

## Preliminary Draft

## APPENDIX I

**THE AMENDED 2017-2020 TRANSPORTATION IMPROVEMENT PROGRAM CONTRIBUTION  
TOWARDS ACHIEVING THE PERFORMANCE GOALS OF VISION 2050 AND THE  
ESTABLISHED TARGETS FOR THE NATIONAL PERFORMANCE MEASURES**

This appendix documents the expected contribution of projects programmed in the 2017-2020 transportation improvement program for Southeastern Wisconsin (TIP), as amended through April 2018, towards achieving the performance goals of VISION 2050—the year 2050 regional land use and transportation plan completed in 2016—and achieving the targets for the National performance measures created by the Moving America Forward to Progress in the 21<sup>st</sup> Century Act (MAP-21) of 2012, and continued in the Fixing America’s Surface Transportation (FAST) Act of 2015. Thus far, per Federal requirements, targets have been established by the Commission for the four transit state-of-good-repair and the five highway safety performance measures. The Commission will be establishing targets for the remaining highway performance measures (relating to system and freight reliability, pavement/bridge performance, and congestion mitigation and air-quality) by November 2018, and the transit safety performance measures following the completion of the rule-making process for these measures.

**CONTRIBUTION OF PROJECTS IN THE AMENDED 2017-2020 TIP  
TOWARDS ACHIEVEMENT OF VISION 2050 PERFORMANCE GOALS**

Performance measures have long been utilized by the Commission in the development, and in monitoring the implementation, of its regional transportation plans, including for VISION 2050. Specifically, regional performance measures based on plan goals and objectives were established and used during the development of VISION 2050 to evaluate the effectiveness of alternative regional land use and transportation plans and the preliminary and final recommended plans. Thus, implementation of the various transportation elements of VISION 2050—transit, bicycle/pedestrian, transportation systems management, travel demand management, arterial roadways, and freight facilities—would contribute to the achievement of the overall plan goals. VISION 2050 also identified a number of measures for the monitoring of the performance of the transportation system as transportation projects are implemented.<sup>1</sup> Examples of transportation performance measures that are monitored include pavement/bridge condition, level of traffic congestion and delay, vehicle and pedestrian/bicycle crashes, air-quality emissions, and transit quality.

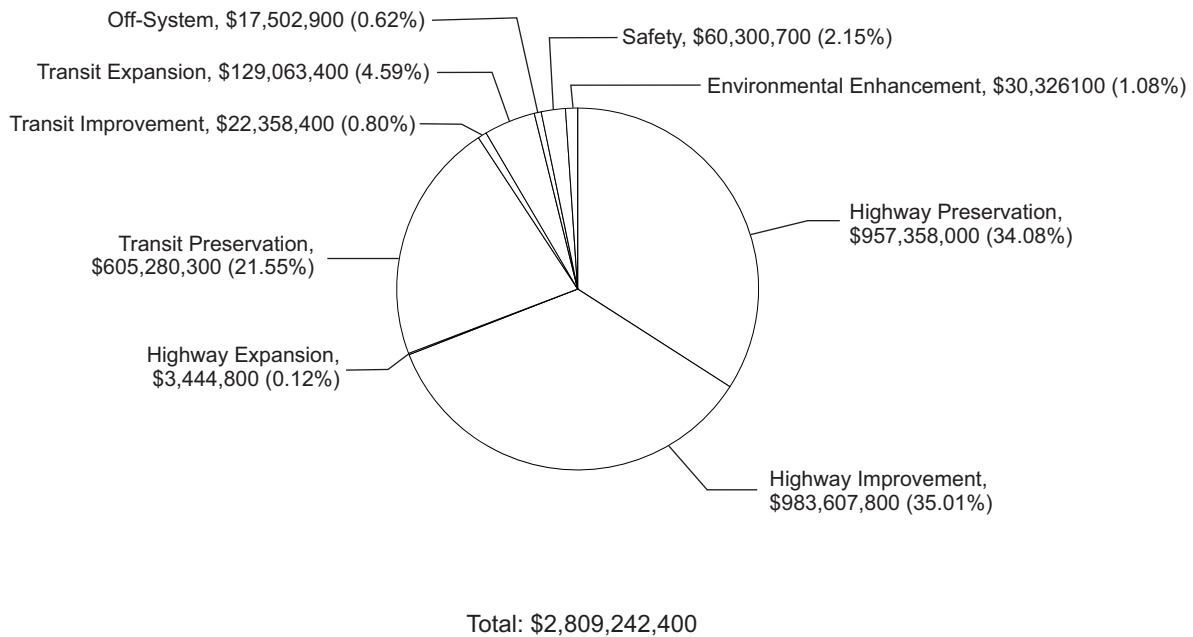
The 2017-2020 TIP, as amended through April 2018, includes about \$2.8 billion in expenditures for transit, arterial roadway, bicycle/pedestrian, and other transportation-related projects in Southeastern Wisconsin. Figure 1 shows the expenditures programmed in the amended 2017-2020 TIP for each of the TIP categories. These TIP projects are consistent with, and serve to implement, the transportation-related goals and recommendations of VISION 2050, including recommendations related to transit, bicycle/pedestrian facilities, transportation system management, travel demand management, arterial streets and highways, and freight facilities. Table 1 shows the potential contribution of the projects programmed in the 2017-2020 TIP towards achieving of select transportation goals and performance measures identified in VISION 2050. Some projects programmed in the 2017-2020 TIP are more focused in their impact toward achievement of VISION 2050 goals, such as safety projects, congestion mitigation and air quality (CMAQ) projects, and bicycle/pedestrian projects. However, other projects in the TIP have

