

## **MPO 2024 Resolution No. 4**

### **Amendment No. 2 to the 2024-2028 Transportation Improvement Program for the Madison Metropolitan Area & Dane County**

**WHEREAS**, the Greater Madison MPO (Metropolitan Planning Organization) approved the *2024-2028 Transportation Improvement Program for the Madison Metropolitan Area & Dane County* on October 4, 2023; and

**WHEREAS**, the Greater Madison MPO adopted MPO 2023 Resolution No. 16 on December 6, 2023, approving Amendment No. 1; and

**WHEREAS**, federal transportation legislation (IIJA, also known as BIL) and associated federal rules (Title 23, Section 134 U.S.C.) requires that each MPO undertake a transportation planning process that provides for the establishment and use of a performance-based approach to transportation decision making to support national goals while also establishing performance targets that address the performance measures to use in tracking progress toward attainment of critical outcomes for the region; and

**WHEREAS**, the MPO has now established the annual performance targets related to Transit Asset Management (TAM) through MPO 2024 Resolution 3, adopted on April 3, 2024; and

**WHEREAS**, the performance management elements of the federal planning rules require a discussion in the TIP and long-range Regional Transportation Plan (RTP) as to the effect of programmed and planned investments toward achieving the performance targets; and

**WHEREAS**, the approved 2024-2028 TIP included the required analysis of the anticipated effect of the TIP toward achieving the federal performance measure targets in Attachment E, but the analysis needs to now be revised to include the new annual TAM performance targets adopted by the MPO; and

**WHEREAS**, the Madison Metropolitan Planning Area transportation projects and certain transportation planning activities to be undertaken using Federal funding in 2024–2027 must be included in the effective TIP; and

**WHEREAS**, an amendment is needed to increase federal Section 5310 Small Starts program funding for Dane County's Travel Training Program; and

**WHEREAS**, an amendment is needed to add the approved Carbon Reduction Program (CRP) LED streetlight fixture conversion projects sponsored by the cities of Fitchburg, Madison, Monona, Middleton, and Sun Prairie; and

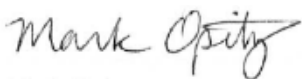
**WHEREAS**, the MPO's public participation procedures for minor TIP amendments such as this have been followed; and

**WHEREAS**, the new and revised projects are consistent with *Connect Greater Madison: Regional Transportation Plan 2050*, the long-range regional transportation plan for the Madison Metropolitan Planning Area as adopted on May 11, 2022:

**NOW, THEREFORE, BE IT RESOLVED** that the Greater Madison MPO approves an amendment to the *2024-2028 Transportation Improvement Program for the Madison Metropolitan Area & Dane County*, revising Attachment E to the TIP (attached to this resolution) modifying the required discussion of the anticipated effect of the TIP in meeting the required federal performance measure targets to include the adopted annual targets for TAM measures, and making the following project additions and revisions as shown on the attached project listing table:

1. **REVISE** the Dane County Travel Training Program on page 28 of the Transit Operating Projects section, increasing federal Section 5310 funding.
2. **ADD** the City of Fitchburg’s LED Streetlight Fixture Conversion project to page 39 of the Street/Roadway Projects section.
3. **ADD** the City of Madison’s LED Streetlight Fixture Conversion project to page 41 of the Street/Roadway Projects section.
4. **ADD** the City of Middleton’s LED Streetlight Fixture Conversion project to page 43 of the Street/Roadway Projects section.
5. **ADD** the City of Monona’s LED Streetlight Fixture Conversion project to page 43 of the Street/Roadway Projects section.
6. **ADD** the City of Sun Prairie’s LED Streetlight Fixture Conversion project to page 46 of the Street/Roadway Projects section.

April 3, 2024  
Date Adopted

  
Mark Opitz, Chair, Greater Madison MPO



**Table B-2**  
**Summary of Federal Funds Programmed (\$000s) and Those Available in Year of Expenditure Dollars**  
**in the Madison Metropolitan Planning Area**

Funding Source		Programmed Expenditures					Estimated Available Funding				
Agency	Program	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Federal Highway Administration	National Highway Performance Program	37,281	34,951	51,293	35,919	10,768	37,281	34,951	51,293	35,919	10,768
	Bridge Replacement and Rehabilitation	777	1,304	4,067	0	0	777	1,304	4,067	0	0
	Surface Transp. Block Grant Program - Madison Urban Area	1,032	8,238	18,973	12,341	2,925	1,032	8,238	18,973	12,341	2,925
	Surface Transp. Block Grant Program - State Flexibility	2,200	4,545	3,352	0	5,956	2,200	4,545	3,352	0	5,956
	Surface Transp. Block Grant Program - Transp. Alternatives	2,368	1,437	1,191	183	4,036	2,368	1,437	1,191	0	0
	Highway Safety Improvement Program	2,969	3,130	0	1,999	0	2,969	3,130	0	1,999	0
	<b>Carbon Reduction Program</b>	<b>1,100</b>	<b>unknown</b>	<b>unknown</b>	<b>unknown</b>	<b>unknown</b>	<b>1,100</b>	<b>unknown</b>	<b>unknown</b>	<b>unknown</b>	<b>unknown</b>
Federal Transit Administration	Section 5307 Urbanized Area Formula Program	15,090	14,071	14,419	14,777	15,144	15,090	14,071	14,419	14,777	15,144
	Sec. 5339 Bus & Bus Facilities	40,897	1,978	2,027	2,077	2,129	40,897	1,978	2,027	2,077	2,129
	Sec. 5337 State of Good Repair	1,325	922	945	969	993	1,325	922	945	969	993
	<b>Sec. 5310 E/D Enhanced Mobility Program</b>	<b>410</b>	0	0	0	0	<b>410</b>	489	499	509	519
	Sec. 5311 Rural Area Formula Program	1,477	1,514	1,551	1,590	1,629	1,477	1,514	1,551	1,590	1,629
	Sec. 5314 NRP, Sec. 5339 Alt. Analysis Program	0	0	0	0	0	0	0	0	0	0
	Areas of Persistent Poverty	670	0	0	0	0	670	0	0	0	0
	CARES/ARPA	19,679	0	0	0	0	19,679	0	0	0	0

