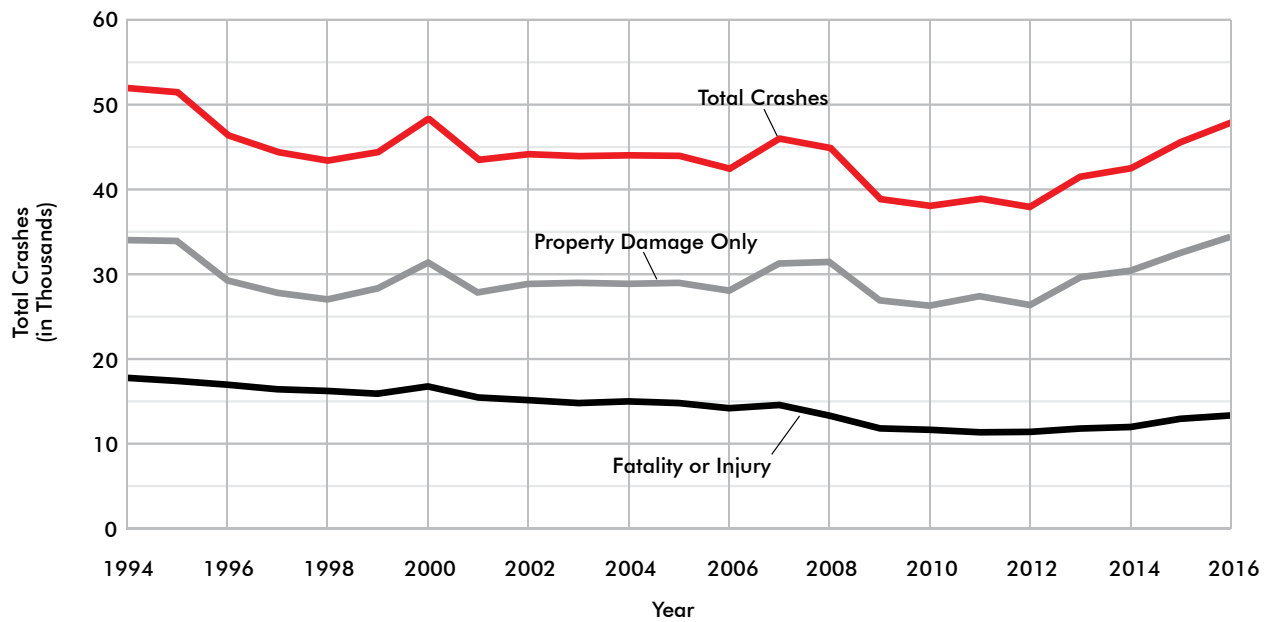
### **FATAL CRASHES**

Figure A.2 shows that the number of fatal crashes has fluctuated over the 23-year period from 1994 through 2016, including a peak of 171 fatal crashes in 2005 and a low of 116 fatal crashes in 2009. Crashes involving fatalities have increased since 2009 to a total of 152. Over the 23-year period, these crashes have accounted for about 0.3 to 0.4 percent of the total crashes in the Region.

The number of crashes resulting in fatalities within a given year may be attributed to the prevalence of certain crashes that can increase the risk of a fatality occurring, such as crashes involving motorcycles, alcohol/drugs, distracted driving, excessive speeding, and bicycle/pedestrian crashes. As shown on Figure A.3, the percentage of fatal crashes that involve these characteristics can vary from year to year. However, on average, fatal crashes that involved lack of seat belt or helmet use account for the highest percentage of total fatal crashes (45 percent), followed by alcohol-related and excessive speed-related fatal crashes (about 35 percent each), motorcycle-related fatal crashes (about 20 percent), bicycle/pedestrian-related fatal crashes (about 18 percent), and distracted driving-related fatal crashes (about 13 percent).

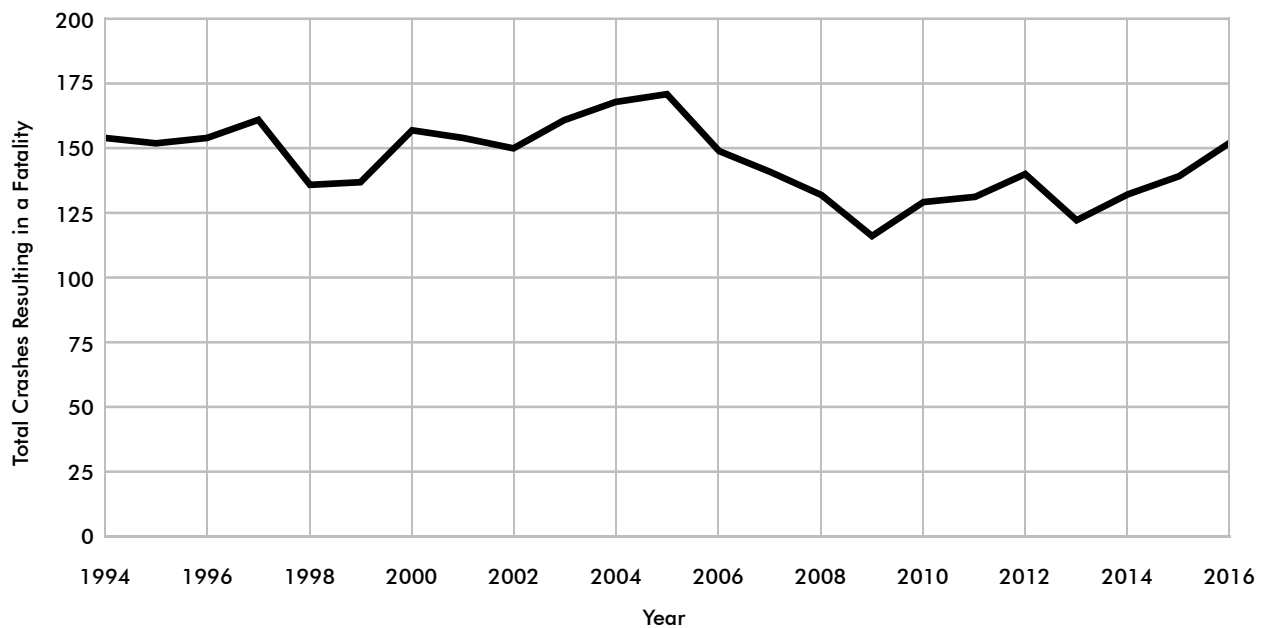
# **REVIEW OF VEHICLE CRASHES OCCURRING WITHIN SOUTHEASTERN WISCONSIN: 1994-2016 ATTACHMENT A**

**Figure A.1**  
**Total Number of Vehicular Crashes in Southeastern Wisconsin: 1994-2016**



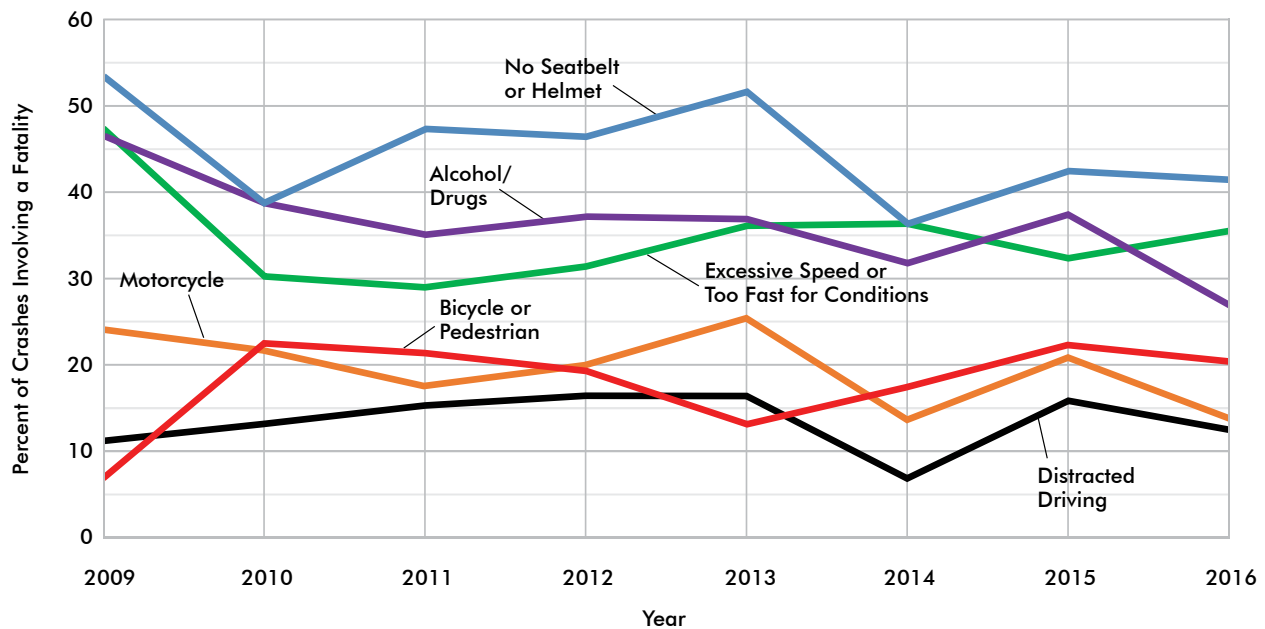
Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

**Figure A.2**  
**Total Number of Vehicular Crashes Involving a Fatality in Southeastern Wisconsin: 1994-2016**



Source: Fatality Analysis Reporting System (FARS) and SEWRPC

**Figure A.3**  
**Percentage of Fatal Vehicular Crashes Involving Selected**  
**Crash Characteristics in Southeastern Wisconsin**



Note: A crash may be attributable to multiple categories.