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<sup>1</sup> Table 3.11 on page 185 of Chapter 3 of Volume III of the VISION 2050 report identifies the performance measures that are monitored and the frequency of their monitoring—annually as part of the Commission’s annual report, every four years as part of an interim plan update, or every 10 years as part of a major plan update.

Figure 1

Total Funding in 2017-2020 TIP Amended as of April 2018



- Notes:
- 1) Highway Preservation projects result in little or no increase in the traffic-carrying capacity of the existing arterial street system, but are necessary to maintain existing capacity and structural adequacy of the arterial facility for which the project is proposed. These projects, which are described as resurfacing or reconstruction, may also incorporate modernization of the existing arterial facility to address safety and other concerns by including intersection improvements, shoulder widening, and vertical and horizontal alignment improvements.
  - 2) Highway Improvement projects involve roadway reconstruction and include in the reconstruction an increase in the traffic carrying capacity of the existing arterial highway system, typically through the addition of traffic lanes.
  - 3) Highway Expansion projects involve increasing the traffic carrying capacity of the arterial highway system through development of new arterial streets or highways.
  - 4) Transit Preservation projects involve the necessary maintenance of the current quality and level of service on the existing transit system.
  - 5) Transit Improvement projects involve improving the quality and level of service on the existing transit system.
  - 6) Transit Expansion projects involve either expanding the existing transit system or creating new transit systems or subsystems.
  - 7) Highway Safety projects involve improving or eliminating existing unsafe conditions on the Federal aid highway system as it currently exists, and they are candidates for special Federal safety program funding.
  - 8) Environmental Enhancement projects involve materially reducing air, noise, or visual pollution, but do not significantly affect highway system operation or capacity (including traffic flow, bicycle/pedestrian, and alternative fuel projects).
  - 9) Highway Off-System projects involve projects on streets or highways which are not on the arterial street and highway system and are candidates for special Federal funding, such as funds for bridges.

Source: SEWRPC.

**Table 1**  
**Potential Contribution of Projects Programmed in the Amended 2017-2020 Transportation Improvement Program for Southeastern Wisconsin (TIP)<sup>1</sup> in Achieving Select VISION 2050 Goals**

Select VISION 2050 Goal	Associated Performance Measures	Projects Programmed in 2017-2020 TIP		
		Project Types	Quantity	Amount of Total Funds Programmed
Maintain State of Good Repair of Transit System	--	Capital Transit Preservation Projects <sup>2</sup>	63 Projects	\$144,262,100
Expand and Improve Transit Service	Transit Service Area and Quality	Transit Improvement and Expansion Projects	189,000 People Served With Improved Transit	\$108,400,000
Expand Bicycle/Pedestrian Facilities	Miles of Bicycle and Pedestrian Facilities	Expansion of Pedestrian/Bicycle Facilities <sup>3</sup>	15 Miles	\$14,340,200
Maintain State of Good Repair of Arterial Roadways	Pavement Condition	Resurfacing, Reconditioning, and Reconstruction <sup>4</sup> of Arterial Roadways	293 Miles	\$1,360,428,300
Maintain Bridge Condition	Bridge Condition	Rehabilitation and Replacement of Bridges	220+ Bridges	\$271,108,100
Reduce Vehicular Congestion	Miles of Arterials Experiencing Congestion and Excessive Delay	Reconstruction of Arterials with Additional Lanes and New Arterials	56 Miles	\$884,972,600
Reduce Vehicular Crashes	Number and Rate of Crashes	Highway Safety Projects <sup>5</sup>	48 Projects	\$57,907,400
Reduce Air-Quality Emissions	Transportation Emission Levels	Congestion Mitigation and Air-Quality Projects	271 Pounds Per Day Emission Reduction <sup>6</sup>	\$64,570,200

<sup>1</sup>Includes only projects that have construction programmed within the 2017-2020 TIP.