\* Fifth year of funding (2028) is informational only.

\*\* Funding shown in calendar year versus state fiscal year.

Note:

All state roadway projects using applicable funding sources (e.g., NHPP, STBG State Flexible, BR) are programmed through 2028. Local BR, STBG (BR), and STBG Rural projects are programmed through 2027. HSIP (other than annual small HES program) projects are programmed through 2027. Local STBG -Transp. Alternatives projects are programmed through 2029. Local STBG-Urban (Madison Urban Area) projects are programmed through 2029. Transit funding is not yet programmed and is based on needs and anticipated future funding levels (See also Table B-4 Metro Transit System Projected Expenses and Revenues). Programmed transit funding for 2024 excludes carryover projects for which the Federal funding is already obligated. Roadway and transit inflation rate @ 2.48% per year applied to expenses, except for the STBG-Urban program.

# Attachment E: Analysis of Anticipated Effect of TIP Toward Achieving Federal Performance Measure Targets

## Introduction

### Performance-Based Planning and Programming

The most recent three federal transportation bills, MAP-21, FAST ACT, and now Infrastructure Investment & Jobs Act (IIJA), require incorporation of performance-based planning and programming into the development of Metropolitan Planning Organization (MPO) Long-Range Regional Transportation Plans (LRTP) and Transportation Improvement Programs (TIP). The goals of the new performance management process are to make the most efficient use of federal transportation funds, refocus on national goals, increase accountability and transparency, and improve decision-making.

Federal performance measures have been established to track progress in achieving national goals, which include the following:

- **Safety** - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- **Infrastructure Condition** - To maintain the highway infrastructure asset system in a state of good repair
- **Congestion Reduction** - To achieve a significant reduction in congestion on the National Highway System (NHS)
- **System Reliability** - To improve the efficiency of the surface transportation system
- **Freight Movement and Economic Vitality** - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability** - To enhance the performance of the transportation system while protecting and enhancing the natural environment

The Greater Madison MPO (Metropolitan Planning Organization), the MPO for the Madison Metropolitan Area, has made significant progress in the transition to performance-based planning and programming. The MPO has tracked transportation system performance measures for many years and included its first official list of measures in its 2035 Regional Transportation Plan (RTP) Update adopted in 2012. The MPO also developed a list of congestion and reliability measures in its [Congestion Management Process](#) (CMP) adopted in 2011, and tracked those for which data was readily available. That CMP has now been replaced by an updated one with a scaled back list of measures that was included as part of the [Connect Greater Madison: 2050 Regional Transportation Plan](#), adopted in May 2022. The *Connect Greater Madison* Plan maintains the same core six goals from the previous RTP, which are consistent with the national goals above, and a revised set of performance measures tied to these goals. Based on both quantitative and qualitative analyses, the multi-modal set of recommended transportation facility and service investments in the *Connect Greater Madison* Plan were selected based on

these goals and measures. These performance measures will also be used to track progress in achieving the goals over time. See Appendix B: System Performance Report in the plan.

The MPO began publishing an annual Performance Measures report in 2016 for 2015 baseline data to gauge progress in achieving the RTP goals and fulfill federal performance management requirements. A link to the 2020 report for 2019 data is at [https://www.greatermadisonmpo.org/trends/documents/2019PMR\\_FinalWeb.pdf](https://www.greatermadisonmpo.org/trends/documents/2019PMR_FinalWeb.pdf). The report for 2019 incorporates the federal measures along with numerous other regional measures tied to RTP 2050 goals. Due to the impacts of the COVID-19 pandemic in 2020, the MPO collected and reported required data for the federal performance measures, but did not produce a Performance Measures Report for 2020. The MPO transitioned to publishing an [online interactive performance measures dashboard](#) in 2023.

The MPO revised its set of project scoring criteria for the Surface Transportation Block Grant (STBG) – Urban program in 2023 (see Appendix A of the TIP) and for the Transportation Alternatives Program (TAP) in 2021 for use in evaluating and prioritizing projects for funding the MPO receives from those federal programs. Both sets of criteria rely heavily on quantitative scoring guidelines that are tied to RTP goals.