Source: Fatality Analysis Reporting System (FARS) and SEWRPC

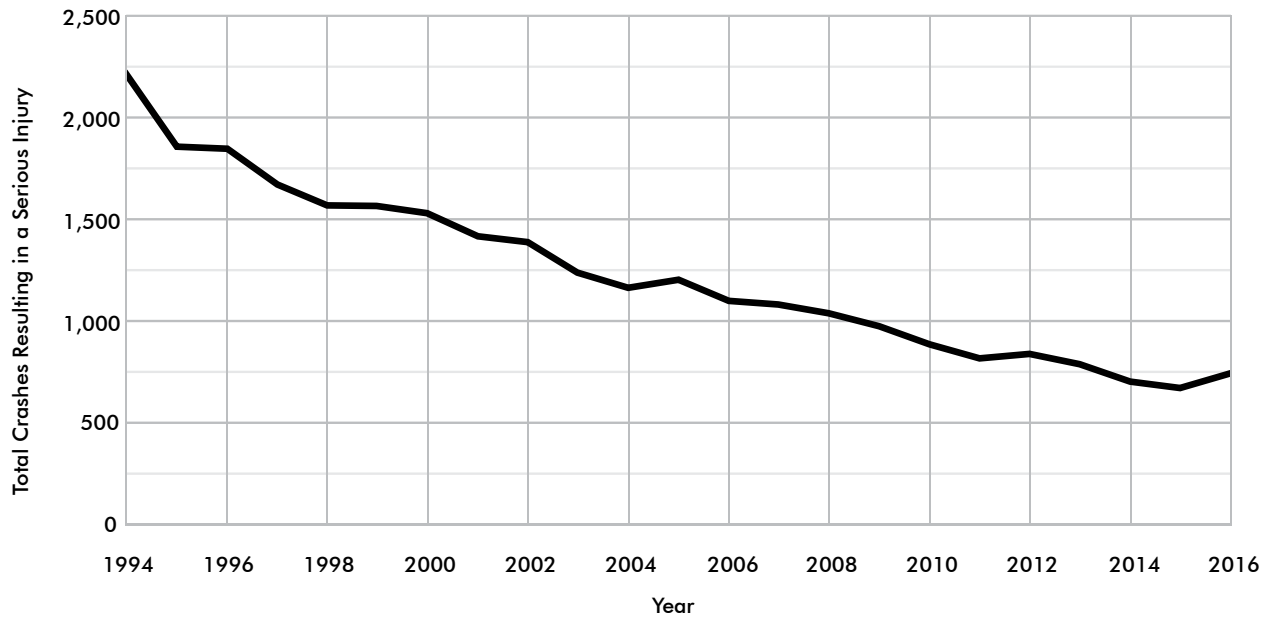
### SERIOUS INJURY CRASHES

Figure A.4 shows that the number non-fatal crashes resulting in a serious injury has declined significantly, by about 66 percent, from 1994 to 2016. Such crashes accounted for about 4.3 percent of total crashes in 1994, but accounted for about 1.6 percent of total crashes in 2016—a significant decline.

### BICYCLE AND PEDESTRIAN CRASHES

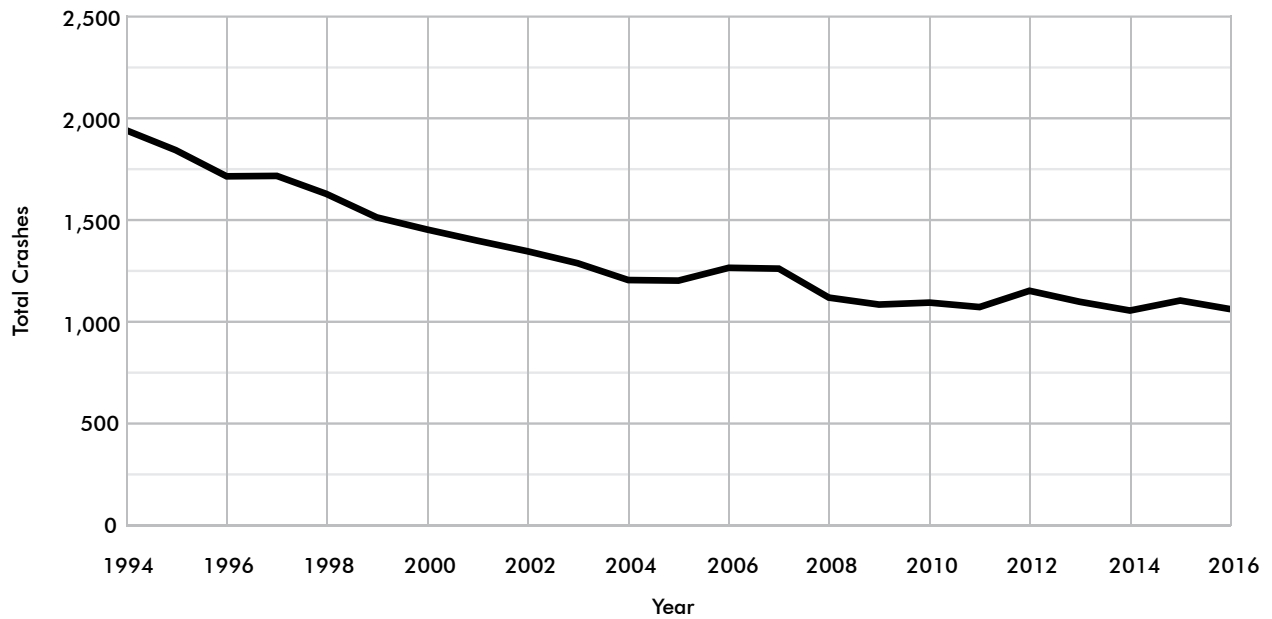
Over the past 23 years (1994 through 2016), the number of bicycle and pedestrian crashes has significantly decreased by 45 percent, as shown in Figure A.5. Such crashes accounted for about 3.7 percent of total crashes in 1994 and about 2.2 percent of total crashes in 2016. The number of bicycle and pedestrian crashes resulting in a fatality or serious injury has also decreased substantially over the past 23 years, as shown in Figure A.6. However, while vehicular crashes involving either a bicycle or a pedestrian represented about 2 to 4 percent of the total overall crashes, as bicyclists and pedestrians are more vulnerable than occupants of an automobile or truck, they account for about 18 percent of the total number of fatalities and serious injuries experienced in the Region.

**Figure A.4**  
**Total Number of Vehicular Crashes Involving a Serious Injury in Southeastern Wisconsin: 1994-2016**



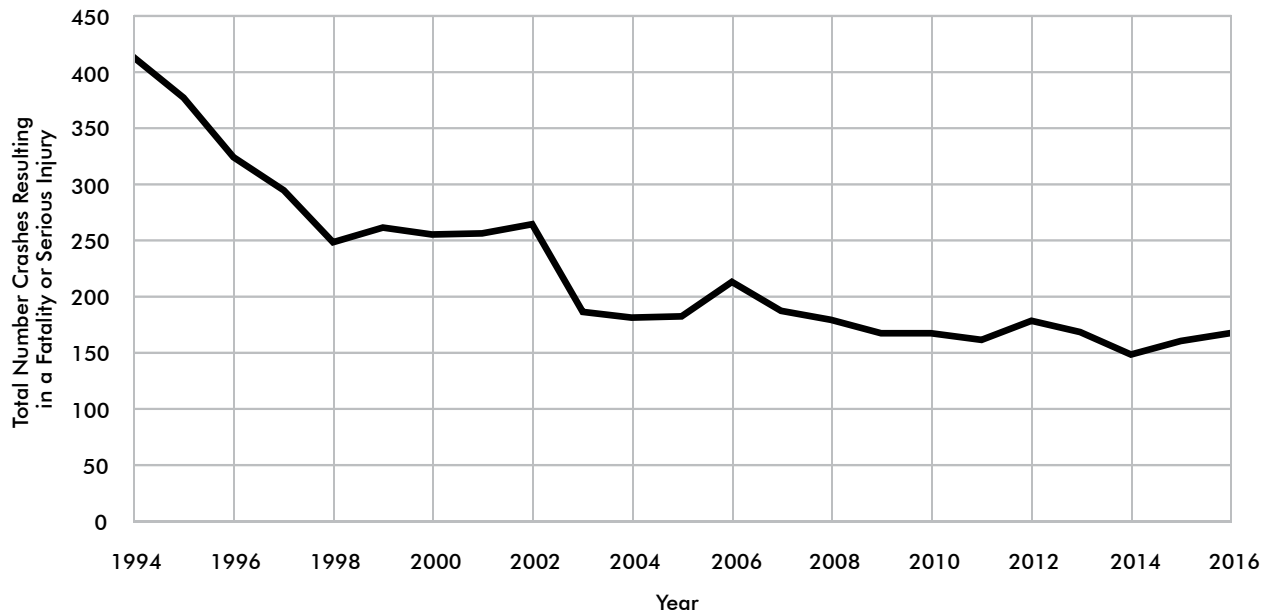
Source: Traffic Operations and Safety (TOPS) Laboratory and SEWRPC

**Figure A.5**  
**Total Number of Bicycle or Pedestrian Crashes in Southeastern Wisconsin: 1994-2016**



Source: Traffic Operations and Safety (TOPS) Laboratory and SEWRPC

**Figure A.6**  
**Total Number of Bicycle or Pedestrian Crashes Involving a Fatality or Serious Injury in Southeastern Wisconsin: 1994-2016**



Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC





# SEWRPC METHODOLOGY TO ESTIMATE VEHICLE MILES OF TRAVEL ATTACHMENT B

## SUMMARY

This document is intended to provide discussion relative to the procedures utilized by the Southeastern Wisconsin Regional Planning Commission in establishing historical and future year forecast vehicle miles of travel (VMT) estimates within the Region for the purposes of monitoring the performance of the transportation system, as documented in the Commission's annual report and various other planning documents, and for conformity demonstration purposes. The methodology has the following three basic steps:

1. Establish average weekday traffic volumes (AWDT) either through historical traffic counts or, for forecasting future year VMT, through use of the Commission's travel demand model
2. Calculate the estimated arterial VMT by multiplying the historical or forecast AWDT volume by link length and summing up link level VMT within the area of interest
3. Apply adjustment factor to the arterial VMT estimates to account for VMT generated on nonarterial facilities

The subsequent sections of this document provide further detail about each of the above three steps.

## ESTABLISHMENT OF ARTERIAL AWDT VOLUMES

The establishment of arterial AWDT volumes is based on historical traffic count data collected and provided to the Commission by the Wisconsin Department of Transportation (WisDOT) or, for estimating future year AWDT, through the use of the Commission's fifth generation travel demand model.