<sup>2</sup>Does not include the \$461,018,200 in operating funds programmed in the amended 2017-2020 TIP to maintain the existing transit service.

<sup>3</sup>Does not include the bicycle lanes, paved shoulders, and other bicycle accommodations that could be provided as part of the 293 miles of programmed resurfacing, reconditioning, and reconstruction projects.

<sup>4</sup>Includes both reconstruction to same capacity and reconstruction with additional traffic lanes.

<sup>5</sup>Does not include the safety improvements associated with other projects

<sup>6</sup>Includes estimated reductions for the ozone precursors NO<sub>x</sub> and VOCs and for PM<sub>2.5</sub>

Source: SEWRPC.

much broader contributions toward the achievement of the VISION 2050 goals. For example, projects involving arterial resurfacing, reconditioning, and reconstruction, while primarily addressing the condition of pavement, could also address safety, provide bicycle/pedestrian accommodations, and address congestion and air quality by improving traffic flow (such as providing signal coordination).

## **CONTRIBUTION OF PROJECTS IN THE AMENDED 2017-2020 TIP TOWARDS ACHIEVMENT OF NATIONAL PERFORMANCE MEASURE TARGETS**

To establish a consistent nationwide process for monitoring the effectiveness of Federal transportation investments, MAP-21, enacted in 2012, created a framework for a national performance management approach to transportation decision-making on investments with Federal highway and transit funding. In implementing the performance management approach, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) have developed specific highway and transit performance measures, and requirements for States, transit operators, and Metropolitan Planning Organizations (MPOs) in establishing and reporting targets, along with the monitoring of achievement of the targets, for each performance measure. Table 2 shows the performance measures established by FHWA and FTA. The Commission is responsible for establishing baseline data and performance targets for all of the performance measures for Southeastern Wisconsin<sup>2</sup>, and is required to report in VISION 2050 the established baseline data and the performance targets. In addition, the Commission is required to include in the TIP a description of how the projects programmed in the TIP promote the achievement of the performance targets.

Thus far, per Federal requirements, the Commission has established regionwide targets for the four transit asset management performance measures and for the five highway safety performance measures. In addition, the highway safety performance measures have been incorporated into VISION 2050. While the projects listed in the amended 2017-2020 TIP were generally programmed prior to the establishment of these targets, there are a number of related projects programmed in the TIP that would be expected to contribute to the achievement of these targets. The remainder of this section summarizes the establishment of the targets for the transit asset management and highway safety performance measures, and how the amended 2017-2020 TIP contributes to the targets established for the national performance measures.

### ***Transit Asset Management Targets***

Table 3 shows the short-term targets for the transit asset management performance measures that were established by the Commission in July 2017.<sup>3</sup> The \$144 million of funds programmed in the amended 2017-2020 TIP for capital-related transit preservation projects<sup>4</sup> (such as vehicle capitalized maintenance and replacement projects and facility repair and upgrade projects) are expected to contribute to the

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<sup>2</sup> The Wisconsin Department of Transportation (WisDOT) is responsible for establishing State baseline data and performance targets for each of the highway performance measures, and the Region's transit operators are responsible to establish, for their respective systems, baseline data and performance targets for each of the transit performance measures. For the initial target setting, FHWA and FTA established deadlines for the State and transit operators, respectively, to establish targets for the performance measures. The Commission is required to establish targets for each of the performance measures within 180 days of the establishment of the respective statewide and transit-system wide targets.

<sup>3</sup> The targets established for the transit asset management performance measures are expected to be incorporated into VISION 2050 in the fall of 2018.

<sup>4</sup> Of the \$605 million programmed for transit preservation in the amended 2017-2020 TIP, \$461 million, or 76.2 percent, is for operating-related projects and \$144 million, or 23.8 percent, is for capital-related projects.