The performance measures established by FHWA and FTA were developed to measure the effectiveness of the following federal funding programs:

Federal Transportation Performance Measures	
Performance Measure Area	Performance Measures
FHWA Highway Safety Improvement Program (HSIP)	
Number of Fatalities and Serious Injuries	Number of Fatalities
	Number of Serious Injuries
	Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries
Rate of Fatalities and Serious Injuries	Rate of Fatalities per 100 Million Vehicle Miles Travelled (MVMT)
	Rate of Serious Injuries per 100 Million Vehicle Miles Travelled (MVMT)
FHWA National Highway Performance (NHPP) and Surface Transportation Block Grant (STBG) Programs	
Condition of Pavements on the Interstate System	Percentage of Pavement of the Interstate System in Good Condition
	Percentage of Pavement on 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 System in Good Condition
	Percentage of Pavement of the Non-Interstate NHS System 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
FTA Section 53 Funding (5307, 5310, 5311, 5337, 5339)	
Transit Asset Management (TAM)	Percentage of Revenue Vehicles Exceeding Useful Life
	Percentage of Non-Revenue Service Vehicles Exceeding Useful Life
	Percentage of Facilities Exceeding the Transit Economic Requirements Model (TERM) Scale
	Percentage of Track Segments Having Performance Restrictions
Public Transportation Agency Safety Program (PTASP)	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 Safety Events
	Rate of Reportable Safety Events Per Vehicle Revenue Miles
	Mean Distance Between Major Mechanical Failures

### Setting Targets for Performance Measures

Under the federally required performance management process, targets must be set for each of the federal performance measures. States must then report to the U.S. Department of Transportation (USDOT) on progress in achieving the targets on a schedule specific to each measure. At the state level, there are funding implications in cases where progress is not being made on a particular measure. State departments of transportation (DOTs) and transit agencies are to first set their performance measure targets in coordination with MPOs. In the case of DOT targets, MPOs may either choose to support the state targets or establish their own targets. In the case of the transit agency targets, MPOs may adopt the same targets or establish their own.

Given the limited amount of historical data for most of the measures, impact of COVID-19 on travel and uncertainty in what trends the data may show moving forward, and the limited amount of funding the MPO controls, the Greater Madison MPO has elected to support the state/transit agency targets for these measures, and to plan and program projects to contribute towards meeting these targets. The MPO adopted WisDOT's 2023 safety targets on February 1<sup>st</sup>, 2023 through Greater Madison MPO 2023 Resolution No. 3, in addition to also adopting WisDOT's 2023 and 2025 targets for interstate pavement condition, non-interstate NHS pavement condition, bridge condition, Interstate Reliability, non-interstate NHS

reliability, and freight reliability measures through Greater Madison MPO 2023 Resolution No. 4. The MPO will likely adopt its own safety targets in early 2024 as part of developing a Regional Safety Action Plan. While the MPO supports the state targets, the MPO reports annually the Madison Metropolitan Area or Dane County data for all of the federal measures and the prior year performance and overall trend as part of its annual Performance Measures monitoring process.

The MPO intends to continue to support the Metro Transit targets for transit asset management (TAM) and for the Public Transportation Agency Safety Plan (PTASP) since Metro is the agency with expertise to best manage its assets in light of funding challenges and addressing safety. The MPO adopted the 2023 TAM and PTASP targets in November 2022 through Greater Madison MPO 2022 Resolution No. 13, and will adopt updated targets after Metro updates theirs.

#### Linkage of Investments to Performance Measures

The federal rules for metropolitan transportation planning require that the RTP and TIP shall include, to the maximum extent practicable, a description of the anticipated effect of the RTP and TIP toward achieving the federal transportation system performance measure (see 23 CFR 490) targets established, thereby linking investment priorities to those performance targets (23 CFR 450.326(d)).

The following section outlines the federal performance measures and current performance at the state and Madison Metropolitan Area/Dane County level, and then discusses how the projects programmed in the TIP and supporting regional transportation planning activities will assist in achieving the federal measure targets. It is anticipated that this analysis will evolve over time as methods are developed to better quantify the impacts of projects on the federal performance measures.

## **Federal Performance Measures and TIP Analysis**

### *Safety*

#### Performance Measures and Data

The safety measures and the WisDOT/MPO targets for 2024 are identified in the table below.

Performance Measure	2024 Target	Dane County	
		2018-2022 Average	% Change from 2017-2022
Number of Fatalities	Reduce by 2% (600.8 or less)	36.0	3.%
Fatality Rate*	Reduce by 2% (.934 or less)	Data Not Yet Available	Data Not Yet Available
Number of Serious Injuries	Reduce by 2% (3095.6 or less)	196.0	-3.4%



Serious Injury Rate*	Reduce by 2% (4.822 or less)	Data Not Yet Available	Data Not Yet Available
Number of Non-Motorized Fatalities and Serious Injuries	Reduce by 2% (379.4 or less)	40.4	-7.4%
* Per 100 Million Vehicle Miles Traveled			

### Highway Safety Improvement Program (HSIP) Project Prioritization

WisDOT evaluates potential HSIP projects by comparing the estimated crash reduction benefits expected from the project with the cost of that project. Crash reduction benefits are estimated by multiplying up to two crash modification factors (CMFs) by five years of observed crash data. CMFs and target crashes are identified by the Safety Analyst software and a spreadsheet tool developed by WisDOT to calculate the estimated crash reduction benefits. The projects approved for HSIP funding 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. WisDOT is responsible for all HSIP project programming.