### Historical Arterial AWDT Counts

On an annual basis, WisDOT collects traffic volume data throughout the State. Generally, the traffic data is collected by placing traffic counters for two days at a particular location. Map B.1 shows the traffic monitoring locations throughout the Region. The frequency of the traffic count collection varies, with most locations being monitored once every three years, and other locations being monitored every six to ten years. In Southeastern Wisconsin, the traffic volume is continuously monitored along most of the freeway system, and some higher volume surface arterial roadways, as shown on Map B.1.

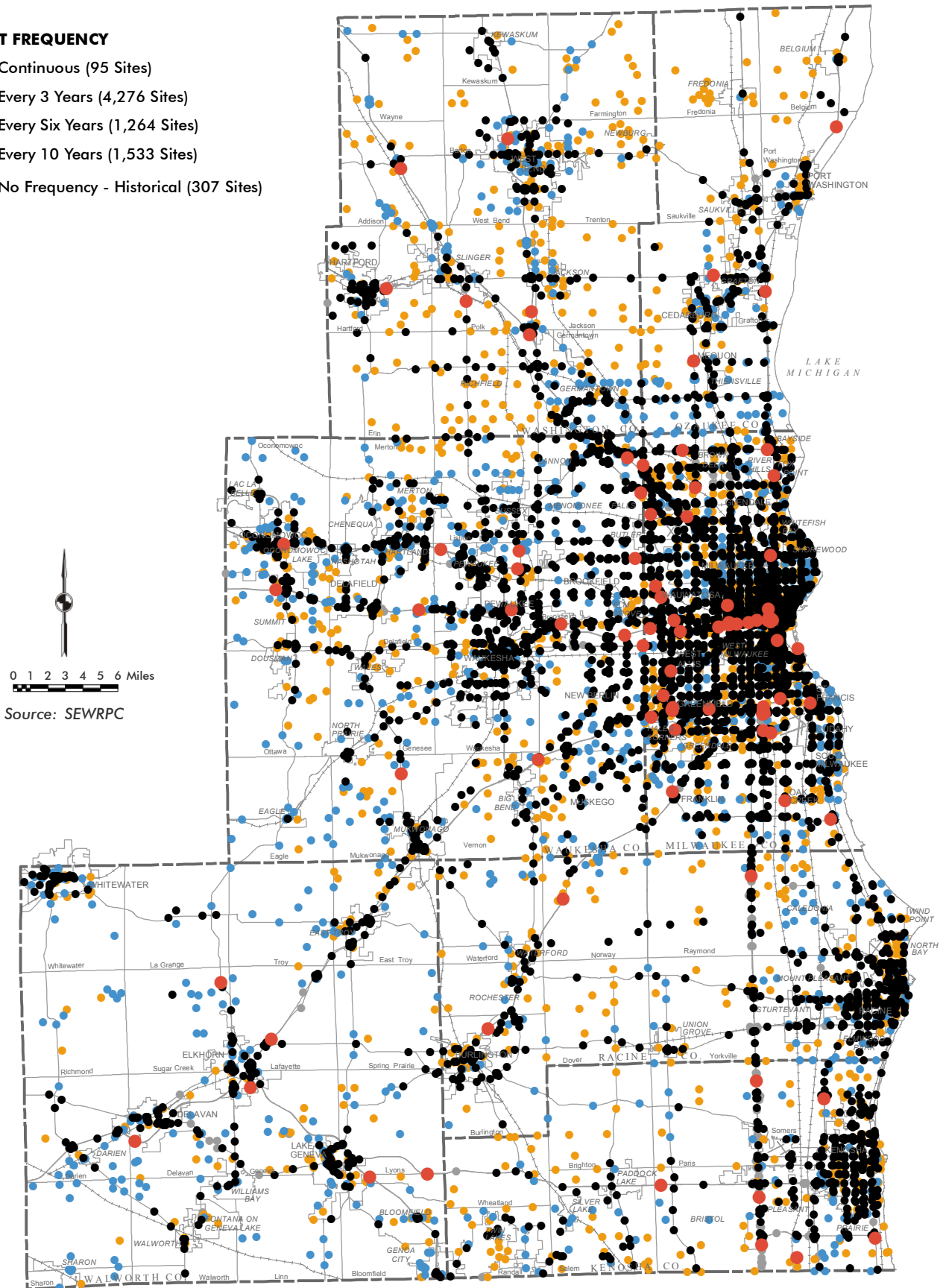
Because the traffic data collected for most of the monitoring locations are short-term (two-days) and are collected at various times throughout the spring, summer, and fall of the year, annual seasonal and daily adjustment factors are applied to estimate the AWDT for each location. The annual AWDT seasonal and daily adjustment

## Map B.1

### Frequency of Roadway Counts Collected by a Traffic Monitoring Device in Southeastern Wisconsin

#### COUNT FREQUENCY

- Continuous (95 Sites)
- Every 3 Years (4,276 Sites)
- Every Six Years (1,264 Sites)
- Every 10 Years (1,533 Sites)
- No Frequency - Historical (307 Sites)



0 1 2 3 4 5 6 Miles

Source: SEWRPC

factors are calculated based on the annual seasonal and daily average annual daily traffic (AADT) factors produced every year by the Wisconsin Department of Transportation.<sup>10</sup> Table B.1 provides an example of the seasonal and daily factors used to calculate AWDT volumes from the short-term traffic counts. The short-term count data are adjusted to estimate an average weekday by multiplying the daily and hourly volumes by the attendant seasonal (month) and daily adjustment factors for the year count and facility type. The AWDT traffic volumes by count site, and direction and hour of the day, where available, are then stored in a database used to develop traffic volume histories, forecasts, annual VMT estimates and other types of analyses.

### Estimated Actual Regional Arterial AWDT Volumes

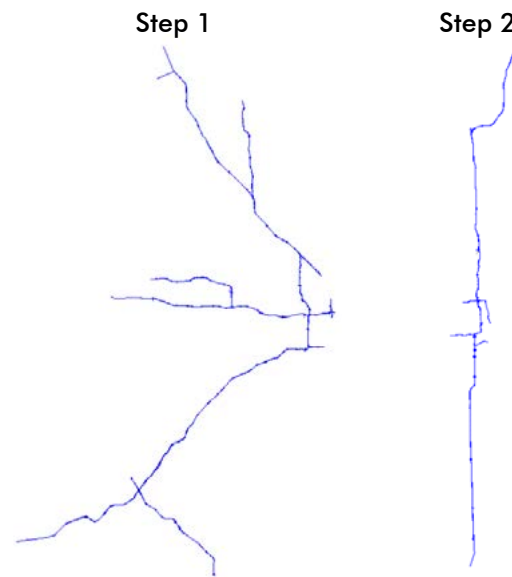
While the traffic count coverage within Southeastern Wisconsin and the Milwaukee urbanized area (MUA) is very good, as shown on Map B.1, the data at each location are primarily short-term (two-day) counts, can be three or more years old (Map B.2), and may not be collected by direction. Additionally, the data are discrete and do not cover the entire regional arterial network.

To address the discrete nature of the count program, and to mitigate the impact of the current count program frequency and length in time of counts, the Southeastern Wisconsin Regional Planning Commission has developed a methodology to estimate numerically consistent volumes for every arterial facility within Southeastern Wisconsin. This methodology relies on an origin-destination matrix estimation (ODME) procedure to establish mathematically consistent baseline traffic volumes on all of the arterial streets and highways within the Region. The ODME process is a mechanical procedure included as an add-on package for the travel demand modeling software employed by the Commission. It is an iterative process whereby a seed trip matrix is first assigned and then adjusted based on a comparison of assigned volumes to target volumes—observed WisDOT continuous and short-term coverage count data. This process is then repeated, substituting the adjusted seed table for the original seed table, until the resulting volumes reasonably match the target volumes. The estimated actual volumes derived from the ODME procedure have been used to develop annual VMT estimates and establish baseline volumes to be used in determining the accuracy of travel demand model assignments.

The ODME process developed by the Commission has three distinct ODME processing steps. The first two ODME steps estimate volumes on every freeway segment and freeway ramp based on automatic traffic recorders (ATRs) and ramp counts. As shown in Figure B.1, two sub networks of the freeway system are created such that there is only one possible path between any access or egress point of the network. The sub networks are split at continuous count sites to ensure that the volumes resulting from the ODME process will be the same at their junctures.

The last ODME step incorporates the balanced freeway system counts along with the short-term count data to estimate AWDT volumes on every segment of the arterial street and highway system.

**Figure B.1**  
Freeway Subnetworks



Source: SEWRPC

<sup>10</sup> The process used to convert the WisDOT seasonal and daily adjustment factors from AADT to AWDT is completed by first taking the inverse of 12 times the AADT seasonal (monthly) adjustment factors to estimate the proportion of the total annual volume that occurs in each month. Next, each AADT daily adjustment factor is multiplied by seven and divided into the monthly proportion to establish the proportion of total annual volume a particular day of the week represents in each month. The daily proportions are then used to calculate the seasonal and daily factors attendant to an average weekday. The AWDT seasonal (monthly) factors are established by dividing the average of every Tuesday, Wednesday, and Thursday by the average of the proportions of the Tuesday, Wednesday, and Thursday for a given month. Daily factors are calculated by dividing the average of the Tuesday, Wednesday, and Thursday proportions in a given month by the proportion attendant to the day that the daily factor is being calculated.