Table 2

**National Transportation Performance Measures Developed by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA)**

<b>Funding Program</b>	<b>Performance Measure Areas</b>	<b>Performance Measures</b>	
FHWA Highway Safety Improvement Program (HSIP)	Rate of Fatalities and Serious Injuries	Rate of Fatalities per 100 Million Vehicle Miles Travelled (MVMT)	
		Rate of Serious Injuries per 100 MVMT	
	Number of Fatalities and Serious Injuries	Number of Fatalities	
		Number of Serious Injuries	
FHWA National Highway Performance Program (NHPP)	Condition of Pavements on the Interstate System	Percentage of Pavement of the Interstate System in Good Condition	
		Percentage of Pavement of the Interstate System in Poor Condition	
	Condition of Pavements on the National Highway System (NHS) Excluding the Interstate	Percentage of Pavement of the Non-Interstate NHS in Good Condition	
		Percentage of Pavement of the Non-Interstate NHS in Poor condition	
	Condition of Bridges on the NHS	Percentage of NHS Bridges Classified as in Good Condition	
		Percentage of NHS Bridges Classified as in Poor Condition	
	Performance of the Interstate System	Percentage of the Person-Miles Traveled on the Interstate that are Reliable	
	Performance of the NHS Excluding the Interstate	Percentage of the Person-Miles Traveled on the Non-interstate NHS that are Reliable	
	FHWA National Highway Freight Program (NHFP)	Freight Movement on the Interstate System	Truck Travel Time Reliability Index
	FHWA Congestion Mitigation and Air-Quality Improvement Program (CMAQ)	On-Road Source Emissions	Estimate of Emission Reductions for Projects Funded by CMAQ
Traffic Congestion		Peak Hour Excessive Delay (PHED) Per Capita	
		Percentage of Non-Single Occupancy Vehicles	
FTA Section 53 Funding (including Sections 5307, 5310, 5311, 5337, and 5339)	Transit Asset Management	Percentage of Revenue Vehicles Exceeding the Useful Life Benchmark (ULB)	
		Percentage of Non-Revenue Service Vehicles Exceeding the ULB	
		Percentage of Facilities Exceeding the Transit Economic Requirements Model (TERM) Scale	
		Percentage of Track Segments Having Performance Restrictions	
	Public Transportation Safety Program	Number of Reportable Fatalities	
		Rate of Reportable Fatalities Per Vehicle Revenue Miles	
		Number of Reportable Injuries	
		Rate of Reportable Injuries Per Vehicle Revenue Miles	
		Number of Reportable Events	
		Rate of Reportable Safety Events Per Vehicle Revenue Miles	
		Mean Distance Between Major Mechanical Failures	

Source: Federal Highway Administration and Federal Transit Administration.

**Table 3**  
**Regional Transit Asset Management Targets**

Asset			Performance Measure	Target
Category	Class	Examples		
Rolling Stock	Buses, Other Passenger Vehicles, and Railcars	Bus, Cutaway, Van, Minivan, and Streetcars	Percent of revenue vehicles that have either met or exceeded their useful life benchmark	< 30%
Equipment	Non-revenue service vehicles and equipment over \$50,000	Route Supervisor Vehicles, Maintenance Trucks, Pool Vehicles, DPF Cleaning System, Bus Wash Systems, Fare Collection systems, Vehicle Lifts	Percent of vehicles and equipment that have either met or exceeded their useful life benchmark	< 30%
Facilities	Support	Maintenance and Administrative Facilities	Percent of facilities within an asset class, rated below 3 on condition reporting system	< 15%
	Passenger	Rail Terminals, Bus Transfer Stations	Percent of facilities within an asset class, rated below 3 on condition reporting system	0%
	Parking	Park-and-Ride Lots with Direct Capital Responsibility	Percent of facilities within an asset class, rated below 3 on condition reporting system	0%
Infrastructure	Fixed Guideway	Track Segments, Exclusive Bus Rights-of-Way, Catenary Segments, and Bridges	Percent of segments that have performance restrictions	0%

Source: SEWRPC

achievement of these targets. The capital-related transit preservation projects programmed in the TIP were provided by transit operators based on their processes for monitoring the condition of their vehicles and facilities and prioritizing their maintenance and replacement (given the level of available funding). Transit operators are required by FTA to develop a transit asset management plan to assist in maintaining a state-of-good repair for their vehicles and facilities. These plans are required to be completed by October 1, 2018.<sup>5</sup> It is expected that these plans may result in the refinement of the targets for the transit asset management performance measures. In addition, it is expected that these plans will be considered in the prioritization of projects for the next TIP and subsequent TIPs.