### HSIP Project Analysis

Eleven (11) projects in the MPO Planning Area will receive Highway Safety Improvement Program (HSIP) funding, including:

- A new roundabout at STH 19 and Westmount Drive in Sun Prairie
- A new roundabout at CTH B/CTH AB as part of the USH 51 project
- S. Syene Road Intersection reconfiguration and Reconstruction
- Monotube traffic signals and left turn lane extension on STH 19 and the USH 151 interchange
- Gammon Road and Watts Road intersection improvements
- Mineral Point Road and S. High Point Road intersection improvements
- S. Whitney Way and Odana Road intersection improvements
- Three intersection improvements along Main Street in Sun Prairie
- Two intersection improvements along Winsor Street in Sun Prairie
- Vinburn Road and N. Towne Road Intersection improvements in DeForest
- Two (2) HSIP-funded rail warning device projects, at CTH AB/Buckeye Road in Madison and East South Street in Stoughton

### Non-HSIP Projects

Safety is an important consideration in the scoping process of all projects included in the TIP. Resurfacing, recondition, and reconstruction projects can include elements that improve the safety performance of roadways, such as correcting geometric design deficiencies, improved pavement traction, improved traffic flow and improved pavement markings and signage. Pedestrian and bicycle infrastructure improvements help to separate vulnerable roadway users from automobile traffic. FHWA's [Crash Modification Factors \(CMF\) Clearinghouse](#) can provide a comprehensive overview of the potential safety benefit of any roadway improvement.

There are four major infrastructure projects that will add capacity and improve safety:

- USH 51 (Stoughton to McFarland) (Jackson Street to Roby Road) – This portion of Segment 2, Section 2 of the USH 51 (Stoughton to McFarland) project will be expanded to a four-lane cross-section with a ten-foot wide path on both sides of the highway.
- USH 51 (Stoughton to McFarland) (Roby Road to CTH B) -- This portion of Segment 3, Section 1 of the USH 51 (Stoughton to McFarland) project will be expanded to a four-lane cross-section with a ten-foot wide path on both sides of the highway.
- CTH M (Oncken Rd. to Willow Rd.) – This section of CTH M, which is heavily congested during weekday commute periods, will be expanded to a four-lane cross-section with bike lanes, an off-street trail, intersection improvements (including at CTH K), and driveway consolidation. Rear-end crashes at the intersections is the predominant crash type, which will be addressed with the project.
- Pleasant View Rd. (USH 14 to Timber Wolf Trail) – The first phase of this roadway reconstruction project will expand the road to a four-lane divided cross-section with bike lanes, an off-street path and ped/bike bridge crossing at an existing path, and correct vertical and horizontal curve deficiencies that create safety problems.

There are multiple other programmed roadway projects, which will improve safety through intersection improvements such as addition of turn lanes and signalization, addition of bike facilities, improved pedestrian crossings, and/or other safety enhancements.

The 2024-2028 TIP contains three federally funded pedestrian/bicycle education programs: Transportation Alternatives program funded Dane County Safe Routes to School (SRTS) program and separate City of Madison SRTS program and the STBG-Urban funded City of Madison Pedestrian & Bicycle Safety Education program. In addition to education, the City of Madison funds a Safe Routes to School infrastructure program.

Safe Streets Madison/Safe Streets for All Grant Projects– Safe Streets Madison is a locally funded project sponsored by the City of Madison with the goal of eliminating fatal crashes. Madison was also awarded a planning grant through the Safe Streets and Roads for All program, and is seeking additional federal funding through the program for infrastructure improvements.

### Planning Analysis

The MPO completed a Phase 1 intersection safety analysis with the help of the UW-TOPs Lab for all arterial and collector intersections in Dane County. The safety analysis ranked intersections by frequency, rate, and severity of crashes. This analysis flagged intersections with over-represented crash histories for further detailed study and potential safety improvements. A second phase of this analysis was completed in 2021 with an updated, expanded crash prediction model and use of 2017-'19 data, which resulted in an updated ranking of intersections. The Phase 2 analysis also included intersections of two state highways, which had been excluded from the Phase 1 analysis. The TOPS Lab also developed a diagnostics tool to prioritize intersections based on available funding and other inputs. The MPO also worked with the TOPS lab to develop a regional High Injury Network (HIN).

The MPO is working with a consultant team to develop a Regional Safety Action Plan, building on the work to date with the UW TOPS Lab and the work of the Dane County Traffic Safety Commission (TSC). This will allow preparation of a regional implementation grant application under the new federal Safe Streets for All program. The MPO plans to work with its consultant for the regional plan and area communities to submit a regional grant application under that program next year.

The City of Madison has added safety as a major factor in prioritizing street projects along with pavement and utility condition, using data from the MPO’s study. The city also hired a firm to identify potential HSIP projects, evaluating its high crash severity intersections. The city has also completed a Vision Zero Action Plan, which includes multiple strategies and identifies safety projects. Project implementation has already begun, including reducing speed limits on arterial streets and improving pedestrian crossing facilities at select intersections. The MPO awarded Transportation Alternatives program funding to the City of Sun Prairie to develop its own comprehensive Vision Zero Action Plan.