**Table B.1**  
**Example of 2016 AWDT Seasonal and Daily Adjustment Factors by Facility Type**

Facility Type		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Urban Interstate	Seasonal	1.101	1.084	1.074	1.002	0.992	0.943	0.952	0.941	0.972	0.961	0.998	1.013
	Sun	1.629	1.478	1.389	1.472	1.362	1.345	1.342	1.276	1.329	1.336	1.416	1.960
	Mon	1.068	1.028	0.997	1.051	1.096	1.053	1.129	1.054	1.089	1.041	1.025	1.127
	Tue	1.019	1.050	0.996	1.014	1.027	1.017	1.014	1.018	1.011	1.012	0.985	1.014
	Wed	1.004	1.009	0.999	1.004	1.008	1.006	1.004	1.005	1.021	1.027	0.983	1.019
	Thur	0.978	0.946	1.005	0.982	0.967	0.978	0.983	0.978	0.970	0.963	1.033	0.969
	Fri	1.007	0.896	0.915	0.932	0.925	0.935	0.925	0.930	0.905	0.904	0.969	1.010
	Sat	1.259	1.175	1.207	1.237	1.218	1.228	1.207	1.233	1.169	1.189	1.245	1.424
Urban Arterial & Collectors	Seasonal	1.124	1.126	1.069	0.995	0.952	0.929	0.939	0.935	0.958	0.966	1.027	1.033
	Sun	1.707	1.545	1.512	1.552	1.466	1.447	1.482	1.457	1.505	1.494	1.540	2.097
	Mon	1.075	1.011	1.001	1.042	1.106	1.043	1.145	1.037	1.120	1.039	1.011	1.122
	Tue	1.024	1.058	1.000	1.016	1.024	1.015	1.013	1.018	1.013	1.010	0.974	1.015
	Wed	0.995	0.998	1.000	1.001	1.007	1.003	1.000	0.999	1.015	1.019	0.974	1.004
	Thur	0.981	0.949	1.001	0.984	0.971	0.983	0.988	0.984	0.973	0.973	1.055	0.981
	Fri	1.020	0.897	0.922	0.938	0.933	0.942	0.942	0.951	0.922	0.922	0.958	1.014
	Sat	1.304	1.208	1.254	1.284	1.282	1.274	1.310	1.316	1.263	1.266	1.302	1.517
Rural Interstate	Seasonal	1.184	1.183	1.102	1.052	0.965	0.904	0.873	0.896	0.978	0.970	0.992	1.013
	Sun	1.191	1.085	1.010	1.067	1.038	0.975	0.980	0.943	0.990	0.972	1.100	1.610
	Mon	1.034	0.972	0.975	1.037	1.020	1.032	1.054	1.013	0.979	1.020	1.046	1.050
	Tue	1.034	1.086	1.025	1.038	1.040	1.046	1.021	1.050	1.028	1.043	1.029	1.019
	Wed	1.006	1.019	1.009	1.010	1.028	1.020	1.020	1.015	1.033	1.035	0.979	1.010
	Thur	0.963	0.911	0.968	0.955	0.939	0.940	0.961	0.941	0.944	0.930	0.993	0.972
	Fri	0.900	0.785	0.807	0.824	0.811	0.838	0.809	0.820	0.786	0.792	0.874	0.958
	Sat	1.070	0.991	1.040	1.059	1.032	1.024	0.992	1.030	0.974	1.028	1.120	1.330
Rural Arterial & Collectors	Seasonal	1.149	1.163	1.099	1.005	0.935	0.931	0.935	0.911	0.958	0.956	0.992	1.045
	Sun	1.404	1.252	1.183	1.256	1.143	1.070	1.104	1.080	1.139	1.132	1.242	1.805
	Mon	1.050	0.978	0.979	1.034	1.033	1.024	1.055	1.022	1.017	1.022	1.031	1.085
	Tue	1.036	1.083	0.999	1.021	1.034	1.062	1.010	1.036	1.016	1.020	1.012	1.018
	Wed	0.995	1.012	1.008	1.018	1.017	0.997	1.011	1.007	1.030	1.028	0.994	1.012
	Thur	0.971	0.919	0.994	0.962	0.952	0.948	0.979	0.960	0.957	0.955	0.995	0.972
	Fri	0.952	0.814	0.849	0.860	0.838	0.841	0.842	0.851	0.818	0.832	0.875	0.962
	Sat	1.118	1.025	1.074	1.100	1.053	1.021	1.034	1.073	1.019	1.051	1.142	1.319

Source: Wisconsin Department of Transportation and SEWRPC

In the last step the input traffic count data are weighted based on the confidence in the data, with the freeway estimates receiving a confidence weight of 999 and the triennial counts—within 5-years leading up to and including the year of the estimate—receiving confidence weights of 90, 75, 50, 25, or 5, with the count confidence decreasing based on the age of the count. The count confidence weight is used in the ODME process to determine how much effort should be spent on getting the assignment to match the count. The result of this process is a volume on every link that is considered to be the estimated actual volume for the year being estimated. The ODME adjusted AWDT traffic volumes by direction are then stored in a database which then can be used in developing traffic volume histories, forecasts, annual VMT estimates, and other types of analyses.

The seed matrix utilized is very important to the outcome of the ODME process. Since the ODME process can take any seed pattern of travel and iterate until it reaches a solution consistent with the target traffic volumes, it is important to pre-seed the process with an observed pattern of travel, when available. Within Southeastern Wisconsin, a travel inventory conducted by the Commission in 2011 and 2012 was used to develop the seed travel patterns for the year 2011. Because the survey is a sample of the total travel, some zonal travel interchanges are inherently missing from the data. To address this, zeros in the table are filled with a dummy 0.1 trips to allow for the possibility that a trip could have traveled between two areas of the Region. The ODME process is then allowed to determine whether an interchange should be more significant, less significant, or ultimately is removed from the potential travel pattern.

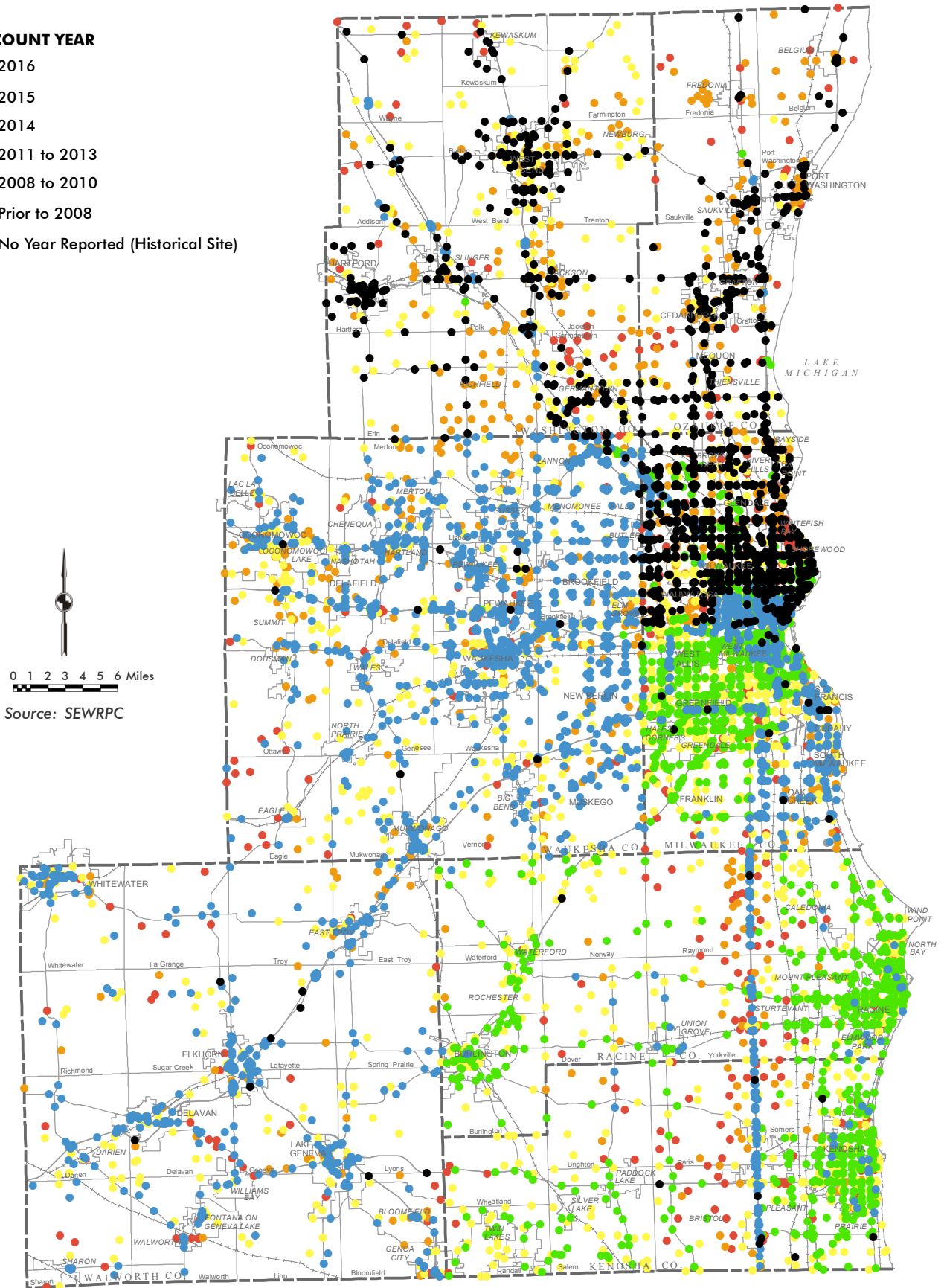
Additionally, as the ODME process is rerun for subsequent years, only 20 to 30 percent of the traffic count data is updated. Because there are many possible solutions that an ODME process will converge

## Map B.2

### Most Recent Year of Data Collection by Traffic Monitoring Device Along the NHS

#### LAST COUNT YEAR

- 2016
- 2015
- 2014
- 2011 to 2013
- 2008 to 2010
- Prior to 2008
- No Year Reported (Historical Site)



to, based solely on the seed trip table that is provided, in order to improve the consistency between annual network volume estimates, the ODME seed trip matrix used for a given year is the resulting adjusted seed from the prior year's ODME run. This also has the side benefit of improving the time it takes for the ODME process to converge on a solution. The only exception to this is when new travel inventory data is available, at which point a new initial seed is created.

As shown on Figure B.2 and in Table B.2, the ODME balancing procedure is able to accurately match observed ground counts with an  $R^2$  of 0.98 and an overall percent Root-Mean Square Error (RMSE) of 19 percent. Given that the count data can be up to 5 years old and that the newer count data is weighted higher than older count data, this result indicates that this process is adequate for this purpose.