### ***Highway Safety Targets***

Table 4 shows the short-term (years 2014-2018) and long-term (years 2047-2050) targets that have been established for the national highway safety performance measures. The \$58 million in programmed highway safety projects would particularly serve to assist in the achievement of these targets. The projects programmed under this category include projects that were approved for about \$43 million in FHWA Highway Safety Improvement Program (HSIP) funds. The projects approved for HSIP funds are reviewed and prioritized based on their ability to reduce crashes and their achievement of the goals of the State's Strategic Highway Safety Plan. In addition, other projects listed in the TIP—such as transit improvement and expansion, bicycle/pedestrian projects, and highway projects—can also contribute to the achievement of the safety targets. For example, the programmed arterial resurfacing, reconditioning, and reconstruction projects can include elements that reduce the number of crashes, such as improving the roadway cross-section and the horizontal/vertical alignments, adding/modifying signage and pavement markings, and controlling access. In addition, the TIP projects related to the improvement and expansion of transit services and bicycle/pedestrian facilities are expected to reduce the growth in vehicle travel, conflicts, and crashes, as they encourage increased travel on safer facilities and safer services while reducing travel by automobile and demand on the Region's roadways.

### ***Remaining National Performance Targets***

With respect to the remaining performance measures developed by FHWA, the State established targets for the National Highway System (NHS) reliability and pavement/bridge condition measures, the freight reliability measure, and the congestion mitigation and air-quality measures in May 2018. The Commission will establish targets for these measures by November 16, 2018. The next update of the TIP, covering the years 2019-2022, is expected to be completed in a similar timeframe and will include an evaluation of the contribution of relevant projects included in the TIP that would contribute to the achievement of these remaining FHWA targets. With respect to the transit safety performance measures developed by FTA, the Commission will establish targets for these performance measures following the completion of the rule-making by FTA.

While the remaining FTA/FHWA targets have yet to be established, a number of projects in the amended 2017-2020 TIP would be expected to contribute to achieving targets that may be established for these performance measures. For example, projects programmed in the amended TIP for National Highway Performance Program (NHPP) funds particularly target improving the condition of the roadway and bridges on the NHS (both interstate and non-interstate). Similarly, the highway improvement projects (involving the providing of additional travel lanes) programmed for NHPP funds in the amended TIP—such as the Zoo Interchange project, the IH 94 project between Milwaukee and Kenosha Counties, and the STH 50 project between IH 94 and 43<sup>rd</sup> Avenue—would be expected to maintain or improve NHS reliability. Similarly, the Zoo Interchange and IH 94 projects would be expected to maintain or improve

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<sup>5</sup> The Commission staff is assisting a number of transit operators in Southeastern Wisconsin in achieving the transit asset management plan requirements. Principally, the Commission is working with the smaller transit operators (those having less than 100 vehicles) in the Region to prepare group transit asset management plans.

**Table 4****Regional Years 2014-2018 and Years 2046-2050 Targets  
for the National Safety-Related Performance Measures**

<b>Performance Measure</b>	<b>2012-2016 Baseline Data</b>	<b>2014-2018 Target</b>	<b>2046-2050 Target</b>
Number of Fatalities	152.2	147.7	91.9
Rate of Fatalities	0.962	0.922	0.488
Number of Serious Injuries	798.2	721.7	144.1
Rate of Serious Injuries	5.053	4.504	0.766
Number of Non-Motorized Fatalities and Serious Injuries	167.2	154.9	45.7

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



the reliability for freight travel on the interstate system. Additionally, the programmed projects for Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds would be expected to address congestion and air-quality and promote alternatives to travel by automobile. With respect to transit safety, many of the transit preservation-related projects programmed in the amended TIP would be expected to contribute towards maintaining or improving the safe operation and use of transit vehicles and facilities by minimizing exposure and risk by the public and transit operator personnel to potentially unsafe vehicles, equipment, and facilities.

## **SUMMARY AND CONCLUSIONS**

The projects in the amended 2017-2020 TIP are expected to contribute to the achievement of the VISION 2050 transportation-related goals. With respect to the national performance measures, the highway safety, transit, highway, and bicycle/pedestrian projects programmed in the amended TIP are expected to contribute to the targets established by the Commission for the national transit asset management and highway safety performance measures. The 2019-2022 TIP, expected to be completed in November 2018, will include a similar summary of the contribution of programmed projects towards achieving the plan goals and the established FTA/FHWA targets, along with summarizing the contribution of relevant projects in the 2019-2022 TIP towards achieving the targets established by the Commission during the same timeframe for the remaining FHWA performance measures—NHS reliability and pavement/bridge condition, freight reliability, and congestion mitigation and air-quality.

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