The MPO is an active member of the Dane County TSC. The TSC meets quarterly to review traffic crash data in order to enhance the level of safety on all public roadways in Dane County for all roadway users. The TSC is comprised of representatives including planners and engineers, law enforcement, medical professionals and other interested community participants to foster a coordinated effort to address the “4 E’s” of road safety: Education, Enforcement, Engineering, and Emergency Care. The MPO assists with compiling crash statistics and facilitating the crash incidence review. The MPO is currently assisting with a project to implement recommendations for how the TSC reviews and acts on crash trends and to develop a coordinated 4 E program to address regionally identified data-driven traffic safety concerns, including impaired driving, risky driving behaviors, vulnerable roadway users, and equity.

### *Bridge Condition*

#### Performance Measures and Conditions Data

The table below shows the current WisDOT/MPO targets and current conditions in the Madison Metro Area for NHS bridges in good and poor condition.

Performance Measure	2- Year Target (2023)	4-Year Target (2025)	Madison Metro Area (2022)
Percentage of NHS Bridges in Good Condition	>49%	> 48%	45%
Percentage of NHS Bridges in Poor Condition	< 3%	< 3%	<1%

## Project Analysis

The 2024-2028 TIP contains 9 projects in the MPO planning area that will repair or replace bridges or bridge decks as part of their scope, including:

- STH 113 (Knutson Drive to STH 19) – Bridge repairs.
- CTH M (Pheasant Branch Creek – B-13-0046) -- Replace bridge and construct bike underpass.
- John Nolen Drive (North Shore Drive to Olin Avenue) – Replace or rehab eight bridges as part of two-phase reconstruction project.

## *Pavement Condition*

### Performance Measures and Conditions Data

The table below shows the current WisDOT/MPO targets and percentage of Interstate and non-Interstate NHS lane-miles in good and poor condition. “Good condition” suggests no major investment is needed. “Poor condition” suggests major reconstruction investment is needed.

Performance Measure	2- and 4- Year (2023 and 2025) Target*	Madison Metro Area (2021)
Percentage of Interstate Pavement in Good Condition	> 60%	51%
Percentage of Interstate Pavement in Poor Condition	< 4%	0%
Percentage of Non-Interstate NHS Pavement in Good Condition	> 30%	23%
Percentage of Non-Interstate NHS Pavement in Poor Condition	< 10%	6%
*Same target for two- and four-year target		

## Project Analysis

The Madison MPO Planning Area (MPA) contains a total of 158 NHS Interstate Highway lane miles, 472 non-Interstate NHS US/State highway lane miles, and 238 local road/CTH NHS lane miles. The 2024-2028 TIP contains 40 projects that will be reconstructed (and in some cases expanded or extended) in the planning area, and 55 projects that will be resurfaced or reconditioned in the planning area.

## *Travel Time Reliability and Freight Movement*

### Performance Measures and Conditions Data

The table below shows the current WisDOT/MPO target level of travel time reliability for both the Interstate and non-Interstate NHS system.

Performance Measure	2- Year Target (2023)	4-Year Target (2025)	Madison Metro Area (2021)
Percentage of Person-Miles Traveled on the Interstate that are Reliable	92.5%	93%	100%
Percentage of Person-Miles Traveled on the Non-Interstate NHS that are Reliable	91%	89.5%	91%

The percent of person-miles traveled with unreliable travel times in the Madison Metro area on the non-Interstate NHS system exceeds the four-year target. Even still, the relatively high percentage of the Madison area system that meets the reliability measure is skewed by the 4-hour peak periods used for the federal measure. The AM and PM peak periods in Madison are 60 or 90 minutes at most.

The table below shows the existing WisDOT/MPO target truck travel time reliability index (on the Interstate system) targets.

Performance Measure	2- Year Target (2023)	4-Year Target (2025)	Madison Metro Area (2021)
Truck Travel Time Reliability Index	1.3	1.3	1.2

The 2021 data shows that the Madison Metro area currently meets the two-and four-year targets for freight travel time reliability on the Interstate system. An index of 1.2 indicates a high reliability of system performance. The Interstate typically only experiences heavy congestion and slower travel times on summer Friday nights and Sundays due to tourist traffic.

### Project Analysis

Six projects comprising approximately 27 lane miles of roadway in the Madison Metropolitan Area will add travel lanes and therefore improve travel time reliability. The most significant programmed projects in terms of improving travel time reliability are the CTH M (STH 113 to Oncken Rd.) expansion project including improvements to the CTH K intersection, and the Pleasant View Road (USH 14 to Timber Wolf Trail) expansion project.

The 2024-2028 TIP contains 30 projects that will include a transportation systems management (TSM) component. The goal of these projects is to maximize the efficiency, safety, and utility of the transportation infrastructure. TSM considers the full range of options for maximizing the performance of existing transportation infrastructure without expanding the infrastructure itself

(e.g., adding general purpose lanes, etc.). TSM strategies can include physical changes to the roadway, changes to how the roadway is used, and efforts aimed at reducing demand for use of the roadway (travel demand management). Most of the TSM projects listed in the 2024-2028 TIP are intended to increase vehicle throughput at intersections and reduce average delay along with improving safety. The following are examples of TSM projects in the 2024-2028 TIP:

- USH 51 roundabout to be added at CTH B intersection in Stoughton;
- S. Syene Road/McCoy Road Intersection Reconfiguration and Reconstruction from W. Clayton Road to McCoy Road;
- STH 19 improvement at USH 151 Interchange; and
- MPO TDM program (“RoundTrip”), which includes employer based programs and an online transportation matching service that allows commuters to quickly find carpool partners, vanpool options, bike buddies, transit routes, and park and ride lots based on their specific circumstances.