### **Future Year Forecast AWDT Volumes**

To develop future year AWDT volumes, the Commission utilizes its travel demand models, which have been maintained by the Commission for more than 50 years. These models are network-based models that forecast travel demand and traffic volume based upon economic and demographic forecasts, planned land use allocation patterns, and the characteristics of the transportation system. The current travel demand models, the fifth-generation of the Commission's travel demand models, were calibrated with year 2011-2012 large-scale travel survey data and are consistent with current accepted modeling practice. The fifth-generation travel simulation models incorporate many of the potential model enhancements identified during a peer review of the Commission's fourth-generation travel simulation models. The resulting fifth-generation travel simulation models were reviewed by the Commission's Advisory Committees on Regional Land Use Planning and Regional Transportation Planning, which include representation from Federal, State, and local governments.

The fifth-generation travel demand model is a time-of-day model, and, as such, incorporates sensitivity to peak- and off-peak travel times by modeling the trip distribution, modal choice, and a capacity restrained traffic assignment for four different periods of the day: a.m. (7:00 a.m. to 9:00 a.m.), Midday (9:00 a.m. to 2:30 p.m.), p.m. (2:30 p.m. to 6:00 p.m.), and Night (6:00 p.m. to 6:00 a.m.). The models incorporate an iteration, or feedback, of model steps so that the travel times attendant to each period used to determine travel patterns, transit ridership, and route choice are consistent with the travel times established in the capacity restrained traffic assignments specific to each period. This feedback of congested travel times within each of the four periods is iterated until the traffic volumes assigned to the system stabilize, thus insuring that the travel times, pattern of travel, and mode choice are consistent and stable.

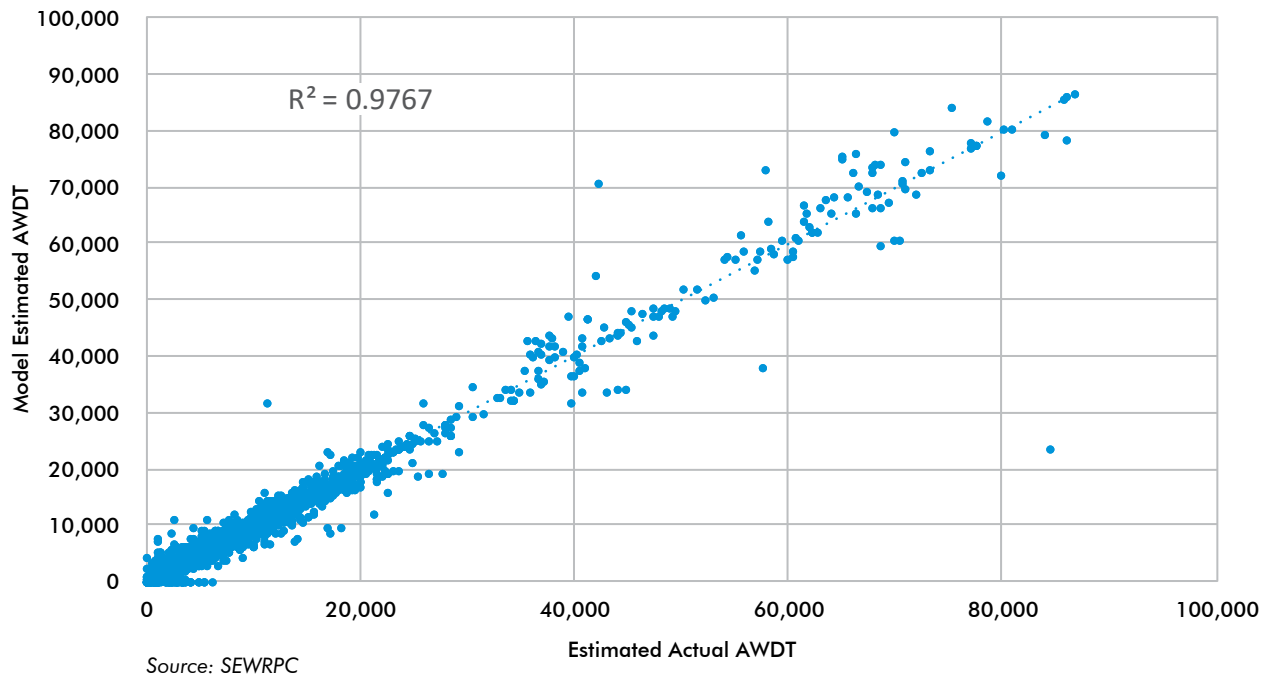
The constrained peak hour, and the free flow, or off-peak, travel speeds incorporated in the models are based upon actual field surveyed speeds and travel times. The last such analysis was conducted in 2014 utilizing GPS data collected as part of the 2011-2012 travel inventory. The models estimate travel times attendant to the traffic assigned within each model period and utilize these travel times within the trip distribution and modal choice for the work, shopping, and other purposes. The trip distribution step is sensitive to the modes available and both the trip distribution and mode choice steps are directly sensitive to the price of travel, as well as travel time, including public transit travel time.

The future travel and traffic forecasts from the models have been compared to historical trends. The models were validated with respect to simulation of both transit ridership and arterial street and highway traffic by comparing model estimates to actual counts for the years 2001 and 2011 using 2000 and 2010 census and land use inventory data, and 2001-2002 and 2011-2012 travel survey and transportation system inventory data. The VMT estimated by the models in the base year of its validation (2011) have been compared to estimates prepared with the WisDOT traffic counts included in the Highway Performance Monitoring System (HPMS), and it has been determined that the 2011 model estimate is consistent with the 2011 inventory estimate. This validation is documented in Chapter 4 of SEWRPC Technical Report No. 51.

### **Calculation of Arterial VMT**

To calculate arterial VMT, the AWDT volumes for a given link are multiplied by the link length, and those resulting link-level VMT estimates are then aggregated into arterial VMT estimates for the Region or for smaller areas such as a county or urbanized area.

**Figure B.2**  
**2016 24-Hour Origin-Destination Matrix Estimation Versus**  
**2012-2016 Average Weekday Traffic Volumes**



**Table B.2**  
**RMSE by Volume Range**

AWDT Range (vpd)	Target (%)	Actual (%)	RMSE	Links
< 5,000	100	21	585	4,719
5,000 – 9,999	45	9	657	2,593
10,000 – 14,999	35	11	1,263	750
15,000 – 19,999	30	8	1,432	294
20,000 – 29,999	27	10	2,241	117
30,000 – 39,999	25	11	3,803	35
40,000 – 49,999	25	14	6,300	36
50,000 – 59,999	20	11	6,304	19
>= 60,000	19	13	9,277	58
Areawide	45	19	1,219	8,621

Source: SEWRPC

**Table B.3**  
**Ratio of Nonarterial to Arterial VMT by County**

County	Nonarterial Factors		
	Rural	Urban	Total
Kenosha	0.014	0.083	0.097
Racine	0.021	0.070	0.091
Ozaukee	0.014	0.097	0.111
Milwaukee	--	0.095	0.095
Walworth	0.056	0.079	0.135
Washington	0.054	0.068	0.122
Waukesha	0.033	0.074	0.107

Source: SEWRPC

## NONARTERIAL VMT

The last step in the VMT estimation is accounting for off-network VMT. The procedures utilized by the Commission have been periodically reevaluated and validated. Such procedures were initially developed as part of the first Statewide implementation plan for air quality, prepared by the Regional Planning Commission in 1978, and provide estimates for use in regional transportation plan and State Implementation Plan preparation and conformity determination. The procedures are based on analyses that estimate off-network travel by calculating total intrazonal travel and trip lengths, based upon zone size and development distribution. The analyses indicate off-network travel represents about 9 percent of total travel. This result is consistent with independent highway performance monitoring system estimates. Off-network travel is estimated for each alternative by increasing network travel forecasts by approximately 10 percent in total, though for conformity purposes nonarterial VMT needs to be stratified as urban and rural using the ratios shown in Table B.3. In addition to conformity demonstrations, nonarterial VMT is incorporated into the annual VMT estimates published by the Commission in its Annual Report and during plan development.





**EXECUTIVE SUMMARY OF THE YEARS 2017-2020  
STRATEGIC HIGHWAY SAFETY PLAN PREPARED BY THE  
WISCONSIN DEPARTMENT OF TRANSPORTATION  
ATTACHMENT C**

Wisconsin's Strategic Highway Safety Plan (SHSP) is a statewide, comprehensive, and data-driven plan that implements the framework for supporting the safety goals. The SHSP examines a variety of issue areas that affect highway safety in Wisconsin. The ten highest priority issue areas and their associated tasks are listed below.

### **Improve Safety Culture, Safety Data, and Safety Technology**

*Task #1: Create a behavioral change work group that meets quarterly*

*Task #2: Change driver behavior through community engagement, education, and public outreach*

*Task #3: Improve data collection and availability*

*Task #4: Utilize innovative technology to increase safety*

### **Reduce Driver Distraction/Improve Driver Alertness**

*Task #1: Continue to focus on the use of rumble strips to address the issue of driver alertness*

*Task #2: Promote public safety measures to deter distracted driving*

*Task #3: Create education campaigns with direct outreach to teen/young adult drivers and adult drivers*

*Task #4: Review the effectiveness of Wisconsin's texting ban and the ability of law enforcement to enforce and properly report distracted driving*

*Task #5: Explore marketing and signage on roadways to remind drivers to stay alert and not to text and drive*

*Task #6: Keep abreast of research on the effects of different types of roadway signage, stationary billboards, vehicle technology, and mobile billboards on drivers' visual and cognitive attention*

*Task #7: Explore the possibility of creating incentives for motorists with safe driving records*

*Task #8: Create a multi-disciplined distracted driving work group that meets quarterly*

### **Reduce Alcohol & Drug-Impaired Driving**

*Task #1: Improve data collection, sharing, and distribution*

*Task #2: Continue the communication program*

*Task #3: Focus on the prevention of impaired driving*

*Task #4: Focus on impaired driving among persons younger than age 35*

*Task #5: Promote transportation alternatives*

*Task #6: Continue overtime enforcement*

*Task #7: Streamline the OWI process*

*Task #8: Improve drugged driving recognition*

*Task #9: Continue to support Traffic Safety Resource Prosecutors*

*Task #10: Create OWI courts*

*Task #11: Support the Intoxicated Driver Program*

*Task #12: Research lower allowable blood alcohol concentration (BAC)*

*Task #13: Increase compliance with ignition interlock devices (IIDs)*

*Task #14: Increase education related to impairment*

*Task #15: Continue quarterly impaired driving work group meetings*

## **Reduce the Incidence and Severity of Motorcycle Crashes**

*Task #1: Continue to develop and display PSAs about motorcyclist safety*

*Task #2: Reduce the number of unlicensed riders*

*Task #3: Provide courses for riders to refresh their skills*

*Task #4: Market refresher courses to make them more desirable*

*Task #5: Quantify data to share information with riders and law enforcement agencies*

*Task #6: Involve law enforcement in reaching out to the public*

*Task #7: Continue quarterly meetings of the Motorcycle Safety Advisory Council (MoSAC)*

## **Improve Driver Performance (Teens, Older, Competent)**

*Task #1: Improve teen driver performance*

*Task #2: Ensure drivers are licensed and competent*

*Task #3: Sustain proficiency in older drivers*

*Task #4: Create a multi-disciplined work group to meet quarterly on driver performance*

## **Improve Non-Motorist Safety**

*Task #1: Use infrastructure and engineering treatments to strengthen the safety of vulnerable users*

*Task #2: Increase education for both motorists and non-motorists*

*Task #3: Use enforcement to protect non-motorists*

*Task #4: Support public information campaigns*

*Task #5: Utilize road diets, speed reduction methods, and stop laws*

*Task #6: Create a work group that meets quarterly regarding non-motorist safety*

## **Improve Safety of Intersections**

*Task #1: Improve data and decision support*

*Task #2: Support knowledge development and knowledge sharing*

*Task #3: Implement cutting-edge design and engineering safety interventions*

*Task #4: Create a multi-disciplined work group on intersection safety*

## **Increase Occupant Protection**

*Task #1: Increase public outreach to improve awareness*

*Task #2: Continue Click It or Ticket and other High-Visibility Mobilization initiatives*

*Task #3: Develop best practice on occupant protection*

*Task #4: Continue the participation of external partners in the Seat Belt and Child Safety Seat Work Group*

*Task #5: Continue the federally required annual field observation safety belt use survey*

*Task #6: Work with child safety seat advocates to improve education for individuals and agencies that transport children*

*Task #7: Continue to have quarterly meetings of the occupant protection work group*

## **Curb Aggressive Driving/Reduce Speed-Related Crashes**

*Task #1: Increase targeted enforcement and strengthen the efficiency of prosecutions*

*Task #2: Increase innovative education and outreach*

*Task #3: Implement sound engineering practices as a defense against unsafe driving behavior*

*Task #4: Provide research and data to support sound policy making*

*Task #5: Establish rational speed limits on state and local roads*

*Task #6: Continue to have quarterly meetings through the aggressive driving work group*

### **Reduce Lane Departure Crashes**

*Task #1: Develop and improve data and decision support systems for county/municipal and state engineering to reduce the incidence and severity of lane departure crashes*

*Task #2: Develop and implement a comprehensive program to reduce the incidence and severity of lane departure crashes*

*Task #3: Analyze and develop roadside and pavement strategies focusing on low cost treatment for rural highways that are not state trunk highways*

*Task #4: Create a multi-disciplined work group on lane departure crashes*

**VISION 2050 SAFETY-RELATED  
RECOMMENDATIONS  
ATTACHMENT D**

**Vehicular crashes take a heavy toll in life, property damage, and human suffering, and should be minimized through a variety of measures.**

► **Recommendation 6.5: Address safety needs on the arterial street and highway network**

The occurrence of crashes can have a negative effect on the Region as they contribute to overall transportation costs; increase public costs for police, emergency medical, and other social services; and cause nonrecurring congestion on the highway system. In addition, vehicular crashes take a heavy toll in life, property damage, and human suffering. Vehicular crashes occur due to one or a combination of the following factors: human error, vehicle failure, and roadway/environmental conditions. VISION 2050 recommends that Federal, State, and local governments, and the Commission, work to:

- **Minimize total traffic crashes on the arterial street and highway system** – Implementing each element of VISION 2050 should minimize the number of total traffic crashes on the arterial street and highway system. For example, the recommended improvement and expansion of public transit and bicycle and pedestrian facilities and implementation of the recommended TDM measures should reduce the growth in vehicle travel, conflicts, and crashes and encourage increased travel on safer facilities and services. Also, the recommended reconstruction of the freeway system with additional traffic lanes should reduce traffic congestion and related traffic crashes. While VMT may be expected to increase by 23 percent by the year 2050, total vehicular crashes are estimated to increase by only 16 to 22 percent with full implementation of all elements of VISION 2050.

With respect to highways, strategies that can reduce the number of crashes should be considered for roadways identified as having excessive crashes as part of a safety assessment or during preliminary engineering for their reconstruction or rehabilitation. These strategies can include modifying roadway and roadside elements (such as increasing lane width, adding/widening paved shoulders, installing side barricades, and removing fixed objects along the roadside), improving horizontal and vertical grades, modifying intersections (such as improving signal timing and adding turn lanes), adding/modifying signage and pavement markings, and controlling access. In some cases, the rate of crashes may be reduced by adding capacity along a surface arterial, such as reconstructing an urban two-lane arterial that exceeds its design capacity as a divided roadway. With respect to freeways, strategies to reduce the number of crashes could also include removing ramp entrances and exits on the left side of the freeway, increasing the distance between ramp terminals, and increasing entrance ramp length. Adding capacity on heavily congested freeways can also be expected to reduce crash rates.

- **Minimize total traffic crashes, along with crashes involving fatalities and serious injuries, on the arterial street and highway system** – There are many factors that can affect the severity of a crash, including human factors (age and vulnerability of drivers/passengers, seat belt/helmet use, speed of vehicle, sobriety of driver), vehicle factors (safety features), and roadway/environmental factors (weather conditions, pavement condition, grade, presence of roadside features). Implementing the recommendations of the State’s Strategic Highway Safety Plan (SHSP) by the State and local governments would assist

in the reduction of crashes involving fatalities and serious injuries.<sup>23</sup> While implementing the SHSP would be expected to reduce overall crashes, addressing the types of crashes emphasized in the SHSP would also be expected to reduce fatalities and serious injuries, which occur at a higher proportion for such crashes. The types of crashes prioritized in the SHSP include intersection crashes, speed-related crashes, head-on and roadway departure crashes, crashes involving pedestrians and bicyclists, alcohol/drug-related crashes, and crashes involving the driver or passengers not wearing a seatbelt.

- **Minimize bicycle and pedestrian-related crashes** – While the number of reported vehicular crashes involving either a bicycle or a pedestrian accounted for only 3 percent of all vehicular crashes in the Region, they were involved in about 18 percent of vehicular crashes resulting in a fatality or serious injury. VISION 2050 promotes the improvement of bicycle and pedestrian safety by recommending implementation of safe and convenient accommodations for bicycle and pedestrian traffic. Specifically, VISION 2050 recommends that as arterial roadways in the Region are reconstructed and resurfaced, bicycle accommodation be considered and implemented, as described in Recommendation 3.1. In addition, VISION 2050 recommends, under Recommendation 3.2, expanding a system of off-street bicycle paths largely constructed in natural resource and utility corridors. VISION 2050 also recommends a network of enhanced bicycle facility corridors through the Kenosha, Milwaukee, and Racine urbanized areas, as described under Recommendation 3.3. These corridors, in particular, would be expected to reduce bicycle-related crashes on higher-speed, higher-volume arterial streets and highways within the three urbanized areas by separating bicyclists from automobiles (either through accommodations along the roadway or by use of parallel nonarterials). With respect to pedestrian safety, VISION 2050 recommends providing sidewalks in areas of existing or planned urban development, and encourages making efforts to maximize pedestrian safety at street crossings in these locations, as described in Recommendation 3.5.
- **Reduce conflicts between automobiles and public transit vehicles** – VISION 2050 recommends expanding the use of dedicated transit lanes along rapid, express, and major local transit routes, as described in Recommendation 2.6. The dedicated transit lanes could be provided via auxiliary lanes, or where right-of-way is constrained through peak-period, peak-direction curb-lane parking restrictions. These lanes are intended to reduce travel times and improve transit travel time reliability during times of congestion, but can also reduce the conflicts between automobiles and public transit vehicles by allowing transit vehicles to stop without interrupting the flow of traffic.
- **Reduce vehicle traffic conflicts** – VISION 2050 recommends that traffic engineering measures and access management standards be considered to reduce vehicle traffic conflicts, including freeway modernization, congestion mitigation, and implementation of alternative intersection types.
  - o **Freeway Modernization** – It is anticipated that the segment-by-segment reconstruction of the regional freeway system would

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<sup>23</sup> At the time VISION 2050 was completed, the most recent SHSP was completed in September 2014 for the years 2014-2016 and can be found at <http://wisconsindot.gov/Pages/safety/education/frms-pubs>.

continue during the time period of VISION 2050. The regional freeway system was originally built in the 1950s, 1960s, and 1970s, and is approaching the end of its useful life. Over the last few decades, there have been significant advances in freeway design, as a result of research and experience in freeway operations. The existing freeway system has many deficiencies in design—left-hand exits and entrances, lack of shoulders, service interchanges spaced too close to freeway-to-freeway interchanges, and multi-point exits. VISION 2050 recommends reconstructing the freeway system to modern design standards, addressing the design deficiencies of the existing freeway system and improving travel safety.