Planning Activities

The MPO completed an update to its Congestion Management Process (CMP) in conjunction with the RTP Update. Part of the analysis for the update included purchase of StreetLight Analytics travel time data used to help identify bottlenecks that might be alleviated through lower cost intersection improvements and TSM strategies. StreetLight data will be used moving forward to assess the impacts of major TSM projects.

*Transit Asset Management*

Performance Measures and Conditions Data

Metro Transit completed and certified its initial Transit Asset Management (TAM) Plan in December 2018. The plan is considered a “living document” with reviews and revisions planned on an annual basis. The initial plan incorporated Metro’s initial 2019 TAM performance measure targets for the applicable measures, which relate to the different assets, including equipment (non-revenue vehicles), rolling stock (revenue vehicles), and facilities. Metro’s TAM targets did not change for 2020-’21 or 2021-’22; Metro updated TAM targets for 2023. The MPO adopted the same 2021-’22 targets that Metro adopted via the resolution referenced above. The MPO adopted the updated 2023 targets in November 2022 via Resolution No. 13.

The table below shows the 2023 Metro/~~Draft~~ MPO targets, ~~2022-2023~~ performance, and 2020 baseline conditions for Metro Transit for the three TAM performance measures related to buses, non-revenue service vehicles, and facilities, which for purposes of the TAM plan are Metro’s bus maintenance facilities at 1 South Ingersoll (formerly 1101 E. Washington Avenue) and 3829/3901 Hanson Road. ~~Metro has adopted a TAM target of having a TERM rating for the Hanson Road facility of 4.~~

Performance Measure	Baseline (2020)	Performance (2023 <del>2</del> )	Target (2023)
---------------------	-----------------	----------------------------------	---------------

Percentage of Rolling Stock (Buses) that Have Met or Exceeded their Useful Life	14%	<del>15</del> 8%	11%
Percentage of Non-Revenue Service Vehicles that Have Met or Exceeded their Useful Life	55%	<del>69</del> 58%	38%
Percentage of Facilities with a Condition Rating Below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale.	100%	0%	0%
<u>TERM rating for Ingersoll Street facility</u>	<u>2.0</u>	<u>3.7</u>	<u>4.0</u>
TERM rating for Hanson Road facility	NA	<del>3.9</del> 3.8	4.0

For buses, a 2023 target was set of having 11% of Metro’s inventory exceed the useful life benchmark (ULB) of 14 years. As of ~~September 2022~~December 2023, ~~81~~5% of Metro’s bus fleet exceeded the ULB. Metro uses 14 years as the ULB rather than the federal minimum of 12 years because Metro uses the oldest buses for school and other peak period only service and as reserves, thus limiting the number of miles on buses as they age. ULB performance improved from 2020-’21 because fleet transition to include new 60’ articulated buses involves disposing of five additional 40’ buses each year. The bus replacement plan calls for the annual replacement of 15 buses based on age and condition. With BRT and the Route Redesign projects, a fleet analysis was conducted and Metro will require fewer 40’ buses in the future so the inventory reduction process continued in 2023 with the disposal of 23 buses. The new bus delivery was delayed until 2024, so even with these disposals, the performance measure target was not met. The inventory will change dramatically later in 2024 as 62 fully electric 60’ articulated buses will be delivered by September 2024. These factors resulted in decreased fleet size and a younger average vehicle age.

~~2023 TAM targets for revenue vehicles did not change, and with changing inventory for BRT and Network Redesign projects five additional vehicles were disposed of, which lowered the percentage of vehicles past the Useful Life Benchmark (ULB) of 14 years to 8%, well below the 11% target.~~ Metro lengthened the ULB for non-revenue trucks from eight years to ten based on historic use and longevity of this vehicle type in 2022. Although two new vehicles were purchased in 2022, they were not delivered that year, and Metro did not meet their 38% of vehicles beyond their ULB target in 2022. Based on a 2023 inventory analysis, there will be at least two non-revenue vehicles replaced annually, which will aid in complying with the performance targets. The replacement of non-revenue vehicles occurred in 2023 with the addition of 16 vehicles and due to late deliveries, the four vehicles scheduled for disposal in 2023 were delayed until early 2024. The increase in vehicles was necessary due to the 2023 route redesign.

~~Facility TAM targets will not change in 2023, but the addition of the new Hanson Road facility and continued upgrades at the Ingersoll facility (formerly East Washington) improved Metro’s performance to better than 3.0 (Adequate) on the TERM scale, but they do not yet meet the goal of 4.0 on the TERM scale. They will once the ongoing work on both facilities is completed.~~

~~For non-revenue service vehicles, a 2023 target was set of having 38% of Metro’s inventory exceed the ULB of 8 years. As of September 2022, 69% of Metro’s inventory of cars, trucks, and vans exceeded their ULB. Metro developed a long-range strategic replacement plan for non-~~

revenue vehicles in 2019, with the intention of replacing two vehicles each year; however, due to the COVID-19 pandemic, Metro did not replace any non-revenue service vehicles in 2020, which resulted in an increase in the percentage of vehicles over their useful life. Two vehicles, including a very old van, were disposed of in 2021; two vehicles are on order in September 2022, but until they are delivered later this year or in 2023 they will decrease the average age of the fleet. Metro also increased the ULB for trucks in 2022 from 8 to 10 years due to their use and longevity.

For TAM performance measure purposes, Metro's maintenance facilities are located at 1 South Ingersoll (formerly 1101 East Washington Avenue) and at 3829/3901 Hanson Road. Metro has adopted a TAM target of a TERM rating of 4, with 0% of facilities rated under 3. Facility TAM targets did not change in 2023, but the addition of the new Hanson Road facility and continued upgrades at the Ingersoll facility (formerly East Washington) improved Metro's performance to better than 3.0 (Adequate) on the TERM scale, although they do not yet meet the goal of 4.0 on the TERM scale. They will achieve this target once the ongoing work on both facilities is completed.

~~The target is to have 0% of facilities rated under 3.0 (Adequate) on the TERM scale.~~ In 2020, the Metro facility at South Ingersoll (then their only facility) was rated 2.5. It had been rated 1.0 (Poor), but repairs and upgrades have recently been made, including roof repairs in 2018 and a new wash bay in 2019. Construction on phased upgrades continue, with the fall 2022 TERM rating at 3.6. ~~Metro has purchased a new satellite facility on Hanson Road, which is under construction and has a current TERM rating of 3.9. Since the facility will be in operation for at least 20 years, Metro adopted a target goal of a 4.0 TERM rating for this facility. It is anticipated that the ongoing remodel of this facility will result in meeting this goal.~~

### Project Analysis

Metro Transit has programmed funds to continue adhering to its current bus replacement schedule of 15 buses per year. If Metro had been able to maintain this schedule, the percentage of buses at or past their ULB would have met or dropped below the 11% target by 2021; however, Metro was not able to add new electric buses as scheduled in 2020 and retained a bus scheduled for disposal to use in the interim. Increasing the fleet size by retaining a vehicle past its ULB negatively affected this performance measure in 2020 and exacerbated the measure in 2021 as the entire fleet aged, but the 2022 bus replacement brought this measure under the 11% target to 8%. The fleet transition plan to prepare for BRT and the Network Redesign will result in reducing the number of older 40' buses, and replace them with 60' articulated buses, which will further reduce the percentage of the fleet beyond their ULB.

Metro's replacement plan for service vehicles is more flexible with funding allocated each year and a decision made annually on which vehicles to replace based on age, repair history, and any anticipated major repairs. It is less certain whether Metro will be able to meet its performance target for service vehicles based on the funding currently programmed. Due to the combined need to make facility repairs and the unexpected costs associated with the COVID-19 pandemic, these purchases did not take place in 2020.



Metro’s maintenance facility at 1 South Ingersoll (formerly 1101 E. Washington Avenue) has been in need of major renovation. It is also over capacity, having been designed to serve 140 buses, but servicing as many as 220 buses in 2021. The facility has had no significant upgrades since it was built 40 years ago, until renovations began in 2018. Investment in the facility was delayed for years in anticipation of a relocation, but a full relocation of the facility is no longer being considered. Facility and functional issues included: inadequate ventilation, heating, and cooling; an open-air wash line creating air quality problems; needed upgrades to emergency egress lighting; confined number of work bays and poor space layout; and right-turn vs. desired left-turn circulation for buses.

A facility renovation plan was developed with the assistance of an engineering firm, Mead & Hunt, with improvements to be implemented in four phases starting in 2019 through 2025. Roof repairs were already made. Because of the need to use its federal formula funding for buses and capital maintenance, the facility renovation will be 100% locally funded.

Implementation of the programmed facility renovation plan will allow the facility to meet the federal performance measure target. An inventory and condition assessment completed in 2022 reflects the impact of ongoing repairs and upgrades on meeting the facility TAM performance target, with the TERM rating increasing from 1.0 to 2.0 in 2019, to 2.5 in 2020, ~~and~~ to 3.6 in 2022, and 3.7 in 2023.

## *Public Transportation Agency Safety Plan*

### Performance Measures and Conditions Data

Metro Transit completed and certified its initial Public Transportation Agency Safety Plan (PTASP) in July 2020. The plan is considered a “living document” with reviews and revisions planned on an annual basis. The initial plan incorporated Metro’s initial 2020 PTASP performance measure targets for the applicable measures. The MPO adopted the same 2020 targets that Metro adopted in the above referenced resolution, which remained unchanged in 2021. Metro updated its PTASP performance measure targets for 2022 in July, 2022; the MPO adopted the updated 2022 targets via MPO 2022 Resolution No. 13 in November.

The Metro/MPO Safety Performance Targets for 2022 included reductions in the Bus Transit targets for Injuries and Safety Events, as well as modifying the way the System Reliability/State of Good Repair measurement is reported to improve consistency with other measures. The 2022 targets are shown in the table below, with actual performance. 2023 PTASP targets are unchanged from 2022 targets. 2024 targets will be updated following FTA’s adoption of new performance measures consistent with the IIJA/BIL. The seven proposed performance measures are: Collision Rate, Pedestrian Collision Rate, Vehicular Collision Rate, Transit Worker Fatality Rate, Transit Worker Injury Rate, Assaults on Transit Workers, and Rate of Assaults on Transit Workers. These additions are consistent with the Bipartisan Infrastructure Law’s increased focus on bus collisions and transit worker safety. Additionally, BRT will have its own targets, as a separate mode of transit in addition to Bus Transit and Paratransit.