- o **Congestion Mitigation** – Portions of the freeway system in the Region, particularly in Milwaukee and Waukesha Counties, currently experience severe congestion, and are projected to experience substantially increased congestion, for periods of the day, even if all of the VISION 2050 recommendations that do not involve highway capacity expansion are implemented, including improved land use, travel demand and systems management, and improved and expanded public transit. The rate of overall crashes is greater on the segments of congested freeway (typically 2 to 7 times higher). In particular, rear-end crash rates (which make up about 40 percent of total freeway crashes) are 5 to 20 times higher on congested freeway segments, with the highest rates on the most severely congested freeway segments. While it would be expected that freeway modernization would reduce sideswipe crashes, it would not be expected to significantly reduce the number of rear-end crashes, which appear to be more of a result of freeway congestion. Thus, the freeway widenings recommended under Recommendation 6.3 would be expected to improve travel safety by reducing congestion, and associated rear-end crashes.
- o **Alternative Intersections** – VISION 2050 recommends that alternative intersection types that reduce the number of vehicle-to-vehicle conflicts be considered, particularly for high-volume intersections. While VISION 2050 does not identify the specific treatment that should be implemented at each intersection, it recommends that alternative intersection types be considered during the preliminary engineering conducted for the reconstruction of the intersection. Roundabouts are one example of an alternative intersection type increasingly being implemented throughout the Region. While a roundabout is not ideal for every intersection location, when properly designed and located, roundabouts have been found to be effective in reducing the number of crashes, and particularly the severity of crashes. Other intersection types utilized around the country that could be considered on the Region's arterial system include displaced left-turns, median U-turns, restricted crossing U-turns (including J-turn intersections), and quadrant roadways (currently proposed by WisDOT for the intersection of STH 50 and STH 31 in Kenosha County).
- o **Access Management** – Developing and implementing access management standards, as recommended in Recommendation 4.7, along arterial streets and highways would be expected to reduce the number of conflicts that can result in vehicular crashes. A set of recommended access management standards are included in the design guidelines.



- **Regional Safety Implementation Plan** – VISION 2050 recommends that the Commission, working with WisDOT and local governments, develop a Regional Safety Implementation Plan (RSIP) that will identify a list of intersections and corridors along the Region’s arterial streets and highways with the most severe crash rates in each county. These intersections and corridors would be prioritized based on the nature of the crashes and frequency of the crashes resulting in fatalities and serious injuries. This prioritization could be used by the State and local governments to identify intersections and corridors for further, more detailed safety studies and identifying and prioritizing projects for Federal and State Highway Safety Improvement (HSIP) funds. The study would also identify a list of corrective measures to reduce the number and severity of crashes.



# SUMMARY OF RECORD OF PUBLIC COMMENT ATTACHMENT E

This attachment constitutes the formal record of public involvement in the establishing of targets for the national highway safety performance measures<sup>11</sup> for inclusion into VISION 2050—the year 2050 regional land use and transportation plan—as an amendment. The targets, along with the procedures used to develop the targets, were reviewed by the Advisory Committees on Regional Land Use Planning and Regional Transportation Planning. These Committees are comprised of chief elected and appointed officials of local governments and also representatives of Federal and State transportation and environmental resource agencies.

The public was requested to comment on the preliminary recommended targets, along with the procedures used to establish targets, documented in the draft *Establishing Targets for Federal Performance Measures: Highway Safety* from March 14, 2018, through April 13, 2018. Formal announcement of the public comment period was provided through paid notices appearing in the Milwaukee Journal-Sentinel on March 15, 2018, the Milwaukee Community Journal on March 14, 2018, and in El Conquistador on March 15, 2018. A copy of each of these notices is included in Figure E.1.



Also, beginning on March 14, 2018, the draft *Establishing Targets for Federal Performance Measures: Highway Safety* was made available from the Commission through the Commission’s website and for review at the Commission offices during normal business hours of 8:00 a.m. through 4:30 p.m., Monday through Friday. A summary description of the preliminary recommended targets and opportunity to submit email comments were also available on the Commission’s website. A copy of the webpage posted on the Commission’s website for the safety targets is also included in Figure E.1.

No public comments were submitted on the preliminary recommended targets and the procedures to develop the targets.

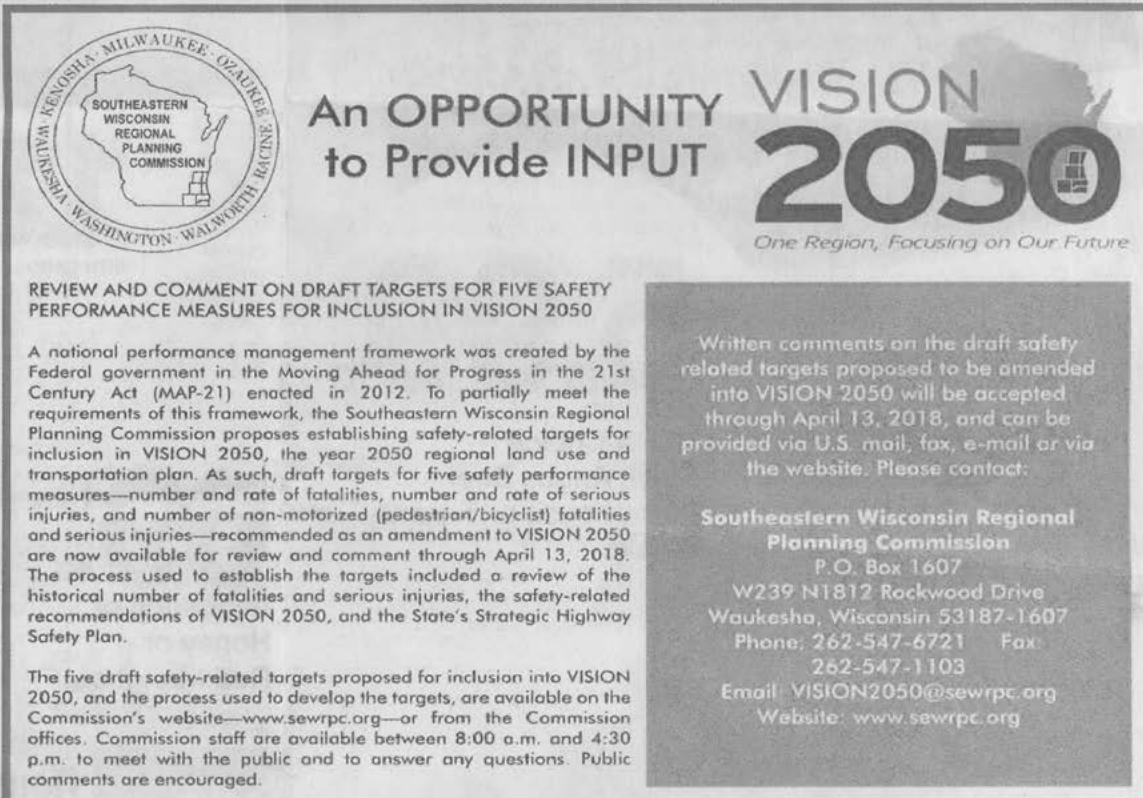
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<sup>11</sup> The safety targets are being established as part of the national performance management framework created by the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012, and continued in the Fixing America’s Surface Transportation (FAST) Act of 2015.

**Figure E.1**  
**Notice of Public Review Period**

 <p><b>An OPPORTUNITY to Provide INPUT</b> <b>VISION 2050</b>  <i>One Region, Focusing on Our Future</i></p> <p><b>REVISIÓN Y COMENTARIOS EN BOSQUEJO SEÑALADOS PARA CINCO MEDIDAS DE RENDIMIENTO PARA INCLUSIÓN EN VISION 2050</b></p> <p>Un marco nacional de rendimiento gerencial fue creado por el gobierno federal en el Acta Moviendo A Adelante para el Progreso en Siglo 2 (MAP-21) enastada en el 2012. Para llenar parcialmente los requisitos de este marco de trabajo, la Southeastern Wisconsin Regional Planning Commission propone establecer objetivos relacionados con la seguridad tales como, hacer bosquejos de objetivos para cinco medidas de seguridad operacional, numeradas y medidas en fatalidades, numero y medidas de heridas serias, y el número de fatalidades no motorizadas (peatón y ciclista) y heridas serias—recomendadas como una enmienda a VISION 2050 están ahora disponibles para revisión y comentarios hasta el 13 de abril de 2018. El proceso usado para establecer los objetivos incluidos en la revisión de los números históricos de fatalidades y heridas serias, las recomendaciones real sonadas a la seguridad de VISION 2050 y el State's Strategic Highway Safety Plan.</p> <p>Los cinco bosquejos de objetivos relacionados a la seguridad propuestos para inclusión al VISION 2050, y el proceso usado para desarrollar los objetivos, están disponibles en la página de internet de la comisión — <a href="http://www.sewrpc.org">www.sewrpc.org</a> — o de las oficinas del Comisión. Personal de la comisión estará disponible entre las 8:00 am - 4:30 p.m. para recibir al público y el contestar cualquier pregunta. Se alenta los comentarios del público.</p> <p>Comentarios escritos sobre el bosquejo relacionados a los objetivos de seguridad propuestos a ser modificado dentro de VISION 2050 serán aceptados hasta el 13 de abril de 2018, pueden ser provistos vía correo de EEUU, fax, correo electrónico o via la página de la internet. Favor de comunicarse con</p> <p><b>Southeastern Wisconsin Regional Planning Commission</b>  P.O. Box 1607  W239 N1812 Rockwood Drive  Waukesha, Wisconsin 53187-1607  Telefono: 262-547-6721 Fax: 262-547-1103  Email: <a href="mailto:VISION2050@sewrpc.org">VISION2050@sewrpc.org</a>  Website: <a href="http://www.sewrpc.org">www.sewrpc.org</a></p>	 <p><b>An OPPORTUNITY to Provide INPUT</b> <b>VISION 2050</b>  <i>One Region, Focusing on Our Future</i></p> <p><b>REVIEW AND COMMENT ON DRAFT TARGETS FOR FIVE SAFETY PERFORMANCE MEASURES FOR INCLUSION IN VISION 2050</b></p> <p>A national performance management framework was created by the Federal government in the Moving Ahead for Progress in the 21st Century Act (MAP-21) enacted in 2012. To partially meet the requirements of this framework, the Southeastern Wisconsin Regional Planning Commission proposes establishing safety-related targets for inclusion in VISION 2050, the year 2050 regional land use and transportation plan. As such, draft targets for five safety performance measures—number and rate of fatalities, number and rate of serious injuries, and number of non-motorized (pedestrian/bicyclist) fatalities and serious injuries—recommended as an amendment to VISION 2050 are now available for review and comment through April 13, 2018. The process used to establish the targets included a review of the historical number of fatalities and serious injuries, the safety-related recommendations of VISION 2050, and the State's Strategic Highway Safety Plan.</p> <p>The five draft safety-related targets proposed for inclusion into VISION 2050, and the process used to develop the targets, are available on the Commission's website—<a href="http://www.sewrpc.org">www.sewrpc.org</a>—or from the Commission offices. Commission staff are available between 8:00 a.m. and 4:30 p.m. to meet with the public and to answer any questions. Public comments are encouraged.</p> <p>Written comments on the draft safety related targets proposed to be amended into VISION 2050 will be accepted through April 13, 2018, and can be provided via U.S. mail, fax, e-mail or via the website. Please contact:</p> <p><b>Southeastern Wisconsin Regional Planning Commission</b>  P.O. Box 1607  W239 N1812 Rockwood Drive Waukesha, Wisconsin 53187-1607 Phone: 262-547-6721 Fax: 262-547-1103  Email: <a href="mailto:VISION2050@sewrpc.org">VISION2050@sewrpc.org</a>  Website: <a href="http://www.sewrpc.org">www.sewrpc.org</a></p>
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**El Conquistador**  
**March 15 – 21, 2018**