<b>Transit Safety Performance Targets 2022 – Actual vs Target</b>
-------------------------------------------------------------------

<b>Mode of Service</b>	<b>Fatalities (total)</b>	<b>Fatalities (per 100,000 VRM)</b>	<b>Injuries (total)</b>	<b>Injuries (per 100,000 VRM)</b>	<b>Safety Events (total)</b>	<b>Safety Events (per 100,000 VRM)</b>	<b>System Reliability/ State of Good Repair (per 100,000 VRM)</b>
Bus Transit Actual	0	0	6	.12	293	5.77	6.05
Bus Transit Targets	0	0	10	.15	300	5.91	4
Paratransit Actual	0	0	0	0	8	.97	0
Paratransit Targets	0	0	1	.15	20	3.07	1.82

*Fatalities = Any fatal accident involving a Metro Transit vehicle regardless of fault*

*Injuries = Any occurrence resulting in a person transported from the bus via ambulance*

*Safety Events = any accident, incident, or occurrence*

*VRM = vehicle revenue miles*

*System Reliability = VRM between on-road, mechanical failure*

In addition to updating safety-related performance measure targets, Metro’s 2022 PTASP Annual Review addressed new requirements included in the BIL/IJJA.

As a result of these new requirements, Metro’s safety planning team, management team and the Teamsters Union Local No. 695 created a new safety committee composed of frontline employees and management. The new team is responsible for identifying, recommending, and analyzing the effectiveness of risk-based mitigations or strategies to reduce consequences identified in the agencies’ safety risk assessment.

Metro’s safety coordinator developed safety training for Maintenance employees which includes the required topic of de-escalation. Metro already has a comprehensive new hire and refresher staff training program for its bus operators. De-escalation training was added to this program in November of 2021.

The FTA plans to update the National Public Transportation Safety Plan to provide additional information on how agencies can meet the new requirement for safety performance targets. However, performance targets for a risk reduction program are not required to be in place until FTA has updated the National Public Transportation Safety Plan to include additional performance measures required by the BIL/IJJA.

Due to supply change issues and problems with the new 2022 fleet, Metro had a large number of newer buses that had to sit waiting for parts and repairs, therefore they were running older buses on main routes at times, which contributed to the higher number of break downs that caused service interruptions. Metro added fifteen new buses to its fleet in 2022, and retired fifteen older buses.

### Project Analysis

Safety-related projects in the Transit Capital and Transit Operating categories include preventative maintenance of transit vehicles, which is fundamental to meeting the System Reliability target, and facility renovations at Metro's maintenance facility at 1 South Ingersoll (formerly 1101 E. Washington Avenue), which has been in need of major renovation. It is over capacity, having been designed to serve 140 buses, but servicing as many as 220 buses in recent years. Until 2019, the facility had no significant upgrades since it was built 40 years previously. Investment in the facility was delayed for years in anticipation of a relocation, but that is no longer anticipated. Prior to recent upgrades, facility and functional issues included: inadequate ventilation, heating, and cooling; an open-air wash line creating air quality problems; needed upgrades to emergency egress lighting; confined number of work bays and poor space layout; and right-turn vs. desired left-turn circulation for buses.

A facility renovation plan was developed with the assistance of an engineering firm, Mead & Hunt, with improvements to be implemented in 6 phases starting in 2019 through at least 2024. Because of the need to use its federal formula funding for buses and capital maintenance, the facility renovation will be 100% locally funded. Metro determined that final phases needed to be delayed due to funding needed to implement the planned east-west BRT route and other needs. Implementation of the programmed facility renovation plan will improve safety for Metro staff, and will help Metro continue to meet or exceed the performance targets for Fatalities, Safety Events, and System Reliability; the performance targets for Injuries relate to riders of vehicles in service, and will not be impacted by safety improvements at the maintenance facility.

The renovation will have positive impacts on system reliability. Employees will be provided a better, more modern, and healthier place to work. A new, proper, environment will enable employees to be more productive without compromising their safety. This could improve the number of vehicles inspected on a daily basis which would improve the spare ratio and overall road failure rate.

The 3B phase includes the operations unit areas. The biggest impact will be new driver amenities, including a break room that is the proper size to accommodate all drivers, quiet spaces and rooms to rest, kitchen amenities, and new furniture. Well-rested drivers are safe drivers. The current environment for them is sub-optimal. Operations will have a larger dispatch office and supervisor amenities to improve their working environment. This will have positive impacts to service delivery and safety. A more organized and properly sized work space will enable supervisors to work with a lower rate of error. If an operations supervisor makes a mistake, it often has an impact on service delivery. For example, when a supervisor takes a sick call from a driver but forgets to assign the work to a standby driver. That bus doesn't run or is heavily delayed which has a domino effect on the system with passenger overloads, potential safety issues with passengers or students waiting outdoors for a longer period of time, etc. A better work environment will reduce the likelihood of this type of mistake.

The federal 5307/5337/5339-funded annual bus purchases in this TIP will help reduce the age of the Metro transit revenue vehicle fleet, and should result in a lower number of System Reliability/State of Good Repair incidents. The 2024 "Articulated bus safety equipment for VRU protection" project will provide feedback to both drivers and vulnerable road users

(VRUs) outside the vehicles if there are potential conflicts between the bus and any VRUs, improving safety for VRUs.