**An OPPORTUNITY to Provide INPUT** **VISION 2050**  
*One Region, Focusing on Our Future*

**REVIEW AND COMMENT ON DRAFT TARGETS FOR FIVE SAFETY PERFORMANCE MEASURES FOR INCLUSION IN VISION 2050**

A national performance management framework was created by the Federal government in the Moving Ahead for Progress in the 21st Century Act (MAP-21) enacted in 2012. To partially meet the requirements of this framework, the Southeastern Wisconsin Regional Planning Commission proposes establishing safety-related targets for inclusion in VISION 2050, the year 2050 regional land use and transportation plan. As such, draft targets for five safety performance measures—number and rate of fatalities, number and rate of serious injuries, and number of non-motorized (pedestrian/bicyclist) fatalities and serious injuries—recommended as an amendment to VISION 2050 are now available for review and comment through April 13, 2018. The process used to establish the targets included a review of the historical number of fatalities and serious injuries, the safety-related recommendations of VISION 2050, and the State's Strategic Highway Safety Plan.


The five draft safety-related targets proposed for inclusion into VISION 2050, and the process used to develop the targets, are available on the Commission's website—[www.sewrpc.org](http://www.sewrpc.org)—or from the Commission offices. Commission staff are available between 8:00 a.m. and 4:30 p.m. to meet with the public and to answer any questions. Public comments are encouraged.

Written comments on the draft safety related targets proposed to be amended into VISION 2050 will be accepted through April 13, 2018, and can be provided via U.S. mail, fax, e-mail or via the website. Please contact:

**Southeastern Wisconsin Regional Planning Commission**  
P.O. Box 1607  
W239 N1812 Rockwood Drive  
Waukesha, Wisconsin 53187-1607  
Phone: 262-547-6721 Fax: 262-547-1103  
Email: [VISION2050@sewrpc.org](mailto:VISION2050@sewrpc.org)  
Website: [www.sewrpc.org](http://www.sewrpc.org)

**The Milwaukee Community Journal**  
**March 14, 2018**

Figure E.1 (Continued)



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Website: [www.sewrpc.org](http://www.sewrpc.org)



**Milwaukee Journal Sentinel**  
March 15, 2018

Figure E.1 (Continued)



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SEWRPC > Transportation > VISION 2050 Amendment: Establishing targets for the Federal safety performance measures for incorporation into VISION 2050

Regional Transportation Improvement Program: 2017–2020

VISION 2050 Amendment: Establishing targets for the Federal safety performance measures for incorporation into VISION 2050

2016 Certification Review of the SEWRPC Metropolitan Transportation Planning Process

2012 Certification Review of the SEWRPC Metropolitan Transportation Planning Process

Regional Transportation Improvement Program: 2015–2018

Public Participation in Regional Planning

Section 5310 Program

2035 Regional Transportation Plan

STH 60 Northern Reliever Route Feasibility Study

Traffic Engineering Study for the Intersection of S. 51st Street and W. Drexel Avenue

2014 Interim Review and Update of the Year 2035 Regional Transportation Plan

Jurisdictional Highway Plans

Regional Transportation Operations Plan: 2012–2016

Congestion Management Process in Southeastern Wisconsin

Transit Development Plans

Human Services Transportation Coordination

Environmental Justice Task Force

Regional Airport System Plan

Other Transportation Project Websites

Links and Document Downloads

### VISION 2050 Amendment: Establishing targets for the Federal safety performance measures for incorporation into VISION 2050

The Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) enacted in 2012, created a national performance management framework that established uniform performance measures and target setting to, in part, create a consistent nationwide process for monitoring the effectiveness of Federal transportation investments, including investments in safety-related improvements implemented with Highway Safety Improvement Program (HSIP) funding. As part of implementing the national performance management framework, States and metropolitan planning organizations (MPOs), like the Commission, are to annually establish targets for the five safety performance measures:

- Number of fatalities
- Rate of fatalities per one hundred million vehicle miles traveled (HMVMT)
- Number of serious injuries
- Rate of serious injuries per HMVMT
- Number of non-motorized (pedestrian/bicyclist) fatalities and serious injuries

Under the national performance management framework, the State is required to establish safety performance targets for the State and the Commission is required to establish safety performance targets for the Region's metropolitan planning area ([map](#)). The targets are set for each of the five safety measures as a rolling five-year average ending in the year after the reporting year (2018), and are compared to a base rolling five-year average ending in the year previous to the reporting year (2016). While the Commission is required to establish safety targets and plan and program for achievement of those targets, there are no consequences should those targets not be met. In addition, the safety performance targets established for the Region are required to be incorporated into VISION 2050—the year 2050 regional land use and transportation plan completed in 2016.

The Commission is currently requesting public comment through April 13, 2018, on the procedures used to develop the safety targets and preliminary recommended safety targets that will be considered by the responsible Advisory Committees and the Commission for inclusion of the safety targets into VISION 2050—the adopted year 2050 regional land use and transportation plan.

### Preliminary Recommended Targets for Safety-Related Performance Measures

To establish the required short-term safety targets for the Region, Commission staff first used the following process to develop long-term (for the period 2046–2050) safety targets in the context of VISION 2050.

Table 1 shows the preliminary recommended years 2046–2050 regional targets for each of the five National safety performance measures, which are proposed to be incorporated into VISION 2050 as an amendment. Figures showing the declines of the preliminary recommended regional years 2046–2050 targets over the 34-year timeframe between 2017 and 2050 for each of the performance measures can be found [here](#). Table 2 shows the resulting short-term years 2014–2018 safety targets for both the Region's metropolitan planning area and the seven-county Region.

### Related Materials

[Establishing Targets for the Federal Highway Safety Performance Measures](#)  
[VISION 2050](#)

### Committees

[Advisory Committee on Regional Land Use Planning](#)  
[Advisory Committee on Transportation Planning](#)

## Figure E.1 (Continued)

**Table 1**  
Draft 2046-2050 Regional Targets for National Safety-Related Performance Measures

Performance Measure	2012-2016 Baseline Data	Preliminary Recommended 2046-2050 Target	Percent Change from 2012-2016 Base Year
Number of Fatalities	152.2	91.9	-39.6
Rate of Fatalities	0.902	0.488	-49.3
Number of Serious Injuries	796.2	144.1	-82.0
Rate of Serious Injuries	5.053	0.766	-84.8
Number of Non-Motorized Fatalities and Serious Injuries	167.2	45.7	-72.7

Source: Fatality Analysis Reporting System (FARS) and Wisconsin Traffic Operations and Safety (TOPS) Laboratory

**Table 2**  
Resulting 2014-2018 Regional and Metropolitan-Area Targets Based on Draft 2046-2050 Regional Targets

Performance Measure	Metropolitan Planning Area		Seven-County Region	
	2012-2016 Baseline Data	2014-2018 Target	2012-2016 Baseline Data	2014-2018 Target
Number of Fatalities	137.2	133.2	152.2	147.7
Rate of Fatalities	0.923	0.884	0.962	0.922
Number of Serious Injuries	743.6	672.5	796.2	721.7
Rate of Serious Injuries	9.009	4.464	9.053	4.904
Number of Non-Motorized Fatalities and Serious Injuries	161.0	149.2	167.2	154.9

Source: Fatality Analysis Reporting System (FARS) and Wisconsin Traffic Operations and Safety (TOPS) Laboratory

These preliminary recommended targets represent the aspirational nature of, and quantify, the safety objective and safety recommendations of VISION 2050, but recognize the effect of past efforts to reduce the number and rate of fatalities and serious injuries. The preliminary recommended safety targets, along with the process to establish the targets, were reviewed and endorsed by the Commission's Advisory Committees on [Regional Land Use Planning](#) and [Regional Transportation Planning](#) at joint meeting held on January 18, 2018.

Details on the process used to establish the safety performance targets for the Region can be found in this [document](#).

### Reporting and Monitoring of Safety Targets

The safety targets will be reported and monitored in the transportation system performance section of the Commission's Annual Report and on its website. The regional long-term targets will be reviewed and potentially updated every four years as part of the interim regional plan update and every 10 years as part of the major regional plan update.

### Public Comment

The next step in establishing the safety targets for VISION 2050 is soliciting comments from the public. Comments will be accepted through April 13, 2018, and can be provided electronically via email (VISION2050@sewrpc.org), through the VISION 2050 Amendment: Establishing Targets for the Federal Safety Performance Measures webpage (see below), or via letter to the address below. Any comments received during the public comment period will be reviewed by Commission staff and will be summarized and addressed. The comments received will be reviewed by the Advisory Committees and the Commission as part of their consideration of incorporating the long-term safety targets into VISION 2050.

Please provide the following information prior to submitting your request:

First Name:\*

Last Name:\*

Email Address:

Organization

Mailing Address:

City:\*

State:\*

Zip:

\* Denotes a required field

Press the "Submit" button when finished.

**Submit**

E-Mail: VISION2050@sewrpc.org

Phone: (262) 547-6721

Fax: (262) 547-1103

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P.O. Box 1607

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Rob W. Merry, PLS ..... Chief Surveyor  
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David A. Schilling ..... Chief Land Use Planner  
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